AN ACCESSIBILITY-ACTIVITY BASED APPROACH FOR MODELLING RURAL TRAVEL DEMAND IN DEVELOPING COUNTRIES

By

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ABSTRACT

For most rural populations in developing countries, travel to access basic needs is considered a burden, in terms of wastage of their daily time and efforts. Lack of adequate access to health, education and market centres is found to be responsible for problems like high mortality rate and low literacy rate and high sense of isolation. Recent research has recommended that time constraints should be incorporated in attempting to model rural travel behaviour.

The research reported in this thesis integrates household accessibility analysis within an activity-based framework to model travel demand. The conceptual development recognised the derived nature of travel. The household access needs are transformed into individual activities through household role allocation. The spatial and temporal constraints on the activities along with monetary, cultural and social constraints on individuals determine accessibility of the activities to the individuals. Probabilistic behavioural models have been developed to model individual activity choice and the resulting travel.

Household data collected from representative rural areas of Pakistan were used to analyse rural activity-travel behaviour. Household activities analysed were Work, Education, Market, Health and Leisure. The results indicated the varying nature of these activities and that of individuals responsible for carrying out the activities. It was found that Household Heads are responsible for carrying out most out-of-home activities required to fulfil household needs.

Models developed were applied to various situations. The models in general were found to validate the concepts developed in the research. Prediction results for activities Work and Education were in agreement to the observed data. Results for activities Market, Health and Leisure showed that a time horizon must be considered to recognise the non-daily nature of these activities. Models addressing time horizon decision showed better agreement between predicted and observed travel demand.

"God alternates night and daylight;
In that there lies a lesson for those possessing insight"
[Al-Quran 24:44]

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ABBREVIATIONS AND GLOSSARY

Accessibility	A measure of the potential of an individual (or type of person) at a given location, to take part in a particular activity or set of activities.
Activity	A task requiring travel and time to participate in (for example Work).
AI	Accessibility Indicator; A term used in rural accessibility planning to indicate difficulty of households to access an activity.
BM	Accessibility Benefits index; An index measure of accessibility benefit.
$(BM_i)_j^k$	Accessibility Benefit for individual *i* to participate in activity *j* at location *k*
BNL	Binary Logit model
CARLA	Combinatorial Algorithm for Rescheduling Lists of Activities
Cluster	Sub-division of survey area on the basis of distance from market centre
HATS	Household Activity Travel Simulator
IMT	Intermediate Modes of Transport
IRAP	Integrated Rural Accessibility Planning; A methodology to study rural access problems.
IT	Information Technology
LCS	Life Cycle Stage
MNL	Multinomial Logit model
MT	Motorised Transport
NMT	Non-Motorised Transport
Opportunity	An activity fulfilling all the three components of accessibility (i.e.Transportation component, Spatial component and Temporal component)
$(\Pr_i)_j^k$	Probability that individual *i* will choose activity *j* at location *k*
Rs.	Rupees (Pakistani currency)
RTP	Rural Transportation Planning
$(T_i)_j^k$	Travel demand of individual *i* for activity *j* at location *k*
TF	Threshold Frequency; Number of times (in a given time period) the threshold of an activity is reached.
TL	Threshold Level; The extend (in terms of days) a household can postpone an activity.
TSP	Time-Space Prism; A prism drawn with time and space as the two co-ordinates.
UTP	Urban Transportation Planning
VOT	Value Of Time

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Travel patterns in rural areas of developing countries are dominated by trips required to access basic needs and services. It has been reported that the time spent on such travel is relatively constant throughout the year (Edmonds 1998). Rural individuals (especially women and children) spend approximately 0.3-1.5 hours daily in acquiring basic needs like water and firewood. Poor access is responsible for critical problems like high mortality rates, inadequate food security, and improper education (Howe 1996). It is therefore important to understand the role of rural transport in the provision of access. This understanding is possible within the framework of accessibility of activities. The concepts based on accessibility of activities recognise transport as one of the requirements to access an activity. These concepts are able to provide a better understanding of time and space constraints binding upon individuals participating in the activities fulfilling household needs.

Recent research in the field of rural accessibility planning has advanced the understanding of the decision making process at the household level. The concepts developed consider the distribution of household responsibilities in general, and tasks involving transport in particular (Bryceson and Howe 1992, Howe 1996, Odoki 1998). These concepts provided the basis of a comprehensive travel demand modelling framework. The models developed would provide a better framework for any future attempts in the field of rural transportation planning, mostly based on empirical foundations.

The research described in this thesis aimed to develop a conceptual framework for modelling rural travel demand, which integrated household needs and the individual activity participation in order to fulfil these needs. It recognised the household as the originator of all types of needs. These needs are transformed into activities. Household individuals perform the activities. The activities generate travel if they are spatially separated. In the conceptual development, the household becomes the unit of analysis at the needs-formation stage. The individuals are considered as the behavioural unit at the decision making stage.

The modelling framework developed in this research is based on demand for travel explicitly estimated for a set of activities. The framework considers accessibility of activities as the basis for defining the ability of individuals to participate in activities within their time-space constraints. These two concepts, accessibility of activities and travel for participation in activities, are integrated to form an *accessibility-activity approach* (Ali, Odoki, and Kerali 1999). The underlying concept therefore views travel patterns of individuals as a subset of their activity patterns, where activities are conditioned on the basis of an individual's ability to access the activities.

The economic principles that form the basis of conventional urban transportation planning are considered inadequate for application to rural transportation planning in developing countries, where gaining access is the determinant of travel. This research addressed the economics of rural travel decision-making in the context of wastage of time pertaining to access spatially dispersed activities. A point highly stressed in the literature is the importance of cultural and gender effects in rural travel analysis in developing countries. The development of the travel demand modelling framework at the household level is able to address the cultural and gender issues.

1.2 RESEARCH OBJECTIVES

The following objectives were set for this research:

1. *To develop a conceptual framework to study rural needs and travel to access the activities fulfilling these needs.*

2. *To analyse rural travel demand on the basis of accessibility of activities.*

3. *To consider cultural and gender effects in the rural accessibility-activity framework.*

4. *To study factors governing the economics of decision making.*

5. *To develop a comprehensive system for modelling rural travel-demand in developing countries.*

1.3 THESIS LAYOUT

In order to meet the objectives of the study, a research framework was developed. The following paragraphs explain the research framework and the layout of the work presented in this thesis. A graphical representation of the structure of the thesis is given in Figure 1.1.

Chapter 2 provides the background to the issues in rural transportation planning in developing countries. It analyses the existing methodologies and draws conclusions regarding the gaps identified and the way forward to cover these gaps. It establishes the need to develop a rural travel demand model.

Chapter 3 reviews the basic concepts of accessibility of activities as the basis to represent individual travel behaviour in the context of participation in activities. The two broad modelling concepts reviewed are accessibility analysis and activity analysis. This forms the basis for development of a travel behaviour modelling framework by incorporating accessibility analysis in an activity-based framework.

Chapter 4 deals with the development of the rural travel demand modelling framework. It explains the basic concepts used and derives the mathematical forms for modelling various stages of the framework.

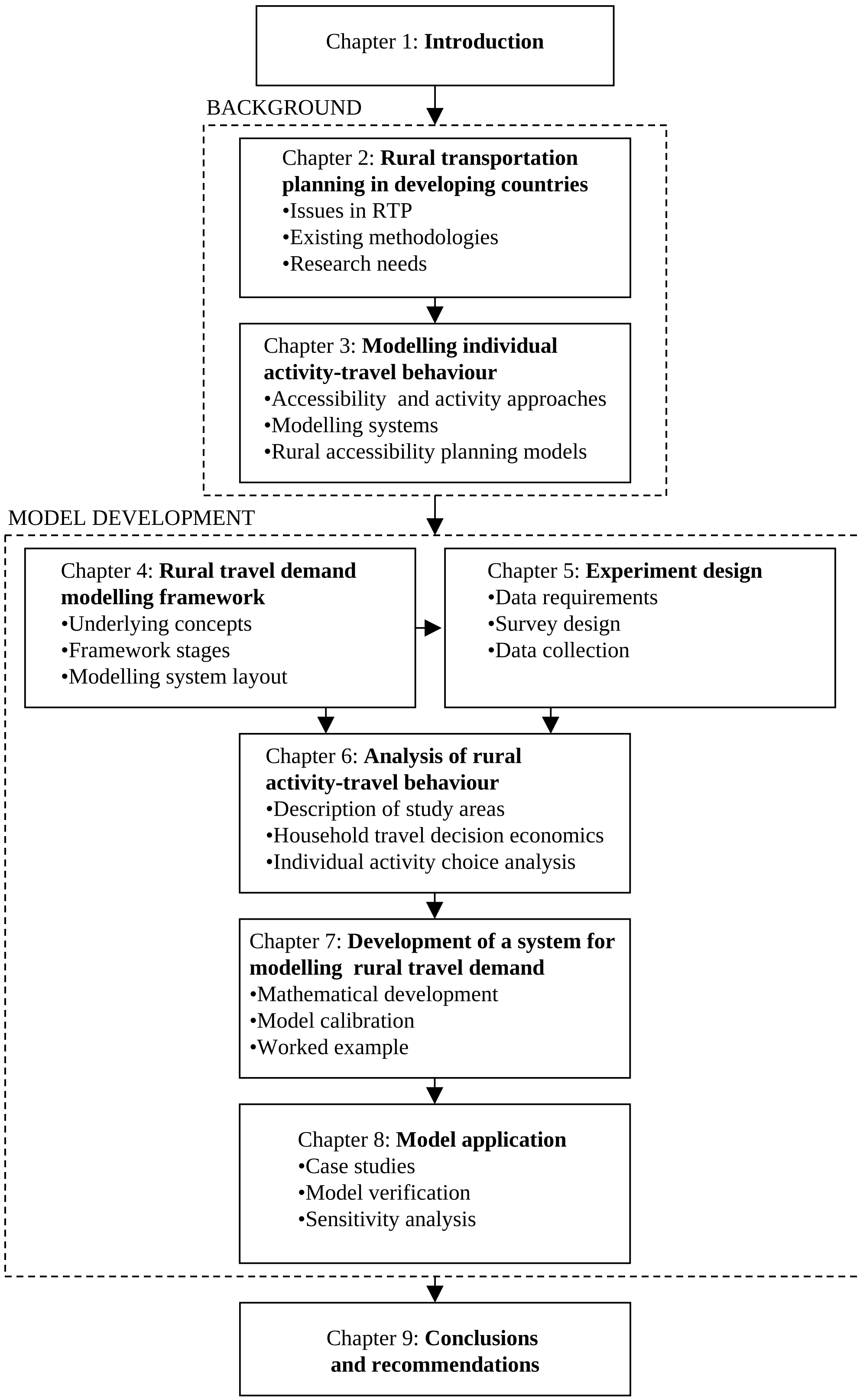


Figure 1.1 Research framework and thesis layout

Chapter 5 describes the experimental design for the field data collection exercise carried out from representative rural locations in Pakistan. It includes the results of a pilot data collection from the same area, and develops a questionnaire for detailed data collection.

Chapter 6 studies the activity-travel behaviour of rural households by analysing the data collected from the rural locations of Hala and Khuzdar, Pakistan. The aim of this analysis was to validate the conceptual framework and to provide inputs for model development.

Chapter 7 presents the development of a travel demand modelling system. The mathematical development of discrete choice models is explained. Alternative logistic regression models were developed and calibrated using the database developed from the household survey. Aggregate demand prediction is carried out using the models developed, and statistical inference is used to discuss model prediction results. A worked example explains the model development procedures.

Chapter 8 describes the model application and sensitivity analysis. The models developed using the data from Hala are applied for the Khuzdar data. Important conclusions regarding model capabilities are drawn. This chapter includes sensitivity analysis of the key model parameters in order to validate their application in various scenarios.

Finally, Chapter 9 concludes the research and outlines the recommendation for enhancing model applications

CHAPTER 2

RURAL TRANSPORTATION PLANNING IN DEVELOPING COUNTRIES

2.1 EVOLUTION OF RURAL TRANSPORT PLANNING PERSPECTIVE

The perspective of rural transportation planning in developing countries has changed from a 'road-and-car' approach to a 'needs-led' approach (Howe 1996). The first approach, which continued till the 1980s, focused on the rural transport network and assumed that motorised transport is capable of handling all transport needs of rural households. In the second approach (since 1986), transport was seen as a component of an overall system serving the needs of the rural population (Dawson and Barwell 1993). This change of perspective occurred as a result of a series of concerns on the rural transport interventions in developing countries that failed to bring about the expected developmental benefits. It was realised that a major component of rural travel, namely the off-road network, cannot be addressed using the first approach (the road-and-car approach). The second approach (the needs-led approach) although still in its evolution stage, has been able to provide improved insight into the actual development needs and benefits from the data at the base level. The requirement remains to develop an analytical formulation and a comprehensive planning model.

2.2 RURAL ROADS AS FACILITATOR OF ACCESS

There is a basic lack of understanding of defining the actual role of rural roads in the overall road network hierarchy in developing countries. Hine (1982) recognised the role of rural roads in providing basic accessibility, and found that personal travel constitutes the highest proportion of rural travel demand. As such, better access to rural roads can increase the demand for passenger movement. Considering the evaluation of benefits, Hine (1982) stated that the current methodologies give high weighting to income, but ignore other dimensions, namely, social change (such as healthcare, education, and political development).

The migration of rural populations into areas of better road access reveals the inadequate access in the areas of their origin. The reason for very low travel on rural roads is incomplete access provision. For example, walking is preferred for the whole journey because an unconnected road results in an unjustifiable transport cost for the partial journey using other modes of transport. The role of rural roads in providing opportunities to the local population to obtain better output for agriculture, reducing the sense of isolation of the rural populace, and improving living conditions and services must be given due consideration in the overall planning of rural roads (Tingle 1977).

2.2.1 The users and non-users in rural transport

The first step towards identification of rural transportation system requirements is to establish an interaction between land-use and transport. In the absence of any suitable sampling frame for carrying out survey in rural areas of developing countries, roadside traffic counting and interviewing provides the starting point for rural transport demand estimation (Howe and Tenant 1977). Household surveys, on the other hand, could be non-representative because households lack cohesiveness and also because of the semi-permanent migration of important household members. Howe and Tenant (1977) derived land-use-transportation interaction from roadside interviews on the basis of a pre-determined land-use category system. They developed trip generation equations based on significant land-use factors. They found that vehicle ownership is the fundamental unit in trip making. Market trips by a large rural population are dependent on the provision of services by a few vehicle owners. This leads to the conclusion that rural individuals unable to meet the ‘demands’ of vehicle owners (travel fare or timings) are only left with the option of not making the trips. The study, being based on transport users, presumably did not take account of a large number of the non-users of the transport (Howe 1996).

A direct example of the neglect of real transport issues can be found from Bangladesh. Barwell et al (1985) reported that in Bangladesh, non-motorised transport (NMT) has a 94% share in the transport sector, while the policies recognising the role of NMT in transport only comprise about 0.004%.

Riverson and Carapetis (1991) identified serious gaps in the work on the subject, noting that most efforts for design and construction of secondary and tertiary roads, mainly for motorised traffic, meet merely about 5% of the requirements of rural travel. The current methodologies fail to address walking and other off-road activities related to travel and goods communication. They suggested the need to incorporate accessibility considerations and the quantification of road-off-road interaction.

Proper attention must be given while considering any change from non-motorised to motorised traffic (Hine 1982). For example, a good riding surface will improve efficiency and reduce operating cost of a cart, considering local norms, culture and journey distance.

2.2.2 Mobility as a determinant of accessibility

Ellis (1996) studied the mobility aspects of rural accessibility. He analysed the effects of the provision of transport services for a given infrastructure in reducing operating costs and enhancing mobility. His research integrated spatial planning and provision of transport services in order to enhance household mobility/accessibility. It was concluded that availability of a variety of transport modes from walking to trucks (present in the Asian countries studied) is responsible for an efficient transport charges infrastructure (Ellis and Hine 1995). Furthermore, this efficient transport charges environment has a very positive effect on household travel (and as a result improves their accessibility), in the sense that with a marginal increase in their income level they can take advantage of the higher technology stage (better transport mode) available in the area. Howe (1995), on the contrary, found that non-availability of low-cost transport modes was a major source of decreased mobility and increased poverty of rural population in Sub Saharan

Africa. Both these works addressed personal mobility as an important determinant of rural accessibility in least developed countries.

2.3 APPLICATION OF CONVENTIONAL TRANSPORTATION PLANNING METHODOLOGY

A considerable research effort has been made in studying rural transport in developing countries in the framework of the conventional urban transport planning (UTP) process that primarily evolved in developed countries (Mekki 1981, Yanuguaya 1983, Banjo 1984, 1988). Mekky (1981) found serious errors in the direct application of conventional UTP approaches to developing countries and recommended seeking relationships between distribution of work places, residential places and accessibility. The major features to be incorporated in a developing country context are non-uniformity of land-use and the multipurpose nature of trips, high population growth, increased rural to urban migration and scarce resources. Models must be responsive to stringent cultural norms. For instance, kinship (family attachment) must be given high weighting for social trips. Although Mekky (1981) focussed on the UTP problems, his arguments are applicable for developing countries' rural transport problems also. He recommended the use of simple or less complex models to cope with data scarcity. Due to fast changing land-use, incremental models are recommended, i.e. models incremental with respect to the near future.

Yanuguaya (1983) suggested that the modelling approach must be inductive (developed from data) instead of deductive (calibration of existing models). Banjo (1988, 1984), has given an outlook of tailoring the conventional UTP for application in developing countries. The mobility parameters to be added are the lack of access (absence of means to make a trip) and cost of access (affordability without sacrificing). Modal split must consist of a formal motorised component (e.g. cars), an informal motorised component (e.g. a large number of motorcycles) and non-motorised component (animal or human driven vehicle and on-foot travel).

Except for Mekky (1981), these studies did not perceive that the economics of the transportation system is not transferable to the highly constrained nature of the problems in developing countries.

2.3.1 Economics of rural travel

The current awareness in rural transportation planning for developing countries has given a modified view to the economics of rural transportation; a study of market forces as if people mattered. Howe (1996) developed a case in support of this concept that the conventional transport economics vision (the market place and price) is irrelevant in the context of high monetary and time constraints, prevalent in rural areas of developing countries.

The above argument means that the willingness to pay concept must be revised when dealing with rural transport problems in developing countries. In conventional transport economics arguments, the transport supply (roads, vehicles) is the *product* and is available to all *users* in the marketplace (the region). There is an affordable price attached to this product. In the case of rural individuals in developing countries, most people, being non-users, are *out* of the market place. The new rural transport vision in developing countries must attach a high price to the wastage of time, and develop methodologies based on this concept.

There is evidence in developed countries that need and deprivation provides justification for special transport provisions (Moseley 1979, Howe 1996). The provision of facilities for the disabled may be cited as an example. This argument is the basis of the recent developments in methodologies such as the Integrated Rural Accessibility Planning (IRAP) and Integrated Rural Transport Planning (IRTP), devised for developing countries (details of IRAP/IRTP are given in Chapter 3). These methodologies are people centred and provide a starting point for understanding the economics of rural travel in developing countries (Howe 1996, Edmonds 1998, Dixon-Fyle 1998).

2.4 CULTURAL AND GENDER ISSUES AFFECTING TRANSPORT LOGISTICS

Two important dimensions of rural transportation planning in developing countries to be given due consideration are the issues of gender and cultural norms. Bryceson and Howe (1992) strongly suggested that there is a need to understand how women take part in sharing the transport burden relating agricultural needs, household essential services and childcare, in a multitasking (all in one trip) strategy. Through this, a complete household demand analysis (not only for transport), transformed into agricultural product maximisation could be carried out. Based on findings from Sub Saharan Africa, Bryceson and Howe (1992) identified an important decision chain, composed of three links; namely, cultural norms, land use, and transport. This is important while attempting to model the culturally closed system prevalent in rural areas of most developing countries. They have given examples showing that the transport interventions (in the form of providing cycles to the local people) failed to achieve complete utilisation. This calls for an in-depth understanding of the logistics of local level transportation and all its possible dimensions. The framework suggested could be extended to develop a hierarchy of the overall transportation decision chain.

In recent years concern has been expressed about the effectiveness of rural transport interventions in developing countries in achieving their development targets. This has resulted in a redefinition of the basic approach to the problem (Barwell et al 1985). This revised approach again calls for studying rural transport planning in the context of the needs of local populations.

2.5 RURAL ACCESSIBILITY ANALYSIS

It is understood that the real source of deprivation of the rural population is their lack of accessibility to various activities (Barwell 1996). It is therefore necessary to explore this concept in order to have a better understanding of rural transport problems. Moseley

(1979) provided guidelines for quantifying accessibility and presented various alternative solutions to accessibility problems. He developed a hierarchical transport / land use plan defining area-wise accessibility ratings. Moseley showed that a *population potential index* could be found, based on the gravity model and the accessibility of a location, which can be quantified in terms of generalised transport cost.

Through his work, Moseley (1979) defined two fundamental guidelines for studying rural accessibility:

a) mobility: which deals with the transportation solutions to the accessibility problem
b) siting of services: which deals with non-transport solutions for the accessibility problem

These guidelines are the foundation of the recent work done in accessibility planning in rural areas of developing countries (Barwell 1996).

Among other land-use categories, Howe and Tenant (1977) did not find accessibility to be a significant factor in explaining on-road trips. This leads to a need to investigate the accessibility for the off-road travel. These were the trips that were 'unrealised' due to several reasons. A quantification of these unrealised trips, though, is required for proving this point. It is clear that only an accessibility-based methodology can address this issue. The conventional trip-based methodologies are unable to handle this issue.

Hine et al (1983, 1983a) argued that the provision of basic accessibility, for example replacing footpaths by vehicle tracks, has much higher impact (about one hundred times) than improving the existing accessibility condition (for example, by providing road resurfacing). They concluded that accessibility has a less direct effect on market agricultural production, however, it affects it indirectly through loan financing.

2.5.1 Individual-based approach in rural travel analysis

The common conclusion of a number of studies is that the wastage of time in acquiring access to basic needs and services is responsible for non-achievement of development objectives (Edmonds 1998, Bryceson and Howe 1992). These studies also emphasise that transport should be considered in its facilitating role of providing access at a household level.

Recent studies directed specifically at understanding the factors defining transport planning in developing countries, have highlighted concern about the need to address the transportation needs of rural individuals (Barwell 1996, Howe 1996). It is now possible for these findings to be utilised in the methodological development of rural transport planning techniques (Sieber 1998, Odoki 1992).

Moseley (1979) provided an insight to the rural accessibility problem and developed a general framework for incorporating accessibility into rural transport demand generation. A measure of difficulty (or unpleasantness) of making a trip must be converted into a generalised cost function. The central focus, Moseley (1979) suggested, must be on 'opportunities' not behaviour.

The missing links in rural travel analysis are the individuals, both in the form of users and the non-users. The conventional methodologies tried to study the transportation system without due consideration of its users and especially its non-users.

Research by Odoki (1992) recognised these missing links and developed rural transport planning methodologies incorporating the individual level analysis. Odoki showed that the household-level needs-based accessibility analysis is able to address both users and the non-users through the same framework.

2.6 RESEARCH DIRECTION

There is a need to form a link between classical accessibility research as proposed by Jones (1981) on the development of the accessibility framework, the complementary work by Hine et al in Ghana (1983, 1983a), and the more recent Integrated Rural Accessibility Planning (IRAP) study reported by Howe (1996). While Jones has put in place a mathematical foundation for the accessibility approach, the other two works (Hine et al 1983, 1983a, Howe 1996) define practical implications of providing access by studying two aspects of rural access exclusively for developing countries, namely; agricultural production and personal travel. An important area that needs attention is the development of a travel demand methodology, being a key input to the whole transport planning system.

Transport should be considered in its facilitating role of providing access that must encompass all the basic needs and services. It is understood that the real source of deprivation of rural populations in developing countries is their lack of accessibility to various activities. It is therefore essential to explore this area to have a better understanding of rural transport problems.

2.7 SUMMARY

The first step towards analysing the rural transportation planning problems is to develop a basic definition of rural transport problems in developing countries (Hine 1982). Other important steps include an understanding of the primary issues (Howe and Tenant 1977), in the light of the real transport logistics of the rural population of developing countries (Bryceson and Howe 1992). There have been concerns regarding the application of conventional urban transport planning models for the scenarios in developing countries (Mekky 1981, Yananguaya 1983, Banjo 1988,1984). This reveals that the basic issues in rural development planning are unresolved, as the problem resides not with the provision of the transport system (Hine 1982), but with the accessibility of activities (Moseley 1979, Odoki 1992). The off-road travel patterns using more logical modes must be incorporated in rural travel analysis. Identification of all forms of non-motorised transport (NMT) and intermediate modes of transport (IMT), and their incorporation into models, is needed, along with the motorised component (MT). Models must be responsive to changes from one transport form to others (between NMT, IMT and MT), due to changes in accessibility levels (Riverson and Carapetis 1991).

The way ahead is to conceptualise the accessibility of activities to the rural population and to utilise it in a rural transport demand-modelling framework. The model must be sensitive to local service infrastructure, cultural norms, monopolistic economy, and gender issues. Lessons must be derived from the failure of high technology interventions in fully transferring anticipated benefits. The contribution of the concepts developed will be an appreciation of the overall rural transport planning for developing countries.

CHAPTER 3

MODELLING TRAVEL BEHAVIOUR

3.1 BACKGROUND

This chapter first reviews the concepts of accessibility as applied in the analysis of travel demand forecasting. The mathematical forms of accessibility measures incorporating various constraints faced by individuals are discussed. The main objective is to develop a measure of accessibility that is appropriate for application to rural areas of developing countries.

The next stage in development of a behavioural travel demand modelling system is the identification of the activity-travel patterns of individuals. The concepts of activity-based travel analysis are reviewed and their mathematical forms are described. A brief statistical analysis of trip-based data is presented as a case study to justify the direction taken for this research.

The outcome of the chapter is the formulation of an accessibility-activity approach that is suitable for incorporating the constraints faced by individuals when analysing rural travel demand for developing countries. This approach incorporates the accessibility of an activity and participation in the activity within the same framework.

3.2 THE ACCESSIBILITY APPROACH

The main focus of this research was to incorporate all factors affecting individual accessibility in a travel demand modelling process. It therefore seemed appropriate to first investigate the concepts relating to individual accessibility and then to establish their relevance for the rural travel demand modelling process envisaged in this research.

3.2.1 Basic Concepts

Accessibility is a measure of the potential of an individual (or type of person) at a given location, to take part in a particular activity or set of activities (Odoki 1992). It has three components (Hägerstrand 1970, Burns 1979):

(i) the *Transportation* component - which deals with mobility

(ii) the *Spatial* component - which deals with activity location, and

(iii) the *Temporal* component - which deals with the timing of activities.

An *Activity* is a task requiring travel and time to participate in (for example work). An *Opportunity* is an activity fulfilling all three components of accessibility.

3.2.2 Accessibility Measures

The measures of accessibility seek to give an operational form to the concept of ease or difficulty of reaching activities. Jones (1981) reviewed various definitions and measures of accessibility. Most definitions of accessibility address some or all of the three components of accessibility with the help of functions incorporating one or more of the following four factors:

a) spatial separation of locations
b) travel cost
c) individual weighted or population weighted opportunity, and
d) consumer surplus.

Measures of accessibility use different functions to represent their intended definition and use. These functions are; actual cost or time of travel, generalised cost, individual's utility and the normalised or population weighted characteristics of opportunity.

Jones (1981) defined six criteria to test the viability of any accessibility measure in the general sense. However, Jones left the final interpretation and use of a measure to be case dependent. There are various factors used in development of accessibility measures, as given by Jones. These factors and their resulting accessibility measures are reviewed here with the intention of testing their relevance to this research. As part of a screening process, Table 3.1 presents these factors in the form of six criteria to be fulfilled:

1. Ability to account for location and characteristics of individuals.
2. Ability to account for location and characteristics of opportunities.
3. Ability to account for connecting transport system.
4. Ability to demonstrate constant accessibility with increased opportunities.
5. Ability to account for changes in accessibility with improved transportation.
6. Ability to demonstrate improved mobility from improved transport for non-users.

Table 3.1 Explanatory power of Accessibility Measures

DEFINITION GROUPS	MEASURE TYPE	MATHEMATICAL FORM[a]	CRITERIA COUNTS FOR MEASURE TYPES[b]					
			1	*2*	*3*	*4*	*5*	*6*
Network measures	Spatial Separation of locations	$A_{ij} = f(c_{ij})$			■			
Travel Measures	Travel cost of obser-ved or expected trips	$I_i = \frac{\sum_j c_{ij} T_{ij}}{\sum_j T_{ij}}$	■	■				
Combined Spatial and Travel Measures	Opportunity the individual possesses	$BM = q(x).a_k.u(T_k)$	■	■	■	■	■	■
	Opportunity weighted by average population	Hansen:(population weighted) $A_i = P_i \sum_j B_j f(c_{ij})$	■	■	■	■	■	■
		Contour Measures: Total Opprotunities $= \sum_j B_j h(c_{ij})$	■	■	■			
	Consumer surplus	Consumer Surplus: $S_{ij} = \int_{c_{ij}^{(2)}}^{c_{ij}^{(2)}} T_{ij}(c)dc$	■	■	■	■		

[a]General description of Variables:
[b]Shaded area denotes criteria fulfilled

Abbreviations and Terms used:

$f(c_{ij})$ = generalised cost function; T_{ij}= interzonal trips; A_{ij}=accessibility of zone j from zone i
P_i = population of zone (from); B_j = opportunities in zone (to) I_i= inaccessibility of zone i
$H(c_{ij}) = 1$ if $c_{ij} \le C$, and 0 otherwise; where C= the contour value S_{ij}=Consumer's surplus
BM = accessibility benefit of an individual for participation in an activity-location *k*
$q(x)$ = transportation component of accessibility
a_k = spatial component of accessibility
$u(T_k)$= temporal component of accessibility
A_i = accessibility index of zone i

The shaded blocks in Table 3.1 denote that the measure is able to fulfil the relevant criteria. The higher the number of shaded blocks the greater the ability of the measure to define the accessibility of activities available to an individual from the point of view of application to rural accessibility analysis for developing countries. A brief description of the measures within each category and reasons for failing to meet some of the criteria are given below.

a) *Network measures* provide information about the transport network but fail to relate transport to the location of opportunities or the individual. They fulfil only criterion 3.
b) *Travel measures* provide information about observed or future travel but are unable to take into account the resulting travel pattern due to changes in travel cost or the accessibility of the activities as perceived by the individual. They fulfil criteria 1 and 2.
c) *Combined (network and travel) measures* in general satisfy most of the six criteria as they tend to include three prerequisites, i.e. travel, location and the individual's perception towards an opportunity.

The combined measures include four types; Time-space geography measures, Hansen measures, Consumer surplus measures, and Contour measures (Jones, 1981). These measures are reviewed in more detail in the following paragraphs.

i) *Time-space geography measures* are able to relate the individual with the opportunities as well as the connecting transport system. In general they fulfil all the six criteria.

ii) *Hansen measures* are of two types; one which provides a mapping of all opportunities available in a zone weighted on the basis of a deterrence function; and the second which weights opportunities on the basis of deterrence function as well as the zonal population. The accessibility index is obtained by summation of all these opportunities. They also fulfil all the six criteria.

iii) *Consumer surplus*, when used in an accessibility measure, can conceive the benefits of change in accessibility to the individual and are, therefore, able to reflect the demand for travel (taken as goods in the economic sense). The predicted number of trips T_{ij} are obtained in terms of the trips at origin and the attractiveness of the destination, as a measure of the opportunities. But due to its nature of development, the consumer surplus can only take into account the change in travel pattern, i.e. it is unable to find the proportion of the population not using the system neither before nor after the changes. They clearly violate criterion 6.

iv) *Contour measures* provide a mapping of opportunities on the basis of criteria functions (for example, travel cost to the nearest facility). They relate land-use and transportation elements of the opportunity by means of deterrence to travel. However, they do not provide information about how the individuals are affected by this interaction. They are relatively undemanding of data.

From the above discussion it seems that both Hansen measures and the Time-space geography measures are able to meet the six criteria set out in order to test the viability of any measure to completely address the full definition and use of an accessibility measure. The following points cover a more detailed comparison of these two measures in order to assess their performance in addressing rural accessibility problems.

a) Hansen measures provide an aggregate measure of accessibility of the activity (as applicable to the overall population), while the Time-space geography measures are able to address individual accessibility problems.
b) In the Hansen measures, time is considered in the form of generalised cost, while Time-space geography measures address time in real terms. It may therefore be argued that Hansen measures are incapable of addressing time constraints binding upon individuals, one of the most important issues to be incorporated in rural accessibility analysis for developing countries.
c) The Hansen measures are able to cover few activity types, while Time-space geography measures have the flexibility to address all activity types.

The above analysis leads to the conclusion that Time-space geography measures are more suitable for rural accessibility analysis for developing countries.

3.3 TIME-SPACE GEOGRAPHY APPROACH

The time-space geography approach is primarily based on the space-time autonomy of an individual as conceptualised by Hägerstrand (1970). Time and space dimensions are integrated to study individual behaviour under constraints.

Time-space geography measures conceive the activity programme of an individual in terms of possibilities to perform activities. Time is viewed both to overcome the spatial separation of activities as well as the constraint on the individual. This is closer to the definition of accessibility that concerns with the opportunity an individual (or type of person) at a given location possesses in order to take part in activities. The 'time-space prism' (TSP) of an individual considers time as a fixed constraint on the individual and 'delineates' the sequence of activities 'possible' during a time period (say a day). Two important elements of time used are the minimum time required by the activity and the maximum time to be spent travelling.

The TSP of a hypothetical rural individual is illustrated in Figure 3.1. The individual is free to move in all directions at a uniform speed v1. The horizontal axis represents space in linear dimensions (for example projected distances) and the vertical axis represents time. This simplified prism gives the total time budget available to the individual (e.g., between 8 a.m. and 1 p.m.). This general prism is then constrained on the basis of some further coupling constraints on the individual (i.e. to be present at certain places at certain times). An example is given to define the basic concepts and terminology used.

Consider a school-going child selected from a hypothetical rural household. In Figure 3.1, a '2-D map' is superimposed on the time-space diagram of this individual. A primary school at location A, having less facilities, is reachable in one hour. Another primary school, having a higher quality of education, at location B, is at a further hour's journey from location A. Both schools have the same 'opening hours' (9AM-4PM). The time-space prism of the child ends in the horizontal direction if he opts to go to any of the schools (shown by lines 'ef' or 'gh' in Figure 3.1). His transport, temporal and spatial constraints, however, will define his ability to reach any of these activities. In other words, his TSP is able to define the accessibility of the activity, namely attending school.

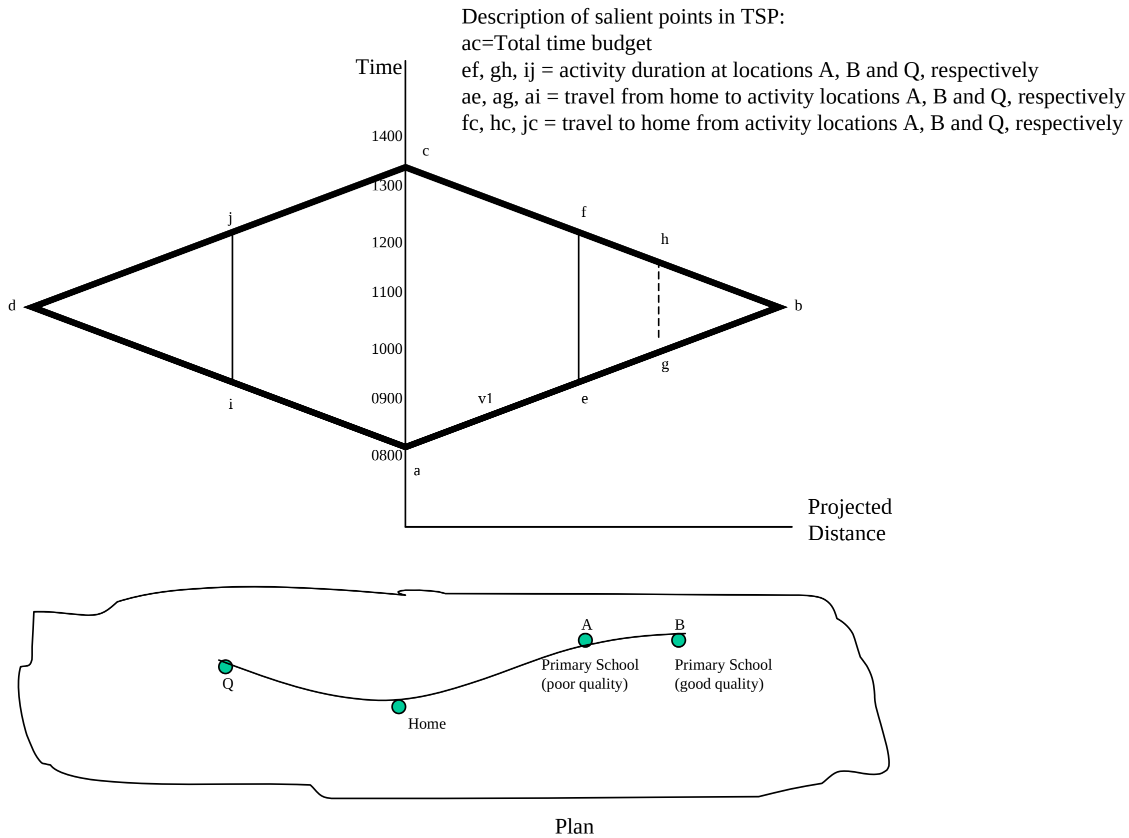


Figure 3.1 Time-Space Autonomy of individuals

3.4 ACCESSIBILITY MEASURES BASED ON TIME-SPACE GEOGRAPHY

Time-space geography measures view the activity programme of an individual in terms of taking part in activities. Burns (1979) developed an analytical formulation to incorporate all the components of accessibility, i.e. transportation, temporal, and spatial components, in a single framework. He added temporal dimensions to the conventional 'spatial-accessibility' approach, which treated the ability of an individual to reach the activities independent of time constraints (both on the activity and the individual). The underlying assumption is that individuals value opportunities available to them in relation to the time budget at their disposal. Burns (1979) defined an opportunity in terms of three non-negative numbers; the travel distance (x), the attributes of the opportunity (a) and the duration of time (T). He represented an opportunity by means of an ordered triad (x, a, T). Collection of such points creates a three-dimensional space that determines an individual's accessibility space.

3.4.1 Accessibility Benefits model

The accessibility benefit measure proposed by Burns (1979) was improved and adapted for application to rural accessibility planning in developing countries by Odoki (1992, 1998, 1998a). The Accessibility Benefits Model (BM), developed by Odoki (1992), integrates various components of accessibility and defines an accessibility measure for application to rural areas of developing countries. The following paragraphs discuss the salient features of the BM model, its mathematical formulation, and explain its relevance for analysing rural travel demand.

The BM model contains four salient factors:

Distance of activities from the location of individuals: The spatial separation of location of activities and individuals is an important determinant of accessibility of activities to individuals. Transportation is needed to cover the distance. This means that transportation infrastructure is an important determinant in defining accessibility of activities. The transportation component of BM incorporates a generalised cost function that describes the deterrent effect of travel on the individual’s perception of the utility of opportunity on the basis of their income level.

Time for activity participation: In a society with limited time at their disposal, the amount of time available for activity participation needs to be properly addressed. Considering the minimum time required for certain activities (for example work) and the opening hours of certain activities (for example shopping), this is an important factor in defining opportunities to the individuals.

Attributes of a single location-activity: The household assigns weightings to the attributes of spatially separated activities. For example, a household without children would not assign any weight to a primary school. In rural accessibility planning it is important to recognise the attributes of an activity as being a determinant of accessibility. For example, the quality of schools within reach of a local population will determine their accessibility to good education. This is also the basis of the Integrated Rural Accessibility Planning (IRAP) concept, described later, whereby the accessibility of an activity to the local population is the basis of defining development targets.

Relative importance of activity to the individual and the household: Contrary to Hansen's population weighted opportunities, this approach caters for value weighted opportunities conforming to the individual's time-space autonomy. An activity fulfilling the physical constraints of transportation and its temporal nature, cannot improve accessibility if it is irrelevant to the individual (for example, Work for a school child). It is important, therefore, to recognise the relevance of activities to the individual within the context of the household in order to develop mathematical forms for the accessibility measures.

BM Components

Odoki (1998) integrated the three components of accessibility into a single framework by defining BM as:

$$BM = q(x) \cdot a_k \cdot u(T_k) \tag{3.1}$$

where

$q(x)$ = transportation component of accessibility

a_k = spatial component of accessibility

$u(T_k)$ = temporal component of accessibility

The accessibility benefits measure BM in the above form represents the value weighted mapping of opportunities. These opportunities are activities which individuals desire to perform in order to derive benefit from the activity participation. They have to travel to the spatially distributed activity locations and therefore spend time in two ways, i.e. time for travelling, and time for activity participation. The mathematical form of BM considers the perceived value of time in the following ways:

a) generalised travel time
b) perceived value of time for activity participation (less travel time)

Generalised travel time

a) The generalised travel time is addressed through the function *q(x)* which has the form:

$$q(x) = \exp\left[-\left(\frac{m}{\alpha I} + \frac{1}{v}\right)2x\right] \tag{3.2}$$

where

m = the monetary travel cost per km

αI = the value of travel time per hour assigned by the individual having income I

v = the speed of travel in km/hr

x = distance to the location in km

Important points to be noted here are:

i) The value of function decreases with increase in monetary travel cost: this represents the fact that travel costs are considered as deterrence towards travel.

ii) Higher income would yield higher values of *q(x)*: this is based on the assumption that people with income I will value their time at αI per hour. This results in higher travel benefit for higher income individuals.

iii) The function decreases as the distance to the activity increases.

Time for activity participation

The perceived value of time for activity participation is considered in the form:

$$u(T_k) = h^{\gamma}(T_k)^{\gamma} \tag{3.3}$$

and

$$T_k = \tau - \frac{2x_k}{v} \tag{3.4}$$

where

h = measure of utility per unit time, based on the primary activity

γ = marginal utility of time available to the individual for the activity participation

τ = total time budget

The function $u(T_k)$ is the value of the real time available for activity participation, value-weighted by the function γ.

The marginal value of $u(T_k)$ is analysed using the operation:

$$\frac{du(T_k)}{dT_k} = \gamma \cdot h^{\gamma} \cdot T_k^{\gamma-1} \tag{3.5}$$

The function γ, which defines the marginal utility of time T_k (Odoki 1998), can be analysed by the help of four extreme cases (Burns 1979):

a) if $\gamma<1$ the marginal value of time T_k diminishes as T_k increases, rendering less utility of the time of activity participation to the individual.

b) if $\gamma>1$ the marginal value of time T_k increases as T_k increases, rendering increased utility of the time of activity participation for the individual.

c) if $\gamma=1$ the marginal value of time T_k is constant for all values of T_k, rendering a constant utility of the time of activity participation for the individual.

d) if $\gamma=0$ the marginal value of time T_k is zero for all values of T_k, rendering no utility of the time of activity participation for the individual.

The utility of time for activity participation is therefore a non-decreasing function which means that participation in the activity will render a non-negative utility whenever the time of participation is available, i.e. a zero value of utility if no time is available. The function γ keeps this utility within limits by providing an upper bound to its value.

Activity attributes

In addition to the utility of time, the BM model incorporates the attributes of the utility for the individual by the composite function a_k, which is defined as:

$$a_k = \rho \cdot \omega \cdot c \qquad (3.6)$$

where

ρ = level of activity (for example number of jobs)

ω = attraction characteristics of the activity in the form of weight attached to the activity (for example primary school has higher weight for child under 15 years than any other individual type)

c = model calibration parameter (c>0)

In behavioural analysis, the activity attributes have an important role to perform in defining the activity space of the individual in order to access spatially separated activities. That is:

a) the level of activity offered by the location, addressed by parameter ρ: this term incorporates the conventional activity attraction measure as a determinant of accessibility
b) the weighting attached to the activity, addressed by parameter ω: this incorporates the relevance of the activity within the context of the household role the individual has to perform
c) the model calibration parameter *c*: this incorporates the current level of activities for the whole population or area as compared to the minimum acceptable levels planned

Extension for studying travel behaviour

Odoki (1992) demonstrated the application of the BM model for investment appraisal purposes. In an activity-based approach the need to participate in an activity location is the basis of determining travel behaviour. Recognising the ability of the BM model to address individual accessibility constraints within a utility framework, this research extended the application of this model within a travel demand framework. The BM model described above can serve as a proxy to the utility function incorporating all the three components of accessibility, as access is considered the determinant of travel in this research.

3.4.2 Modelling travel using the time-space geography approach

The concept of 'accessibility of activities' is the main factor that can assist an analyst to understand rural travel patterns. This means that if the opportunities become accessible, they are able to generate more travel. A measure of accessibility with its transport, spatial and temporal components can therefore be used to quantify travel demand. For example, if a bus service from a village to a town is rescheduled (*policy intervention*) to suit dwellers at reduced cost (*relieving transport constraint*), to take them and bring them back at a required time (*relieving temporal constraint*), the need at the town could be met (*relieving spatial constraint*). In the real world problem, the provision of a better transport link (*an improved track, or a new link*) will encourage bus operators to focus their attention to this village (*increased service, reduced fares, or both*) thus making opportunities accessible to the rural dwellers.

3.5 ACTIVITY-BASED APPROACH

The history of person movement research dates back to the 1970s. Hagerstrand's (1970) time-space prism concept acted as a catalyst, and Kofoed (1970) defined a three stage process to form a conceptual framework for analysing personal travel. In this framework, the first stage is the definition of an individual's time-space prism (which Kofoed (1970) defined as contact field) represented by a fixed boundary in space and time. This defines the activities available to the individual. In doing so he defined activities as three-dimension entities. These three dimensions are: purpose (i.e. type of activity), temporal (i.e. timing duration and frequency of activity) and spatial (i.e. location of the activity).

The second stage is the selection of activities based upon the individual's obligatory and discretionary decisions. The third and final stage is the resulting travel.

Representing the trip-based thinking of the era, Kofoed (1970) proposed the need to understand the activity choice and consequently the time-space prism of the individual through his travel patterns. In his framework, Kofoed (1970) emphasised that the travel pattern of an individual is governed by his mobility status. The concepts of internal and external mobility (developed by Kofoed 1970) are worth mentioning here. The former is defined on the basis of an individual's household obligations and the latter is defined through his socio-economic status and the availability of the activities.

3.5.1 A Behavioural Framework

Subsequent research by the Transport Study Unit (TSU) team (Jones et al 1983) enhanced the activity analysis concepts and a considerable amount of work has been done on travel demand analysis using the activity-based approach. The concepts were made operational and underwent similar development elsewhere (Kitamura 1988). The activity-based approach developed from this point onwards views travel demand within a behavioural framework and suggests answers to the following questions (Jones et al 1983, Kitamura 1988):

- what are the needs of an individual?
- what are the opportunities available to him?
- what are the parameters of the utility on which he desires to involve in an activity?

Jones et al (1983) have provided a framework whereby travel is traced in two dimensions, i.e. space and time; as a result sequencing becomes the key element of activities, hence trips.

A study by Ben-Akiva (1996) on the status of travel demand concepts indicated a change in perspective on the modelling approach, from purely a transportation system oriented approach to the activity-behaviour approach. The basic theme is that the demand for travel is derived from a demand for activities. Ben-Akiva's framework was based on three points:

- conceptual development must be based on demand for travel explicitly for activities
- the modelling unit must be an individual considering his household involvement and other constraints, and
- an activity-based modelling system must be used to integrate the daily activity and travel choice in a single framework.

The above references point out a direction for travel demand modelling where involvement in activities is the prime concern. Considering accessibility as the proximity of activities via the transportation network, a concept could be developed in which *accessibility of activities essentially leads to the involvement in activities*.

3.5.2 Modelling travel demand within the activity-based approach

The main thrust of the activity-based approach is to analyse and predict how individuals respond to changes in their travel environment, and how these responses are temporally correlated (Jones 1990, Kitamura 1988, Ben-Akiva 1996). The decision making takes its roots from the following processes:

- household needs and role allocation to perform activities
- scheduling constraints
- spatial and temporal distribution of activities

The household type dictates the formulation of household needs. The household role allocation is necessary in the transformation of these needs to individual activities. The scheduling constraints refer to the activity participation in a multitasking situation. These constraints are imposed from the spatial and temporal distribution of activities, as well as the inter-personal linkages to perform certain activities. These concepts are applicable to the rural transportation scenario in the following ways:

- Firstly, these concepts recognise the importance of household decision making and the role allocation of household members. For example, not just considering the presence of children in defining household structure, but explicitly appreciating their needs and the resulting activity planning (Kitamura 1988). In this way, the concepts are adaptable to an important requirement as repeatedly highlighted in rural transport planning literature (Bryceson and Howe 1992), namely; the cultural and gender effects in activity planning.

- Secondly, the basis of conceptual development is that the travel is a derived demand, i.e. the demand to participate in activities, while the activities are the result of needs. This way they address not the travel but the needs, while incorporating travel as part of a total daily schedule.

With this premise, the conceptual grounds of the activity-based approach are applicable to the need-based thinking required of rural transportation planning.

3.6 EXISTING ACTIVITY-BASED MODELS

3.6.1 An IT-based model

Ben-Akiva et al (1996) reported the conceptual development of an activity-based modelling system in the light of considering information technology (IT) as an option at mode choice stage. People may consider IT as an option while planning their activity programme. In doing so they proposed the following activity oriented considerations:

a) *dis-utility of travel*: individuals travel only when the net utility of the activity plus travel exceeds the activities involving no travel

b) *time-space constraint upon individuals*: for example returning home or the activity-time budget concept

c) *household context*: individual decision as influenced by other members

d) *day to day dynamics of decision making:* addressing the variable nature of travel-time and activity duration for activity work

They defined a modelling framework hierarchy as follows:

Level-1: Lifestyle decisions (for example participation in the workforce)

Level-2: Mobility decisions (for example work, school locations)

Level-3: Daily activity decisions (for example work, school type)

This concept is the basis of the activity-based approach, which is useful for modelling rural travel behaviour in developing countries. The daily activity behaviour is constrained by access needs (time spent in acquiring basic needs) and forces individuals to adjust their mobility decisions (where to work), and ultimately results in migration to less isolated areas (Level-1 decisions).

3.6.2 The HATS study

The Household Activity Travel Simulator (HATS) was originally developed by the Transport Studies Unit (TSU) in the 1980s by Jones et al (1983). It studied travel in the context of household activity pattern, considering travel as a subset of the whole activity schedule. HATS was amongst the first models which provided insight into the activity-based approach. The main procedure is a three-stage process, Motivation-Activity-Travel: a way to understand the motivation of any activity undertaken, in order to model the travel for the activities.

The HATS is a social survey technique, based on exploratory design, which involves three survey instruments (Jones 1980):

- an activity-travel diary; to be filled by the respondents prior to the interview
- a gaming board (called the HATS board); to physically represent the time-space linkage of activities and travel, and to interactively demonstrate the effects of any changes of individual or activity attributes on the activity-travel patterns
- an interview / discussion on various options inducing changes in the activity-travel arrangements.

By conducting the survey at the household level (with all the family members present), the HATS technique also records the inter-personal linkages between household members and their constraints on travel. Implicitly, it is able to incorporate the socio-economic constraints acting upon individuals, for example, income, car availability, etc. HATS is useful in obtaining a quick response with a higher efficiency than a longer interview if an equal amount of information is needed (Jones 1978). As a simulation exercise, HATS is able to provide insights for development of analytical models of complex household-level behaviour.

The findings of the HATS survey (Jones 1978) are in line with Ben-Akiva's (1996) three-level decision hierarchy concept (see section 3.6.1 above). This means that people adapt to changes at higher levels after they fail to adapt any further changes in the lower levels, i.e. long term decisions would be the last to be altered. This leads to the definition of a threshold for change, i.e. what is the perceived level of benefit which will cause changes to any level of decisions. One of the salient features of the HATS technique is the ability to identify the flexibility of adjustment in the household activity-travel pattern. This is the gap to be addressed by the policy options.

The model combines the Spatio-temporal distribution of activities (including travel) with an interview process in order to seek the motivation behind various decisions. This provides inputs to an optimisation model which incorporates the following:

- Maximisation of utility for activity participation
- Trade-off between household members (household role allocation)
- Dynamics of adaptation
- Threshold effects (defined in terms of spatio-temporal constraints, which is the same concept as coupling constraints by Burns (1979))

In the context of this research the HATS model provided an insight in designing the social survey carried out from rural areas of Pakistan. Its direct applicability is questionable to the extent that the illiteracy of the respondents would not necessarily yield the desired results.

3.6.3 HATS Application

The Technique

The HATS interview is composed of two parts. In the first part, the individual represents his/her existing travel pattern on the HATS board. For a working individual, a simple HATS board for a typical working day might look like Figure 3.2.

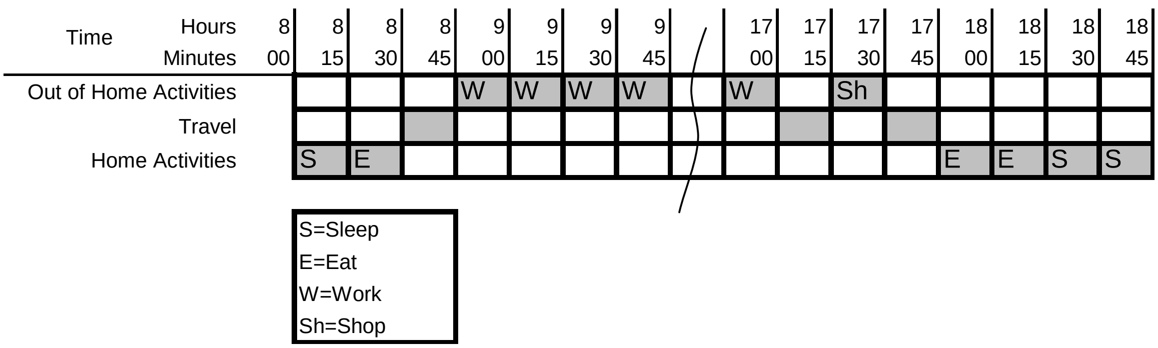


Figure 3.2 HATS Board for the hypothetical example

In this way the HATS board is able to identify:

a) types of activities in which the individual is involved in
b) activity and travel patterns in time-space co-ordinates

Ability to predict behaviour

The HATS technique is developed to be used in the form of a time series information collection instrument. It is done by inducing the intended policy in the individual’s activity-travel pattern. The individual is required to adjust his/her activities/travel and reach a point of equilibrium where no more adjustment is possible. This will provide the following information about the individual’s activities:

a) fixed activities (activities which can not be adjusted, for example work)
b) flexible activities (activities which have some margin of adjustment, for example sleep, eat, playing etc.)

This information is used to predict travel behaviour under similar policy interventions.

Extension to Rural Transportation Planning in developing countries

Addressing the time-space constraints upon individuals is the basis of the HATS technique. This provides a suitable starting point for studying rural accessibility problems in developing countries. Furthermore, HATS can also address household level analysis to be carried out to study activity behaviour. It therefore becomes an appropriate tool for studying rural travel demand. A research effort is needed in order to develop a simple household level travel analysis incorporating the following more explicitly:

- travel as a source of high burden on time
- the cultural and gender issues

3.6.4 The CARLA Model

Developed by the same team as HATS, the CARLA model is considered to be more comprehensive than HATS (Garling et al 1994). Its main advantage is its ability to simulate a large number of alternative schedules so as to deduce more definite results about actual behaviour.

CARLA includes a computerised algorithm (Knippenberg 1984), the input of which is the processed information from activity-based diaries. The algorithm performs two tasks:

a) calculates earliest start time (EST) and latest finish times (LFT) for each activity, and
b) provides possible rescheduling combinations using EST and LFT.

3.6.5 An activity-based choice model

Kitamura (1984) developed an activity-based choice model, in the context of discretionary activities. It closely follows the utilitarian approach to time allocation. The main theme was that a discretionary activity will be chosen only if it improves the total utility for the individual, and time allocation for the activity participation was done accordingly. The activity choice and time allocation were, therefore, considered in the same framework. The utility function was non-zero only for those activities to which the individual has allocated any time. Considering the discretionary activities, Kitamura argues that their marginal utility diminishes as the amount of time allocated increases. In this way there is an optimal time for each activity, as illustrated in Figure 3.3.

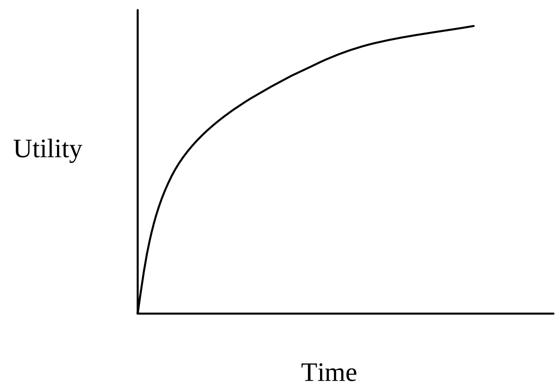


Figure 3.3 Activity duration and utility

The conceptual basis of this viewpoint was as follows:

a) although the activity duration is considered continuous on the time scale (Jones, et al 1983), the discretionary activities must be treated as discrete entities
b) this affects the perceived importance of time allocation and the calculation of utility of the activity.

3.6.6 Application of activity-based approach to rural travel studies

It may be concluded that the existing activity-based models consider time as a prime factor in developing the utility of activity schedules for individuals. They are suitable for policy studies aimed at relaxing time constraints for the individuals.

In view of the application to the RTP, it may be argued that the modelling approach must also consider the availability of the activities to the individuals. This is only possible through the concept of accessibility.

The mathematical form for the accessibility measure relevant to this situation must be able to:

a) define availability of activities to the individual by recognising both the spatial and temporal dimensions of the activities as well as the household level weighting;
b) incorporate time in two forms, as dis-utility of travel as well as the time for activity participation.

3.7 THE ACCESSIBILITY-ACTIVITY APPROACH

The opportunities, which require participation in the spatially distributed activities, define the travel pattern of an individual in a given period of time. The time-space prism, Figure 3.4, shows the activity-travel sequence of an individual starting and ending at times A & B, respectively. It can be seen that the activity-space is rearranged after the individual participates in an activity. Three 'successive' positions of the activity space, as a result of four activities, are generated in the figure. The travel between activities defines trips. Their sum defines the travel pattern of the individual in one day. In Figure 3.4, the inclined lines show the instantaneous positions of the space-time prism available to the individual after he decides to participate in any activity (the vertical lines). The arrows show trips at the maximum uniform velocity.

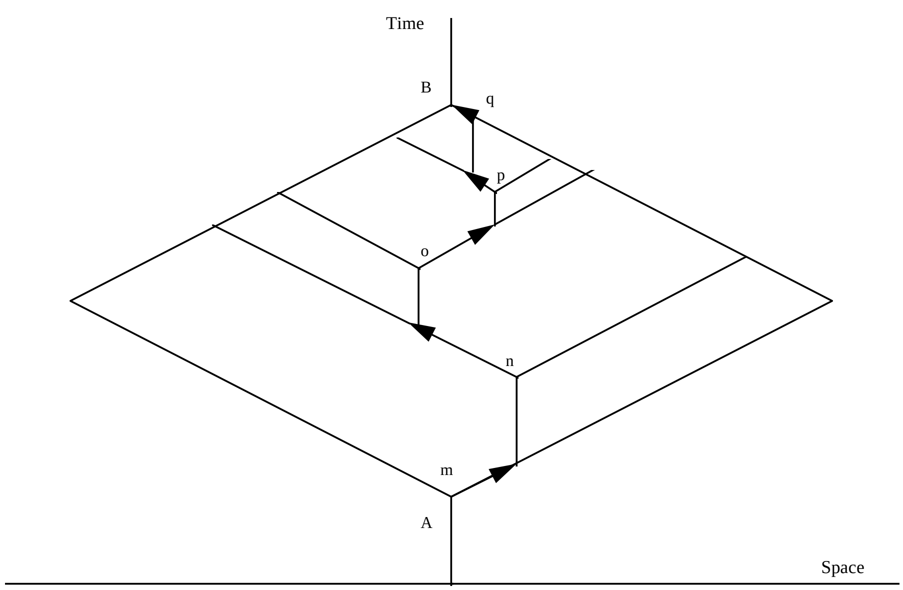


Figure 3.4 Time-Space Distribution of Activities and Travel

Integration of the two concepts, the accessibility of activities and the activity-behaviour, provides a better understanding of person movements for application in rural travel demand modelling in developing countries. This is referred to as the accessibility-activity approach and is developed further in the present research to model the rural travel demand.

3.7.1 Integrated Rural Accessibility Planning

The Integrated Rural Accessibility Planning (IRAP) methodology was initially developed for Tanzania and Malawi (initially called Integrated Rural Transport Planning, IRTP). The IRAP is a local-level planning tool aimed to optimise the infrastructure investment on the basis of the most urgent needs of the local community (Howe 1996). This way IRAP is based on the accessibility-activity approach as described earlier, i.e. it takes into account the access needs of households and the activities fulfilling these needs.

In its basic sense IRAP is able to address household accessibility problems. It provides input to the rural accessibility planning process in the form of rating of needs on the basis of household requirements for access as well as the rating of infrastructure on the basis of its ability to provide access. These inputs are used to formulate strategies to reduce access problems in the most optimum budget requirements.

The main feature that IRAP possesses is its flexibility to solve traditionally considered transport-sector problems by either transport or non-transport means. For example, if water collection is a severe access need, the problem can be solved either by provision of better footpaths or roads leading to the facility, or by bringing the water collection points closer to the users. In this way, the IRAP is able to incorporate the mobility and siting of service into the same framework.

The salient features of IRAP framework are (Howe 1996):

- it is needs-based in the sense that it covers all aspects of household needs

- it is comprehensive in the sense of its ability to suggest solutions to the access problems, not just transport problems
- it is sustainable because it is intended to be managed by local-level participation.

3.7.2 The IRAP methodology

The IRAP methodology is based on household needs for access (Edmonds 1998, Dixon-Fyle 1998). The methodology starts from household data collection. The main aim of the first stage of IRAP (the data collection) is to identify household needs for access to services like water and firewood collection, healthcare, education, etc. Various indicators are used to define the access needs for these services. The time or distance to the facilities offering these services is the main item in the data collection. The IRAP methodology provides two main outputs, the accessibility indicators and the accessibility profile, as explained below.

Accessibility Indicators

The first output of the household data collection exercise within the IRAP framework is the development of Accessibility Indicators (AI) for each of the access needs. In mathematical terms, *AI* is given as:

$$AI = \textit{number of households} \times \textit{time (or distance) to the facility} \qquad (3.7)$$

In the above equation the number of households is representative of the population affected. The time (or distance) to the facility is representative of the burden to be borne by the population. The higher the value of *AI* the least will be the accessibility of a particular facility to a given population. In this way the *AI* defines, in empirical terms, the inaccessibility of the activities. Parameters other than number of households can also be used in the AI. Table 3.2 explains the range and importance of the parameters defining *AI*. It contains the definition of AI at various levels of rural accessibility planning.

Table 3.2 Examples of Accessibility Indicators

	VILLAGE	DISTRICT	NATIONAL
Water	Number of households × Ave. collection time in the dry season	%age of households with no direct[1] access to a water supply × Average collection time in dry season	%age of households with no direct access to a water supply × Average collection time in the dry season
Health	Number of households × time to a health centre or clinic	%age of households in villages with no health centre × Average time to a health centre[2]	%age of households living in villages with no health centre × Average time to a health centre[2]
Education	Number of primary school age children × time taken to get to the school	%age of households with no primary school in their village × Pupil/classroom ratio (or Pupil/teacher ratio)	%age of households with no primary school in their village × Pupil/classroom ratio (or Pupil/teacher ratio)

[1]Direct access means that water is available in the immediate vicinity of the household

[2]Other health indicators would be: regular visits by a Midwife and Physician

Source: Edmonds 1998

From Table 3.2 it is clear that the definition of AI is based on two factors:

a) the effected population; for example households or number of school age children
b) the burden; for example time taken to the facility or the distance to be covered

In this way the AI defines two possible ways of the solution to the access problem:

i. by reducing the size of the effected population; this can be done by improving the capacity of the facilities (increasing number of classes, etc.)
ii. by reducing the distance or time for access; this can be done by improving the infrastructure (provision of roads) or enhancing supply of transport vehicles (IMT, NMT, etc.)

Accessibility Profiles

The accessibility indicators *AI* are used to develop accessibility profiles of the areas covered in the IRAP study. These are the maps of the whole area under study redrawn to highlight the access problem of locations (for example villages) with reference to the burden they face. The accessibility profiles act as the planning tool in guiding the decision-makers regarding the most optimum use of the resources.

3.7.3 Utilisation of IRAP concepts

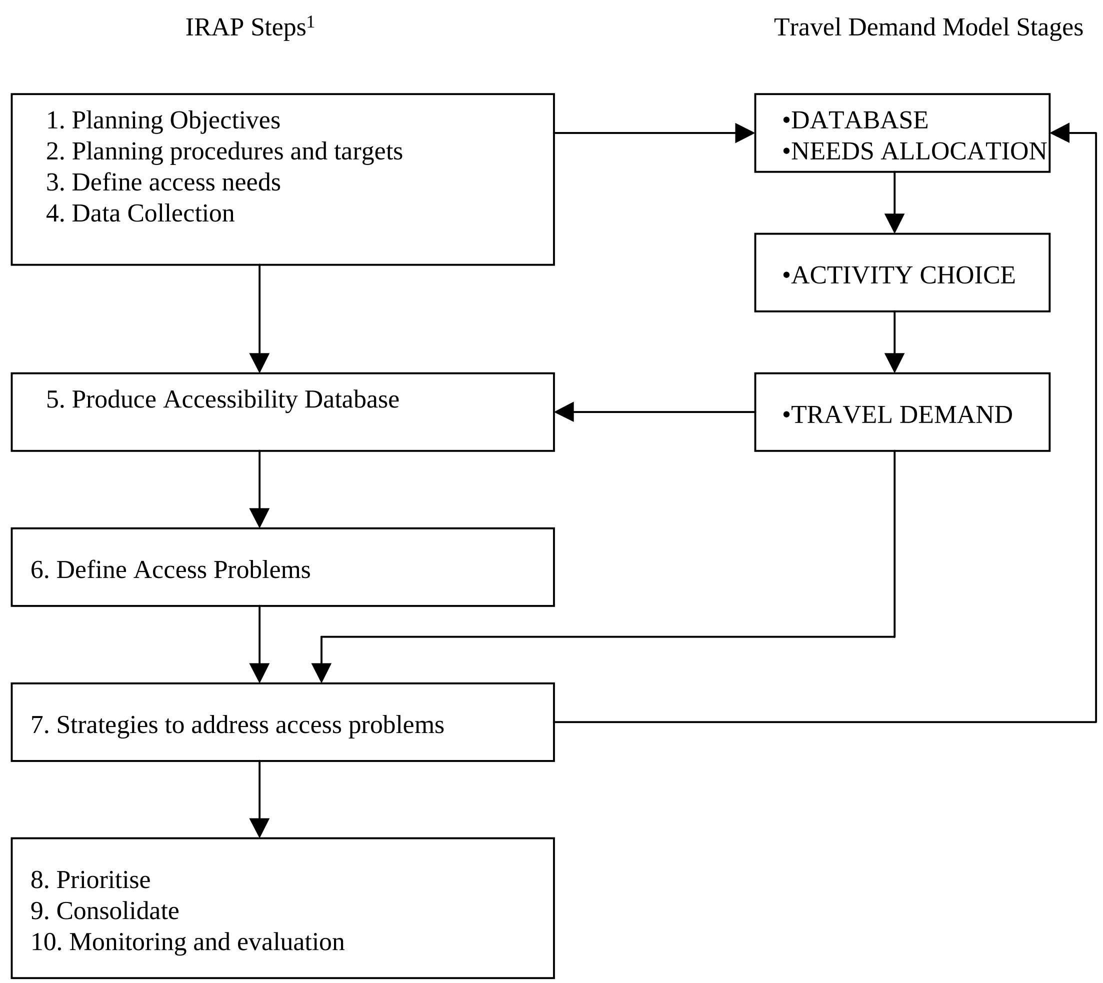
The IRAP model as described above is a local level-planning tool. It's capability to provide data on household needs and subsequent strategy development can be enhanced by linking it to the travel demand modelling framework developed in the present study. A brief structure of this procedure is explored in Figure 3.5. This would result in better and up-to-date analysis of accessibility situations.

IRAP is a planning tool but can be enhanced and utilised in the development of an analytical travel demand framework in the following ways:

1. The household need identification concept recognises the derived nature of travel. This can be further improved to model household travel behaviour using access needs of households, an essential data input from the IRAP procedure.
2. The IRAP provides the definition of accessibility on the basis of household and activity attributes. This concept misses out the actual decision-maker, i.e. the individual. There is a need to add the individual in the formulation of accessibility problems. This will enhance the behavioural basis of the IRAP framework.

The research reported in this thesis is aimed in this direction. It brings household needs, their travel decisions and the activity attributes within the same framework, based on the accessibility-activity approach.

The framework proposed in Figure 3.5 shows that the accessibility database can provide inputs to the travel demand model. The travel demand model predicts activity choice and the resulting travel demand, which may be used as inputs at the IRAP stage concerned with strategies to address access problems.



[1]. Source: Howe (1996)

Figure 3.5 Integration of IRAP within a travel demand modelling system

3.8 CASE STUDY: ANALYSIS OF TRIP-BASED DATA

This section deals with the analysis of household data collected from a selected rural location in Pakistan during the course of this research. The case study was designed to assess the ability of the trip-based approach to address the household decision-making process. The main objective was to be able to use the outcome of the analysis to guide the direction of travel demand analysis for this research, and to use the resulting data in the development of rural travel demand models.

Specific objectives of the case study included assessing the ability of the trip-based approach:

a) to identify factors governing household travel demand, with reference to accessibility of activities
b) to address household needs formation and the resulting travel to fulfil these needs
c) to incorporate constraints on individual time budget
d) to develop travel demand models incorporating various factors affecting household travel for access

3.8.1 Study area

The study area was situated in Balochistan, the south-western province of Pakistan (see map of Pakistan; Figure A-1, Appendix A). The area selected was Khuzdar, located in the central part of the province (see location maps of Khuzdar, in Figures A-4, and A-5 of Appendix A). The basis of the selection of Khuzdar was that it represents an area where the overall road access is poor due to dispersed population patterns (a feature of the province of Balochistan).

3.8.2 Survey design

The experiment was designed to collect household level data on the following parameters:

- Household parameters: income, size (number of persons), vehicle ownership
- Trip parameters: number, duration, length (distance), purpose, mode

3.8.3 Data analysis

Data was collected at five locations within the area. These locations were selected as they exhibit variation in population settlements. The data for all these locations combined together gave a sample size of 139 households. Table B-1 of Appendix B contains these data. The data were analysed in order to identify the factors affecting household travel demand, and their implications on the overall activity participation of the household. Consolidated data used in the analysis are presented in Appendix-B.

The variables investigated from the household data were:

i) Income: household income (in Pakistan Rupees denoted as Rs.)

ii) Household size: HH Size

iii) Purpose: trip purpose

The trip purpose was grouped into five categories as:

Purpose code: 1	Work, Office
Purpose code: 2	Shop, Farm
Purpose code: 3	Taking children to and from school
Purpose code: 4	Market
Purpose code: 5	Driving

iv) Mode: mode used for the trip

The travel mode was grouped into three categories as:

Mode code: 1	Car, Pickup, Jeep, Van
Mode code: 2	Motorcycle
Mode code: 3	Truck/Taxi

In the listing given above, the trip purposes Work and Office have a fixed duration involvement. Work includes indoor or outdoor working as labour, while Office includes working as an office worker. The trip purpose Shop defines trips to a shop used as the business for the shopkeeper. This trip purpose is therefore the travel to work in the shop either as an employee or as the owner. The trip purpose Farm depicts a trip to attend the farm as a worker or the owner. These two trip purposes represent similar kinds of activities and were therefore combined together into a single category, and assigned Purpose code-2. The trip purpose Driving considered driving as the main source of income.

In the travel mode listing, Car, Pickup, Jeep and Van were grouped together as they represented formal motorised modes. These modes were used for a range of distances (see data in Appendix-B). Motorcycle, on the other hand not only represents a highly common motorised mode of transport in Pakistan (not so common in developed countries), but also it is different from mode code-1 due to its inability to be used beyond certain distances. Motorcycle is used for low to moderate distances (see also section 3.8.4). Travel mode Truck/Taxi represents the vehicles used as travel mode by the owners, presumably driving their own vehicles for earning purposes. It must be noted that the travel mode for passengers using a Taxi would be recorded as Car.

Descriptive statistics

Table 3.3 summarises the statistical parameters for household data. Figure 3.6 and Figure 3.7 show the frequency distribution of these household variables compared with a normal curve. Discussion of the characteristics follows.

Table 3.3 Summary statistics of household data

STATISTICS		**HOUSEHOLD CHARACTERISTICS**	
		Income (Rs.)	Household Size
Mean		8080	11
Std. Deviation		6300	6
Minimum		2500	3
Maximum		40000	30
Percentiles	25	4000	7
	50	6500	10
	75	10000	14

Income

The household income showed a skewed normal distribution (Figure 3.6). The range is between Rs. 2,500 to Rs. 40,000, with a mean of about Rs. 8,000. The skew towards lower values of income can be considered as a logical trend in the income distribution over the population (being a rural area of Pakistan, where the majority of the population lives below the poverty line). The 50th percentile of Rs. 6500 implies that the population has average living conditions.

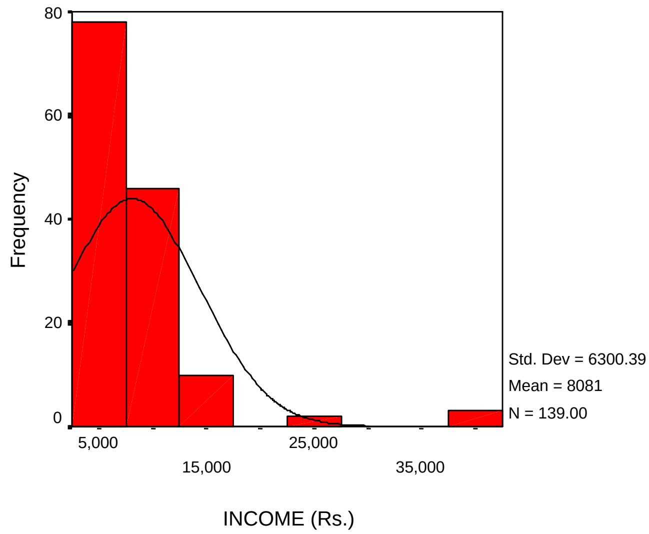


Figure 3.6 Frequency distribution of income

Household size

The household size also showed a skewed normal distribution with a mean of 11 (Figure 3.7). The household size ranges from 3 to 30 persons.

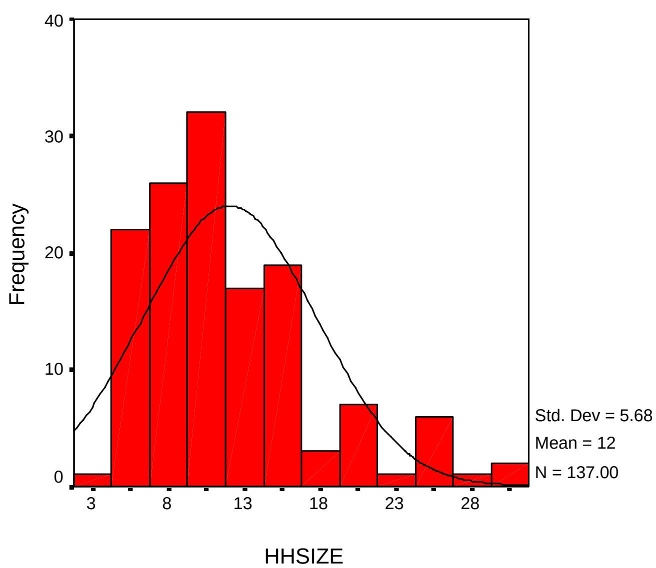


Figure 3.7 Frequency distribution of household size

The reason for the high mean in the household size is the extended family system prevalent in these parts of Pakistan. This point was also apparent in the activity-based household survey carried out later from the same area (details presented in Chapter 6).

3.8.4 Travel demand analysis

Using the data on daily trip making, it was possible to analyse the factors affecting household travel demand. Table 3.4 presents the distribution of household trips by purpose. Work/Office was found to be dominant in the trip purposes, with Market the second most important category. Each of the remaining three purposes covered around 5% of the total trips reported. The average overall trip distance was found to be 10 km. The trip purpose 'Driving' dominated all trip purposes for the obvious reason that the sole trip purpose of the individuals was driving, or work as a driver. The average distance to Work/Office was around the average distance for all trip purposes. The distance for the trip purpose-3 (Taking children to and from school) was the least with the least average time reported. It means that the schools are available in the close vicinity of the population.

Table 3.4 Distribution of household trips by purpose

PURPOSE		%COUNT	AVERAGE DISTANCE (km)	AVERAGE TRAVEL TIME (hrs)
CODE	DESCRIPTION			
1	WORK/OFFICE	57%	8.8	1.9
2	SHOP/FARM	6%	13.3	2.7
3	TAKING CHILDREN TO AND FROM SCHOOL	4%	5.0	1.6
4	MARKET	28%	6.1	2.5
5	DRIVING	5%	45.0	12.0
	ALL PURPOSES	100%	10.0	2.6

The above analysis revealed that only the trips outside the area were reported. Work being the most important reason for a person to go outside the village, therefore dominated the trip purpose category. This analysis therefore shows a basic characteristic of the trip-based approach: that the individuals consider the most important task/activity carried out during the trip, and report it as the trip purpose. In this way, the trip purpose like visiting health services is not accounted for, as it does not enter the daily travel behaviour of the households.

The distribution of population by travel mode is summarised in Table 3.5. The Motorcycle was the dominant travel mode. This indicates that the majority of the population has moderate or low income levels because Motorcycles are commonly used in these income classes. Motorcycles are used for trips with distances and travel time below average.

Table 3.5 Distribution of household trips by mode

TRAVEL MODE		%COUNT	AVERAGE DISTANCE (km)	AVERAGE TRAVEL TIME (hrs)
CODE	DESCRIPTION			
1	CAR / JEEP	20%	7.1	1.7
1	PICKUP / VAN	16%	16.2	3.1
2	MOTOR CYCLE	59%	6.7	2.2
3	TRUCK / TRACTOR	5%	26.9	10.9
	ALL MODES	100%	10.0	2.6

By dividing the mode Code-1 into two parts (i.e. Car/Jeep and Pickup/Van), it was possible to study the proportion of the population using a pickup/van. These vehicles act as low capacity buses and are commonly used on a commercial basis. Households that do not own a vehicle mostly use the pickup/van. Considering the average distance as well as the average duration of trips by pickup/van, it is clear that people used this mode when travelling long distances, and for longer than the average travel times. This means that households not owning transport vehicles either walked shorter distances or their needs are suppressed. This issue cannot be addressed by a trip-based approach.

3.8.5 Modelling travel demand

Household trips models

Linear regression models were developed to predict number of household trips. For this purpose, the trips reported in the data were assumed to be journeys. Therefore, for single journey the number of trips was taken as 2. All trips were assumed to be home-based.

In order to analyse the contribution of the trip purpose and the mode of travel in travel predictions, multiple regression models were developed on the basis of individual classes of the two variables. In the household trips models, household income, household size, travel distance and trip duration were taken as the explanatory variables. Total household trips were used as the dependent variable.

The model form used for number of trips classified on the basis of trip purpose was:

$$T_p = \beta_o + \beta_1 I + \beta_2 H + \beta_3 x + \beta_4 t \qquad (3.8)$$

where:

T_p = number of household trips per day by trip purpose p

I = household income (Rs.)

H = household size

x = travel distance (km)

t = travel time (hours)

β_0 to β_4 are regression constants

The model form used for number of trips classified on the basis of travel mode was:

$$T_m = \beta_o + \beta_1 I + \beta_2 H + \beta_3 x + \beta_4 t \qquad (3.9)$$

where:

T_m = number of household trips per day by travel mode m

other variables are as in equation (3.8).

Model parameters were estimated for equation (3.8) and equation (3.9). Table 3.6 summarises the models selected on the basis of statistical parameters R^2, F and t. The coefficient of determination (R^2) gives the proportion of the total variation explained jointly by all the variables included in the model (Gujarati 1995). The F-statistic provides the significance level for the model as a whole. The t-statistic indicates the statistical significance of each coefficient in the linear regression model. Table 3.6 reports the F-statistic for each model along with its significance level in terms of p-value, which is known as exact level of significance of the F-statistic, given as a probability value (Gujarati 1995). For all the models reported in Table 3.6 the significance levels of the t-statistic, of all the coefficients reported, have been above 90% ($p \leq 0.100$). This was possible using the backward elimination procedure for estimation of linear regression models in statistical analysis software SPSS. This procedure eliminates all non-significant coefficients such that the final model contains statistically significant coefficients only.

Table 3.6 Models to predict number of household trips

MODEL FORMS	PURPOSE/MODE CODES[1]	PARAMETER ESTIMATES[2]					MODEL STATISTICS		
		Constant	Income	HHSize	Distance	Time	R^2	*F*	*Sig.Level* [3]
MODELS BASED ON TRIP PURPOSE	Purpose Code:1	-	5.35×10^{-5}	0.155	0.019	-	0.806	102.287	0.000
	Purpose Code:2	-	-	0.165	-	-	0.840	36.864	0.001
	Purpose Code:3	-	-	-	0.535	-	0.803	16.258	0.016
	Purpose Code:4	-	7.11×10^{-5}	0.138	-	-	0.738	56.197	0.000
	Purpose Code:5	-	2.62×10^{-4}	-	-	-	0.909	19.993	0.047
MODELS BASED ON TRAVEL MODE	Mode Code: 1	-	-	0.166	-	0.215	0.793	89.975	0.000
	Mode Code: 2	-	1.96×10^{-4}	0.106	-	-0.026	0.818	115.452	0.000
	Mode Code: 3	-	1.44×10^{-4}	-	0.021	-	0.951	29.283	0.011

Notes:

[1]Purpose Codes: 1=Work/Office; 2=Shop/Farm; 3=Takingchildren to and from school; 4=Market; 5=Driving.
Mode Codes: 1=Car/Pickup/Jeep/Van; 2=Motorcycle; 3=Truck/Taxi.

[2]Parameter estimates are reported for the parameter coefficients found to be at or above 90% significance level.

[3]p-value for F-statistic; a zero denotes very small value.

On the overall basis, Income and Household size were found to be important variables explaining the trip making at the household level. Travel time was not found significant in any of the models based on trip purpose. This suggests that travel duration does not effect trips for any of the trip purposes considered. Models for the travel modes (mode codes 1 and 2), on the other hand, include travel time as a significant variable. This indicates that the use of a transport mode would be dependent on travel time and in turn affects the trips made by the household.

All the eight models for household trips (five purpose codes and three mode codes) have zero intercept value. This indicates that in each of these models certain combination of values may result in no trips made by the household. A simple case to understand is Purpose code: 3 (Taking children to and from school). The distance was the only explanatory variable in household trips by this purpose code. For distances approaching zero, therefore, the number of trips would approach to zero. This may be considered logical in trip-based approach as only trips outside the area get reported. This is an important limitation of trip based approach, that it does not account for the time spend in out-of-home activities.

Trip duration models

The mathematical form used for the linear regression model for predicting trip duration on the basis of trip purpose was:

$$t_p = \beta_o + \beta_1 I + \beta_2 H + \beta_3 x \qquad (3.10)$$

where

t_p = trip duration for trip purpose p

other variables are as defined in equation (3.8).

The model form used for predicting trip duration on the basis of travel mode was:

$$t_m = \beta_o + \beta_1 I + \beta_2 H + \beta_3 x \qquad (3.11)$$

where

t_m = trip duration by travel mode m

other variables are as defined in equation (3.8).

Table 3.7 summarises the trip duration models which were found to be statistically significant on the basis of the F and t statistics (explained earlier).

Table 3.7 Models to predict trip duration

MODEL FORMS	PURPOSE/MODE CODES[1]	PARAMETER ESTIMATES[2]				MODEL STATISTICS		
		Constant	Income	HHSize	Distance	R^2	F	*Sig.Level* [3]
MODELS BASED ON TRIP PURPOSE	Purpose Code:1	-	-	0.077	0.113	0.476	34.024	0.000
	Purpose Code:2	-	2.34×10^{-4}	-	-	0.683	15.070	0.006
	Purpose Code:3	2.735	-1.75×10^{-4}	-	-	0.667	6.000	0.092
	Purpose Code:4	1.308	-	-	0.176	0.749	119.523	0.000
	Purpose Code:5	-	-	-	0.345	0.955	41.993	0.023
MODELS BASED ON TRAVEL MODE	Mode Code: 1	-	-	-	0.165	0.723	127.487	0.000
	Mode Code: 2	-	-	0.087	0.173	0.595	57.305	0.000
	Mode Code: 3	-	-	-	0.344	0.943	66.696	0.001

Notes:

[1]Purpose Codes: 1=Work/Office; 2=Shop/Farm; 3=Takingchildren to and from school; 4=Market; 5=Driving.
Mode Codes: 1=Car/Pickup/Jeep/Van; 2=Motorcycle; 3=Truck/Taxi.

[2]Parameter estimates are reported for the parameter coefficients found to be at or above 90% significance level.

[3]p-value for F-statistic; a zero denotes very small value.

On the overall basis, travel distance was found to be a significant factor affecting trip duration. Considering trip purposes, except trip purpose codes 2 and 3, the trip duration was proportional to the travel distance. The distance therefore profoundly affected the trip duration. The factor affecting trip duration by purpose codes 2 (Shop/Farm) was household income. This suggests that higher income households would spend more time in travel to their shops/farms. Income was also the factor affecting trip duration for trip purpose 3 (Taking children to and from school). The negative sign for this coefficient suggests that higher income households would spend lesser time in travel for this purpose. This means that higher income households have access to better transport modes (for example Cars) and therefore spend lesser time in taking children to and from school.

The model for trip duration by purpose code-1 (Work/Office) explained less than 50% of the variation in the data. This indicates that trip duration for Work/Office did not follow a linear trend and the linear regression model of equation (3.10) was unable to address all the variation in the data. Similar argument may be extended to trip duration model for model code 2 (Motorcycle) which explained less than 60% of the variation in the data.

Trip duration for either of the three mode classes is proportional to the distance of travel. In the case of mode code 2 (Motorcycle) a joint dependency on household size suggests that larger household size increases the travel duration for these households. This indicates that as the household size increases, there is increased demand on the time budget of the individual (due to increased travel duration). This point, however, was unable to be addressed without a detailed analysis of activity duration as well as daily time utilisation.

3.8.6 Conclusions of the case study

The above analysis of the trip-based data highlighted the following points related to the trip-based approach:

- Only trips outside the area are reported
- Trips to reach non-frequent activities like visiting health centres may not get proper reporting as they do not constitute daily trips
- The analysis of other factors like household interaction is not possible

In the light of the objectives set out for the case study it is concluded that:

a) the trip-based approach identified factors related to household travel for activities (for example, household income, household size, etc.); this approach does not address factors related to activities (for example alternative locations of activities, etc.)

b) the trip-based approach identified factors affecting travel demand to fulfil household needs (for example Work, Market, etc.); this approach does not incorporate travel to fulfil the household needs which follow a non-daily pattern (for example travel to activities like healthcare)

c) the trip-based approach identified the time constraints on individuals with reference to travel to the activities; this approach does not incorporate individual's daily time budget constraints as it does not include activity duration, etc.

d) the linear regression models based on trip-based data included explanatory variables at the household level (for example household size, vehicle ownership, etc.); the trip-based approach does not incorporate individual level constraints affecting travel demand (for example role allocation, etc.), required to completely explain household travel for access.

For further analysis, an activity-based approach must be adopted which should study both activity participation and travel within the same framework.

3.9 SUMMARY

The conceptual development of a rural travel demand model in developing countries must seek to integrate mobility and accessibility in the same framework. In the accessibility based approach, transport is considered as a component of accessibility of activities. The activities can be mapped in time and space and the opportunities available to the individual can be deduced. This approach lacks the behavioural sense in the way that the participation in an activity cannot be completely determined solely on the basis of the activity being accessible. The activity based approach is able to deduce an individual's participation in activities. This defines the activity pattern of the individual. The travel pattern of an individual is considered as the subset of his overall activity pattern. This approach, however, in its basic sense, does not realise any space-time constraints upon individuals, i.e. the availability of these activities to the individual.

The accessibility-activity based approach is able to integrate the concepts of the above two approaches whereby the activity participation of an individual is a function of mapping the activities in time and space. The accessibility-activity approach recognises travel as a derived demand, a demand to access spatially distributed activities, within the time-space constraints of the individual. The rural travel demand model developed in the present research is based on this approach.

Analysis of trip-based data from a selected rural location in Pakistan was presented as a case study. It was concluded that while the trip-based approach identified various factors related to household travel to access activities fulfilling household needs (for example

Work, Market, etc.), it was unable to provide a complete insight into the factors affecting household travel in rural areas of developing countries. This argument calls for development of a framework that integrates travel analysis within activity analysis.

CHAPTER 4

TRAVEL DEMAND MODELLING FRAMEWORK

4.1 INTRODUCTION

Previous chapters reviewed research on rural transportation planning in developing countries. The literature in general stressed that rural transportation planning concepts must be formulated on the basis of household needs and targeted towards providing the means for fulfilling these needs. Rural travel, therefore, must be understood as the means to access the activities required to fulfil household needs.

This research recognises that household needs are the determinant of rural travel demand, and the subsequent travel to participate in activities is primarily to fulfil these needs. The research attempts to model rural travel demand within a conceptual framework, which integrates the accessibility of activities and the participation in the activities by individuals in order to derive the demand for travel.

This chapter describes the rural travel demand-modelling framework. It explains the underlying concepts forming the basis of the accessibility-activity approach taken in this research to model rural travel behaviour. Various stages of the modelling framework are described together with their operational development.

This chapter further describes the procedures required to carry out each stage of the framework and explains the parameters needed at each of the stages. An empirical analysis of the model parameters is also included to test the behavioural extent of the framework.

The conceptual framework forms the basis for the development of the travel demand modelling system. The outlook of the whole system is presented with the primary tasks and the input-process-output of each component. This is followed by a description of detailed processes and algorithms used in various components of the system.

Figure 4.1 explains the flow of the tasks carried out in the development of travel demand model as explained in this chapter.

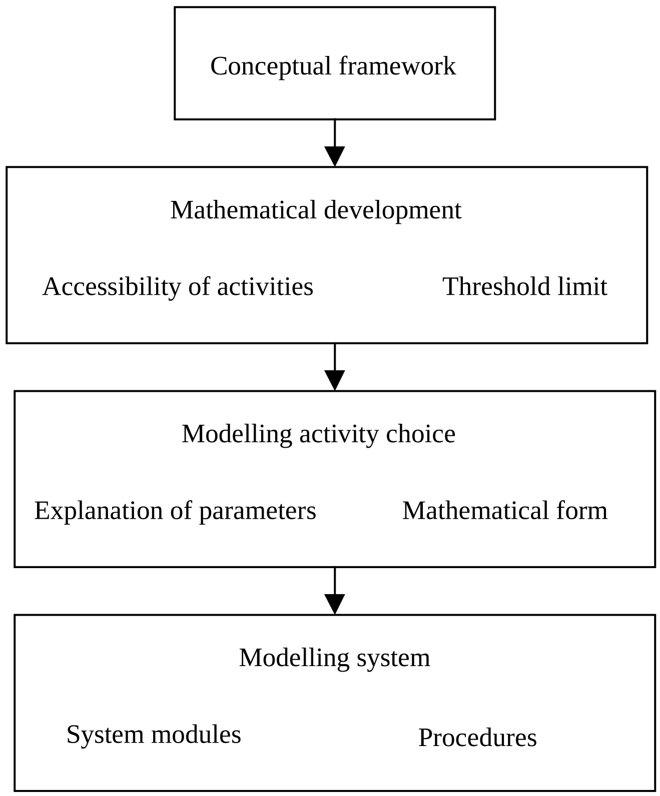


Figure 4.1 Model development stages

4.2 UNDERLYING CONCEPT

People interact in time and space through the activities they perform. Travel is needed to reach a spatially separated activity. The overall activity participation behaviour of individuals during a given time period is indicative of their travel patterns. This concept is used in this research to develop a travel demand modelling system, by answering the following questions that are the basis of the sequential transport planning methodology:

- What is the purpose and frequency of trips; i.e. *trip end estimation*
- What are the origin and destination of trips (in time and space); i.e. *trip distribution*
- What is the mode of travel; i.e. *modal split.*

4.2.1 Household travel for Access

The main focus of this research is the identification of rural travel in the context of household access needs. This is achieved in the following way:

a) Considering the household as the unit of analysis

In the current research, travel demand analysis starts at household level. This defines household level needs and the interaction between individuals as household members. It results in identifying the responsibilities of, and subsequent activities to be performed by, each member of the household. In this way, the modelling framework is able to address cultural effects and the gender distribution of activities; two significant issues in rural activity / travel demand analysis.

b) Considering the individual as the decision maker

The activities fulfilling household needs have to be ultimately carried out by the individuals, collectively representing the household. The individual is, therefore, the decision-maker in the process of activity choice and participation. The demand for travel is therefore derived from the individual decisions for activity participation.

c) Types of access needs and activities

Household needs, and the subsequent activities required to meet these needs, are divided into three types, namely; Primary, Secondary and Tertiary. Table 4.1 defines the activity types on the basis of the household needs they fulfil.

Table 4.1 Definition of activity types

ACTIVITY TYPES	NEEDS FULFILLED	ACTIVITIES
Primary	subsistence needs	Water / Firewood collection, Healthcare
Secondary	economic needs	Work, Market, Education
Tertiary	Rest and recreation	Family/kinship, Leisure

In a given accessibility situation each type of need imposes a particular set of constraints upon individuals and the activities fulfilling the needs. For instance, the pattern of participation in activity work would be found different from that of going to market for shopping.

4.2.2 The decision process

4.2.2.1 Basic assumptions

In order to formulate the rural travel demand-modelling framework, the following assumptions are made:

1. Individuals are members of a household.
2. Individuals being household members are responsible for performing activities fulfilling household-level needs
3. There is a bound on the maximum speed an individual can travel
4. All travel and activity participation are sequential on a time scale; this means that the individual cannot be engaged in two activity-locations at one point in time, (please refer to Figure 3.4, chapter 3 for details). An activity-location is a location offering an activity.
5. The home is always the absolute origin and the final destination.

4.2.2.2 Decision Hierarchy

The activity participation decision is considered in this research to be composed of a two-level decision hierarchy, as illustrated in Figure 4.2. It is stressed here that, as shown in the figure, the individual is the decision-maker, and reference is made to a particular type of activity.

Accessibility of the Activity

The first level of the individual decision hierarchy is the accessibility of the activity. This is composed of the description of time-space constraints acting upon the individual in relation to the activity under consideration. The result is the set of all the activities within the time-space prism (TSP) of the individual. This set of activities becomes the choice set for the next stage, i.e. activity participation.

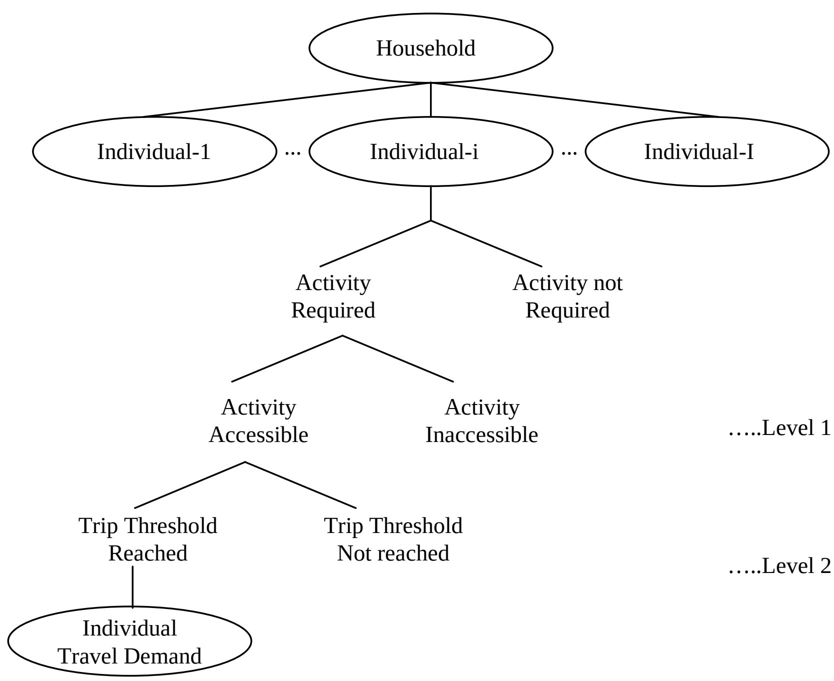


Figure 4.2 Individual level decision hierarchy used for modelling travel demand

Activity Participation

The second level of the decision hierarchy is the decision whether or not to participate in the activity. This decision is determined in this research by the threshold level for the activity. According to this concept, the household would accumulate needs over time and would travel for the activity fulfilling the need only when the time threshold for the activity would be reached. This threshold level (TL) is attached to the generalised cost the household perceives for the activity. The concepts and mathematical development of TL is described later in this chapter. In the context of daily activities, the threshold level has been implicitly considered in the probabilistic choice process.

4.3 CONCEPTUAL FRAMEWORK

The conceptual framework for modelling rural travel demand tends to integrate household needs and individual activity decision-making. It has three stages:

1. Needs allocation
2. Accessibility criteria
3. Activity participation

Figure 4.3 illustrates the relationship between these stages. A description of these stages is given in the proceeding paragraphs.

4.3.1 Needs allocation

The village and household type formulate household level needs. For example, a village with no direct gas supply might have firewood collection as a household need for most households in the area. These needs are fulfilled by activities that have to be performed by household individuals. Household roles play the main part in allocation of these needs to the individuals. The needs allocation stage recognises the importance of household access needs. It considers the activities required to fulfil these needs which are then allocated to each individual of the household according to their role within the household. Cultural and gender considerations are addressed at this stage.

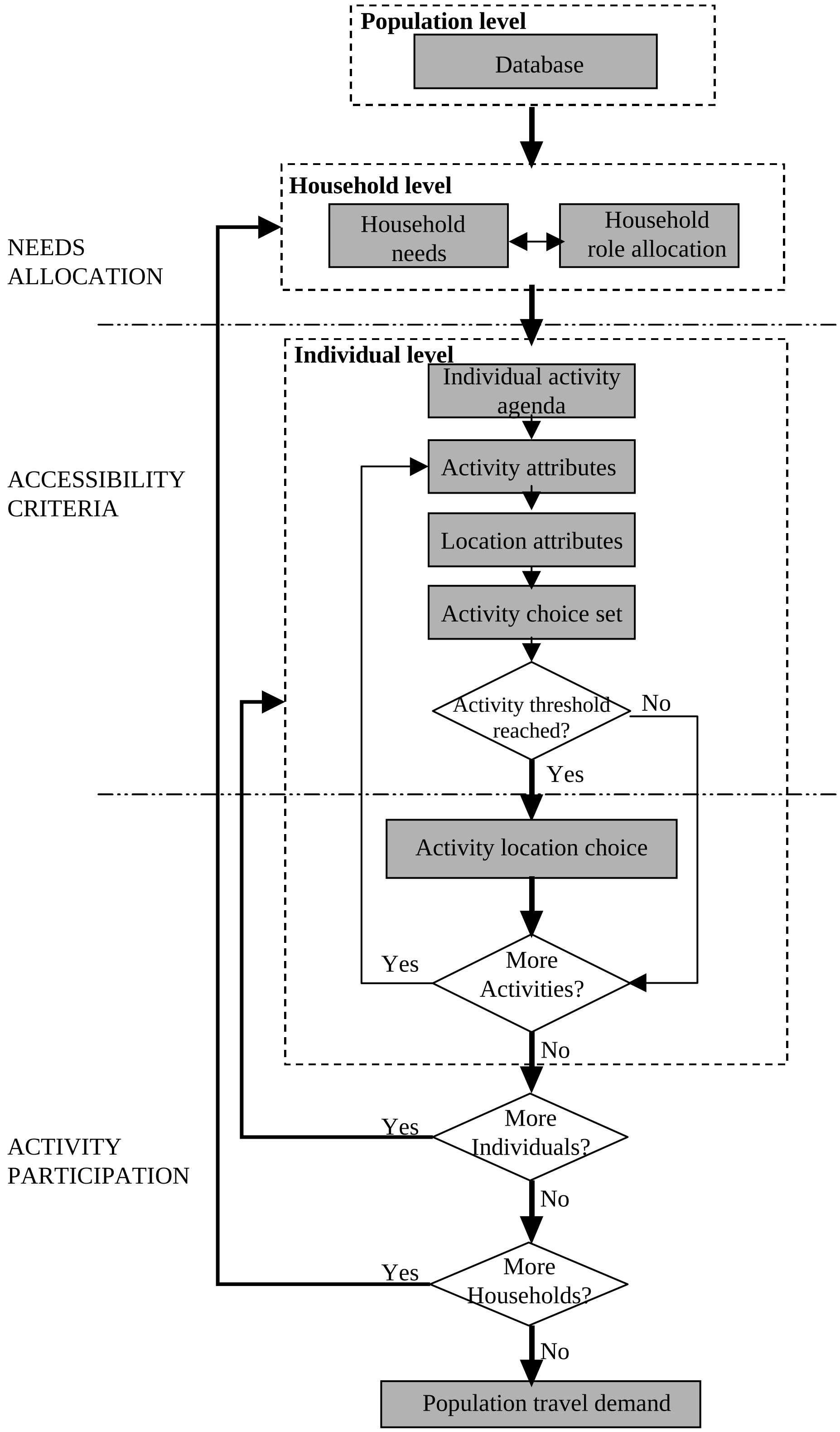


Figure 4.3 Rural travel demand modelling framework

4.3.2 Accessibility criteria

As a result of need allocation, each member of the household possesses an activity agenda. Each activity has an accessibility benefit depending upon the attributes of the individual and the activity. Whether or not an activity is an opportunity for an individual is decided on the basis of various constraints acting upon the individual and the activity. As previously defined, an opportunity is an activity that falls within the bounds of the constraints imposed by the three components of accessibility, i.e. the transportation, temporal, and spatial components.

This second stage of the framework determines the availability of activities to each individual, based on the accessibility criteria. This means that each activity, along with the locations providing the activity, is tested on the basis of accessibility criteria to determine whether or not it lies within the time-space prism of the individual and whether or not it requires travel. The outcome of this stage is a set of activities available to the individual, i.e. his set of ‘opportunities’. This set is termed the 'activity choice set' as it contains all the activities the individual desires to participate.

4.3.3 Activity participation

An individual on a daily basis weights all opportunities. The opportunities obtained in the previous stage fulfil two conditions:

- a) they are within the time-space constraints of the individual
- b) they require travel

Each activity in which the individual decides to participate determines the individual travel demand. Each activity in the choice set is tested against its threshold level. This was illustrated in Figure 4.2. If the threshold were reached, the individual would participate in the activity, giving rise to their travel demand. The outcome of this stage is the individual travel demand for different types of activities (trip ends), at different locations (trip distribution), and using different modes (modal split).

4.3.4 Feed-Back

As illustrated in Figure 4.3, stages 2 and 3 are repeated for all the individuals of the household and then for all sampled households. After completion of all households within the area, the total travel demand for the population sample is estimated by the aggregation of the individual travel demand.

4.4 MODELLING APPROACH

The parameters involved at each stage of the travel demand-modelling framework are defined in Table 4.2. The table explains the relationship between stages in the modelling framework and the mathematical modelling process.

The mathematical modelling process first recognises the household access needs through the household type (*H*) using their Life Cycle Stage (LCS). The household interaction transforms these needs into the activities performed by each individual type (*I*) in the household. Each of the individual types, therefore, requires a set of activities to be performed, denoted by $(j_n)_I^H$; n=1,2,3 (types of activities). The activities requiring travel are assessed on the basis of the attributes of the activity as well as of the locations. This is done through the accessibility criteria. The accessibility benefits model $(BM_i)_j^k$ assesses all the activities *j* at location *k*, relevant to the individual *i*. The result of accessibility criteria is the formulation of the choice set of the individual denoted as C_i.

From this choice set, the individual will choose an activity-location if the time threshold for the activity is reached. This process is modelled as a discrete choice process with the help of logistic regression models. These models predict the probability of selection of an activity-location in the form of $(\Pr_i)_j^k$, defined as "the probability that individual *i* will select activity *j* at location *k*". This probability density function is used to determine individual travel demand $(T_i)_j^k$, defined as "the choice of individual *i* towards selection of activity *j* at location *k*". The value of $(T_i)_j^k$ will always be 1 or 0, defining whether or not, respectively, the choice has been made. The third and final step in the activity participation stage is the aggregation of all individual travel demand to formulate the population travel demand $(T)_j^k$; defined as "the aggregate demand for activity *j* at location *k*".

Table 4.2 Parameters of the travel demand modelling framework

STAGE	FRAMEWORK COMPONENTS	DEFINING PARAMETERS	MODELLING STEPS
NEEDS ALLOCATION	Household needs	Household type (household structure/LCS)	H = Household type
	Responsibilities upon each individual	Person type (Head, wife, Child)	I = person type
ACCESSIBILITY CRITERIA	Activities required to be scheduled by each household individual	Activity type - Primary - Secondary - Tertiary	n = types of activities = 1,2,3
		Individual Activity agenda	$(j_n)_I^H$ *j* = one activity of type n
	Activity attributes Location attributes	Opportunity -Transportation component - Spatial component - Temporal component	$(BM_i)_j^k$ Accessibility benefit: - for individual *i*, - in participation of activity *j* - at an activity-location *k*
	Activity choice set	All activities: - within TSP - requiring travel	C_i
ACTIVITY PARTICIPATION	Individual travel demand	Activity-location choice	Logistic regression models: $(\Pr_i)_j^k$ = probability of selection of a *jk*-pair
		Travel demand: For the chosen activity	$(T_i)_j^k$ =probability of making trip to an activity-location (*jk*)
	Aggregate travel demand	- All individual types - All activity types - trip purpose - trip frequency - trip timings	$(T)_j^k = \sum_{j=1,TJ} \sum_{i=1,TI} (T_i)_j^k$ TI=all individuals TJ=all activities

4.4.1 Probabilistic choice process

Hensher (1976) proposed the concept of activity node, whereby each activity has three co-ordinates; the time and space co-ordinates and the probability of locating oneself as the third co-ordinate. This three dimensional co-ordinate system completely represents the activity-space of an individual.

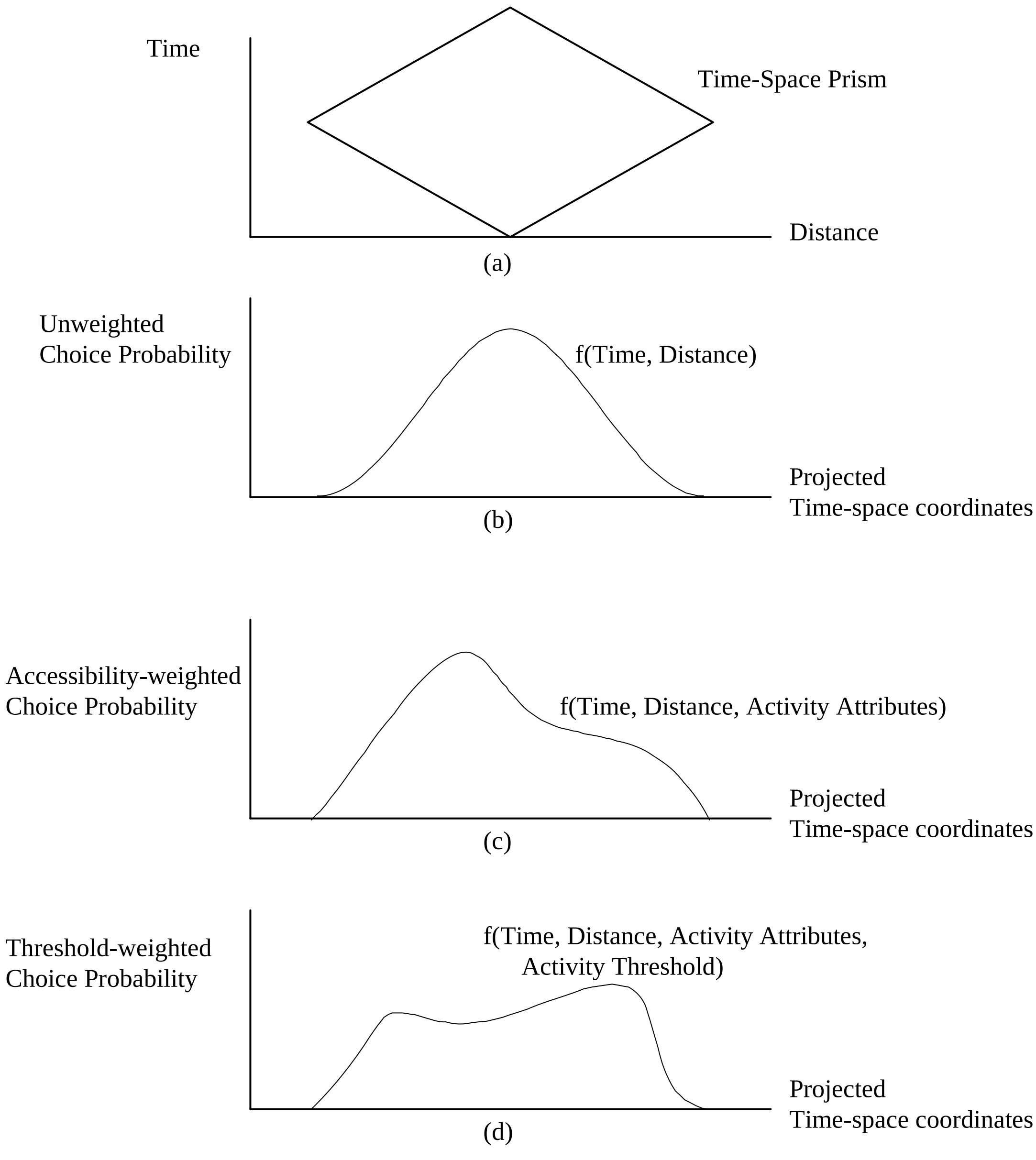


Figure 4.4 Probabilistic choice process

If the choice probability is represented on the basis of time-space co-ordinates only, then all the activities nearest to the time axis will have the highest probability of selection. The probability distribution in Figure 4.4 (b) should be a normal distribution curve. Since this probability does not give any consideration to the activity attributes, it is referred to here as the 'unweighted choice probability', as illustrated in Figure 4.4 (b). The term unweighted emphasises that no consideration is given to the individual in question or the activity he desires to participate.

A concept of weighted probability is introduced here. This means that if the unweighted choice probability is weighed on the basis of individual and activity attributes, then it will result in accessibility-weighted choice probability, Figure 4.4 (c). Furthermore, introducing the trip threshold and conditioning the accessibility-weighted probability on the basis of the threshold level, then it will result in a threshold-weighted probability, Figure 4.4 (d).

The above concept defines that the choice probability can be modelled as a nested choice where the accessibility of the activity is at the higher level and the trip for the activity is at the lower level.

This research defines the activity-space of an individual comprising of all the activities within the time-space prism of the individual, which have a certain probability of selection. This suggests that each activity within the time-space prism of an individual have some probability of selection, based on the attributes of the activity and the individual. The probability of individuals locating themselves at the activity-location can be analysed as a two-stage process, as explained in Figure 4.2.

4.4.2 Modelling the Accessibility Criteria

The utility of an opportunity is defined on the basis of accessibility benefit of an activity. The accessibility benefit model (BM) developed by Odoki (1992, 1998, 1998a) is used to define the utility function as follows:

$$BM_j^k = \exp\left[-\left(\frac{m}{\alpha I}+\frac{1}{v}\right)2x_k\right]\cdot[c\rho\omega]\cdot h^{\gamma}[\tau-\frac{2x_k}{v}]^{\gamma} \qquad (4.1)$$

where:

BM_j^k = index measure of accessibility benefit.

j = activity type

k = activity location

m = monetary travel cost per km

αI = value of travel time per hour assigned by the individual having income I

v = speed of travel in km/hr

x = distance to the location in km

ρ = level of activity (for example number of jobs)

ω = attraction characteristics of the activity in the form of weight attached to the activity (for example primary school has higher weight for child under 15 years than any other)

c = the model calibration parameter (c>0)

h = measure of utility per unit time, based on the primary activity

γ = marginal utility of time available to the individual for the activity participation

τ = total time budget

This utility function combines the three components of accessibility, namely:

- the (dis)utility of travel, i.e. the transportation component
- the utility of location-activity, i.e. the spatial component
- the utility of time, i.e. the temporal component

A discussion on the utility function is given in chapter 3 (section 3.4.1) of this thesis. The following issues are highlighted regarding the application of this function in the travel demand-modelling framework proposed in this research.

- Considering travel as derived demand, the utility function takes into account the travel-related parameters in a negative exponential function. In this way, the BM_j^k function considers the deterrent nature of travel, which has an exponential effect.

- A location-activity is characterised by its attributes. This is the attractiveness of a location offering a particular activity.

- The temporal component in the utility function accounts for the time available for participation in activity after taking away the time for travel.

4.4.2.1 Probability of selection of an activity

The probability (Pr) of an individual selecting an activity *j* at a location *k* is given in the form of multinomial logit model as:

$$\Pr(BM_j^k) = \frac{\exp(BM_j^k)}{\sum_{jk} \exp(BM_j^k)} \qquad (4.2)$$

where:

$\Pr(BM_j^k)$ = the probability that activity-location '*jk*' will be selected.

In equation 4.1, the variable BM_j^k therefore represents the utility of the *jk*-pair for the individual. $\Pr(BM_j^k)$ is therefore a relative utility for a given *jk*-pair over the entire *jk*-set available.

4.5 CONCEPT OF THRESHOLD LEVEL

In a behavioural theory called the Threshold Level Concept, Westelius (1972) found that household needs are accumulated at some rate over time. For each type of need there is a threshold level (TL). When this level is reached, a journey to accomplish that need is triggered (Adler and Ben-Akiva 1979). In this research the threshold level is re-defined to represent the affordability of trip to an activity by a given household type. The TL therefore represents the affordability index for the given household type.

For a household type *h* and an activity type *j*, TL_j^h is therefore defined as a function of generalised time of travel. This generalised time considers both the income and time constraints upon individuals. This concept is applied to model travel demand in rural areas of developing countries.

4.5.1 Generalised time of travel

The household would place a cost of travel on the required activity. This perceived cost can either be given in time units or in money units (Ortuzar 1994). The perceived cost given in terms of time units is called generalised time, i.e. the value of time people place on a given journey. Odoki et al (2000) argued that the generalised travel time, incorporating money and time variables, is able to address monetary and temporal constraints on activity participation, faced by individuals in rural areas of developing countries. They developed a mathematical form for generalised time to be utilised for travel analysis in developing countries, i.e.

$$g_t = \frac{m}{\alpha I} + t \tag{4.3}$$

where

g_t = generalised travel time per kilometre (hrs/km)

m = monetary cost of travel per kilometre (£/km or Rs./km)

αI = the value of travel time per hour assigned by the individual having income I (£/hr or Rs./hr)

t = actual time of travel per kilometre (hrs/km)

Two points are worth noting here (Odoki 1992) in the expression of g_t in equation (4.3):

- with the income as one of its parameters, the function represents generalised time of travel for a given household type (with a given income level)
- containing the monetary cost of travel, the travel mode is implicitly selected in the function

One of the assumptions taken into account by Odoki (1992) in development of the function g_t was that: "People respond to travel times and costs per unit distance only through the generalised time per unit distance".

This leads to the conclusion that generalised time can be attached to the importance of travel for the individual. In other words, there will be a given g_t for each type of activity. Furthermore, Southworth (1981) reported from empirical studies, that the value of time for various activities (including work, shopping and recreation) show a consistent trend. Southworth (1981) found the value of excess waiting time (expressed as a percentage of income) to be 51%, 15.2% and 11.3% for work, shopping and recreation, respectively.

Consequently the following may be deduced:

a) g_t can be formulated for various income levels and activity types

b) as g_t has a time component, it can also be related to the TL.

4.5.2 Accumulation of needs over time

Assuming that the needs are measurable in the form of a stock with a given rate of stock consumption, it is possible to represent the level of this stock as a function of time, as illustrated in Figure 4.5.

Mathematically, the consumption stock function Z' can be represented as a function of time, i.e,

$$Z' = f'(time) \qquad (4.4)$$

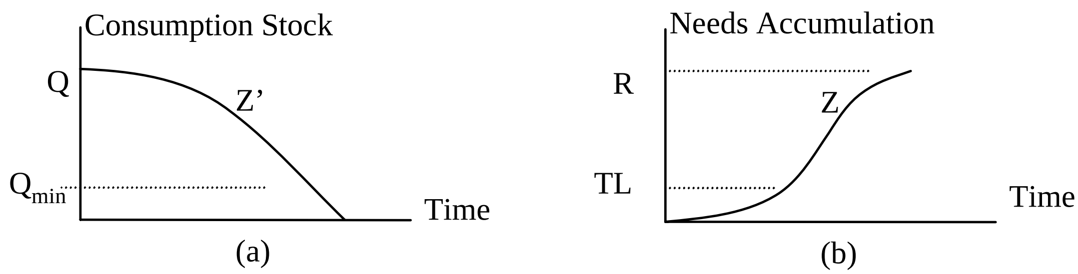


Figure 4.5 Need accumulation

If need accumulation can be defined as the reduction of consumption stock over time, then the need accumulation function, *Z*, is therefore the inverse of the function *Z'*, i.e.:

$$Z=1/Z' \tag{4.5}$$

or

$$Z=f\ (time) \tag{4.6}$$

4.5.3 Needs disbursement

The needs are accumulated until the time when the household participates in some activity in order to disburse them (assumption 2, in 4.2.2.1). The extent to which the needs are allowed to accumulate, is defined as the Threshold Level (TL). Conversely, the TL depends on the time the household can *afford to delay* carrying out the activity. A third interpretation of TL would be the ability of a household to keep the consumption stock at a given level, Q_{min}, in Figure 4.5.

The concept of TL can be explained with an example. Considering water consumption as a household need, the household requires a given consumption stock at all times. Also, considering that travelling for water collection is the only way to obtain water, the household can delay this travel until the consumption stock reaches a certain minimum level, say Q_{min}. This Q_{min} when transformed to the needs accumulation scale is the TL, i.e. the stock level at which the household will make a trip (Figure 4.5).

In this way, TL is a function of time and the cost of travel. As it is logical to assume that each need will have a different TL therefore TL must be formulated for each activity type *j*. Furthermore, the need is a function of the life cycle stage of the household, the LCS should also enter into the function defining TL. These parameters are therefore incorporated in the function for TL, i.e.:

$$TL_j^h = f(\text{generalised time of travel, rate of consumption, storage capacity, LCS}) \qquad (4.7)$$

where

j = 1,2,3

4.5.4 Needs disbursement and threshold frequency

When TL is reached and the trip for the activity (fulfilling the need) is made, the need accumulation is set to zero. The TLs for various activity types intersect the need accumulation function to define the time at which a trip is triggered. The difference can be easily understood by considering a longer time horizon (about one year). Figure 4.6 illustrates this concept. The term X_j defines the number of times the TL is reached and, consequently, a trip is triggered for the activity type *j*. This is termed as threshold frequency (TF).

According to Figure 4.6 the threshold frequency can be defined as the number of times the threshold has been reached. This whole process is viewed on a one year as the time horizon such that all the types can be accounted for and compared. Three activities are selected to illustrate the concept of TF. The TF defined from Figure 4.6 would then be:

$$TF_j = X_j \qquad (4.8)$$

where

TF_j = threshold frequency for the need type *j*

X_j = the number of times the needs curve is set to zero by the household.

From Figure 4.6, it can be seen that X_j is dependent on the level of the need accumulation when TL was reached. In this way different TLs can be defined for different activities. Thus at a given time horizon 't', $X_1=4$, $X_2=3$, $X_3=2$, giving a total trip frequency of $(4+3+2) \times 2$ trips (per year). Therefore, $TF_1=4; TF_2=3; TF_3=2$.

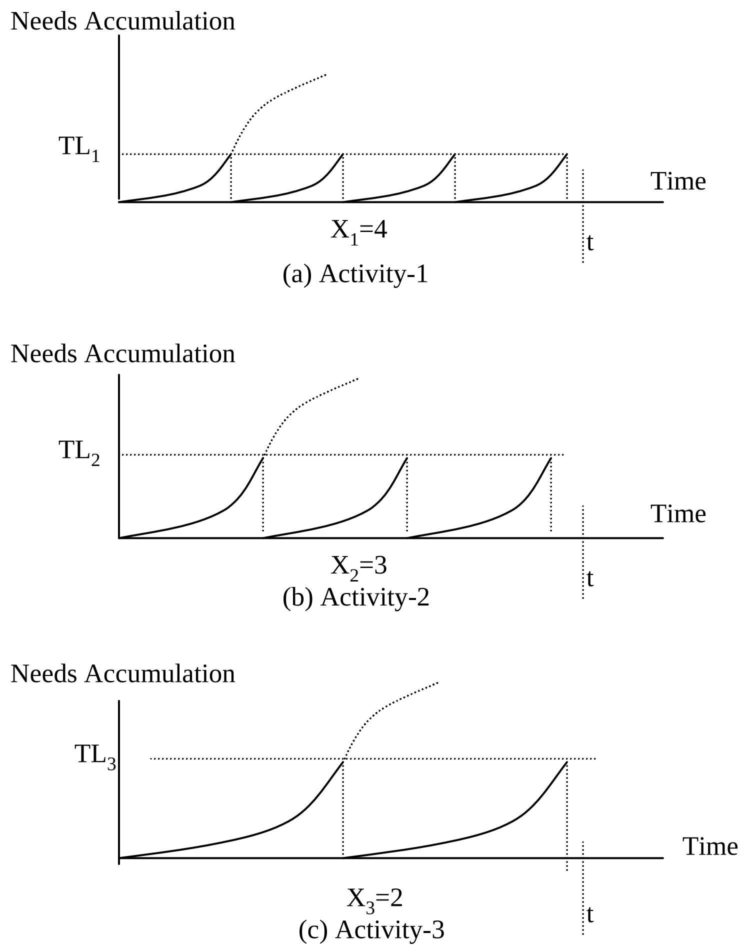


Figure 4.6 Threshold level and trip frequency

4.5.5 Mathematical form of TL

This section develops the mathematical form of the TL function, in the light of the concepts developed earlier in the chapter. This mathematical development is based on studying how trips for certain activities are carried out. It would then be possible to generalise the concepts for a wide range of activities.

In rural travel pattern analysis for Tanzania, Howe (1996) found that there were only about seven activities that formed a large proportion of rural travel. These activities are given in Table 4.3. Some of these activities and their nature of travel are studied for the development of the mathematical form for TL.

Table 4.3 Average annual travel time on some household activities

ACTIVITIES	**TIME (hrs/year)**	
	Female	**Male**
1 Water collection	520	
2 Firewood collection	250	
3 Crop establishment	200	200
4 Grinding	150	
5 Market	200	30
6 Weeding		70
7 Harvesting		50
Reported Total	1500	500
Total of 1-7 as % of reported total	88%	70%

Source: Howe (1996)

Although the activities presented in Table 4.3 only cover subsistence economic activities, they do however represent 70-88 percent of the overall activity participation. Any models developed on this basis would, therefore, be able to address a large proportion of the rural travel demand.

4.5.5.1 Water and Firewood Collection

More than half of the annual travel by rural women in Tanzania was for water collection and firewood collection (Table 4.3). The following assumptions hold good for both of these activities:

a) the activities are part of daily household consumption
b) there is a measurable storage capacity for each
c) there is a measurable rate of stock consumption

The above assumptions are applied to develop the mathematical form of TL in a conceptual model as given in Figure 4.7. It is assumed in Figure 4.7 that the rate of stock consumption has a linear trend. The vertical axis gives the stock level at a given time 't'.

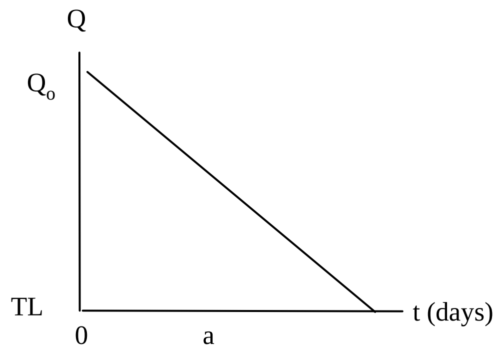


Figure 4.7 Parameters defining TL

For a given household the maximum stored stock will be given as:

$$Q_o = q_o \cdot H \cdot a \qquad (4.9)$$

where

Q_o = maximum stored stock available for the household

q_o = average daily rate of consumption per person of the household

H = size of the household

a = time (in days) at which stock will fall below TL if consumed by the household at the given rate.

Considering that the availability of the stock is a household necessity, the trip for the activity will be triggered at some minimum level of the stock. This is defined here as the threshold level for the activity. Mathematically:

$$TL = Q_{min} \qquad (4.10)$$

and

$$t_{TL} = a \qquad (4.11)$$

where:

Q_{min} = minimum acceptable stock level

TL = stock level at the threshold

t_{TL} = time at the threshold

For simplicity, it is considered that TL represents the zero stock level, i.e.

$$Q_{min} = 0 \tag{4.12}$$

4.5.5.2 Relationship between Threshold Level and need accumulation limit

Based on the above conditions (equations 4.11 and 4.12) the factor '*a*' will represent the time taken to reach Threshold Level (TL), where TL is the minimum acceptable stock level (Figure 4.7). Starting from the instance at which the stock was last replenished, the household will allow certain time lapse so that the stock level reaches the TL. In this way, '*a*' can be defined as *need accumulation limit*.

Mathematically the two parameters, TL and *a*, are related through equation (4.11), i.e. the time at which the stock level reaches a value equal to TL, measured from the maximum stock level Q_o.

4.5.5.3 Mathematical form of need accumulation limit

Analysis of equation (4.9) reveals that while q_o and H are the physical entities, the term a represents a perceived entity, i.e. the perceived delay for travel to the activity. In this way a accounts for the behavioural component of households travel.

Defined formally, a is “the time which the individual would wait before the next trip to participate in an activity fulfilling a need”. In this way, '*a*' represents the perceived value of time the individual would place on the activity in his longer horizon trip scheduling. It is important to recognise that the individuals would perceive the cost of making the trip and would convert this cost into the number of days they would like to wait for the next trip for the activity. Comparing equations (4.7) and (4.9) it is deduced that a is a function of generalised time of travel and life cycle stage of the household, i.e.

$$a = f\,(generalised\ time\ of\ travel,\ LCS) \quad (4.13)$$

or

$$a = \beta\left(\phi_g \cdot x \cdot g_t\right)_{LCS} \quad (4.14)$$

where:

a = need accumulation limit in terms of time to reach threshold, measured from the previous maximum stock level (days)

x = distance for the activity (km)

g_t = generalised time of travel to the activity (in hr/km)

ϕ_g = factor accounting for the generalised time of travel, representing the number of days of delay in TL per hour of generalised time (days/hr)

β = calibration factor

The use of equation 4.14 fulfils the following conditions:

a) farther activities render higher 'a' values.

b) higher g_t increases the value of a.

4.5.5.4 Effect of distance and generalised time on need accumulation limit

Figure 4.8 shows how the variation of x, g_t and ϕ_g affects the trip-making for the activity. It may be demonstrated through Figure 4.8 that higher values of x would tend to sharply decrease the frequency of making trips. This is due to increased gradient of a for higher values of x. Furthermore, in the conceptual model of Figure 4.8 it was assumed that ϕ_g is a function of household's life cycle stage. For a given distance the value of a would, therefore, depend on the LCS of the household. For example, for a given distance x, for LCS4 the value of ϕ_g would be the least (rendering more frequent trips) and for LCS1 the value of ϕ_g would be the highest (rendering less frequent trips) to the activity-location.

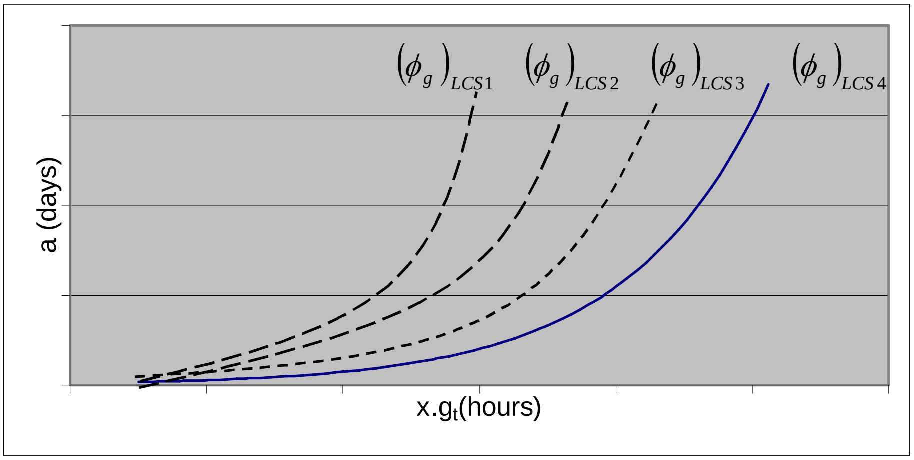


Figure 4.8 Effect of distance on need accumulation limit

4.5.5.5 Boundary conditions for parameters defining TL

The mathematical form of the TL was analysed using some variation on the boundary conditions for the parameters defining TL. These concepts are illustrated in Figure 4.9 (a to d). Figure 4.9 contains four scenarios, i.e.:

a) *Households with equal a and variable H (or q_o)*: Equal income households are an example of equal 'a'. The two households will have the same frequency of trips but will differ in their Q_o, i.e. the storage will be different. (Q_1>Q_2), see Figure 4.9 (a).

b) *Variable a*: The variation in time or distance for travel would result in the variation in *a* across the population. Households with lower values of *a* will end up having higher trip frequencies. Households would also differ in their Q_o, i.e. $Q_1>Q_2$. This situation is more evident in the case of difference in income level (variable generalised cost) between households. The low income household would have a lower value of *a*, and higher threshold frequency.

c) *Constrained storage capacity*: As a special case of (a) and (b) above, consider that the household requiring Q_1 is forced to keep it to a lower value, say the storage capacity C, i.e.

$Q_o = C$; such that $C < Q_1$.

In this case, the value of *a* has to be adjusted in the following way.

$a_{act} = \frac{C}{q_o H}$ such that $a_{act} < a_{est}$.

This means that the actual number of trips made would be higher than that estimated on the basis of *a*, i.e.

$TF_{act} > TF_{est}$

where

a_{act} = value of the actual TL based on the storage capacity C

a_{est} = estimated *a* based on the income and distance parameters

TF_{act} = actual threshold frequency, and

TF_{est} = estimated threshold frequency.

d) *Very large value of a*: In this case high cost of travelling to the activity is combined with the high ϕ_g value (LCS1 in Figure 4.8). This results in extremely large values of *a*. For example if water collection is at a considerable distance, the value of *a* would be very high (see Table 4.4 for x=5km and H=2). In this case, the value of *a* will be governed by the maximum storage a household can sustain, i.e. storage will be governed by the storage capacity C, i.e.:

Qo = C; if $a \rightarrow \infty$,

This would, in turn, force *a* to be dependent on the storage capacity, irrespective of the generalised time of travel. As the household has a finite storage capacity, it would have a finite trip threshold.

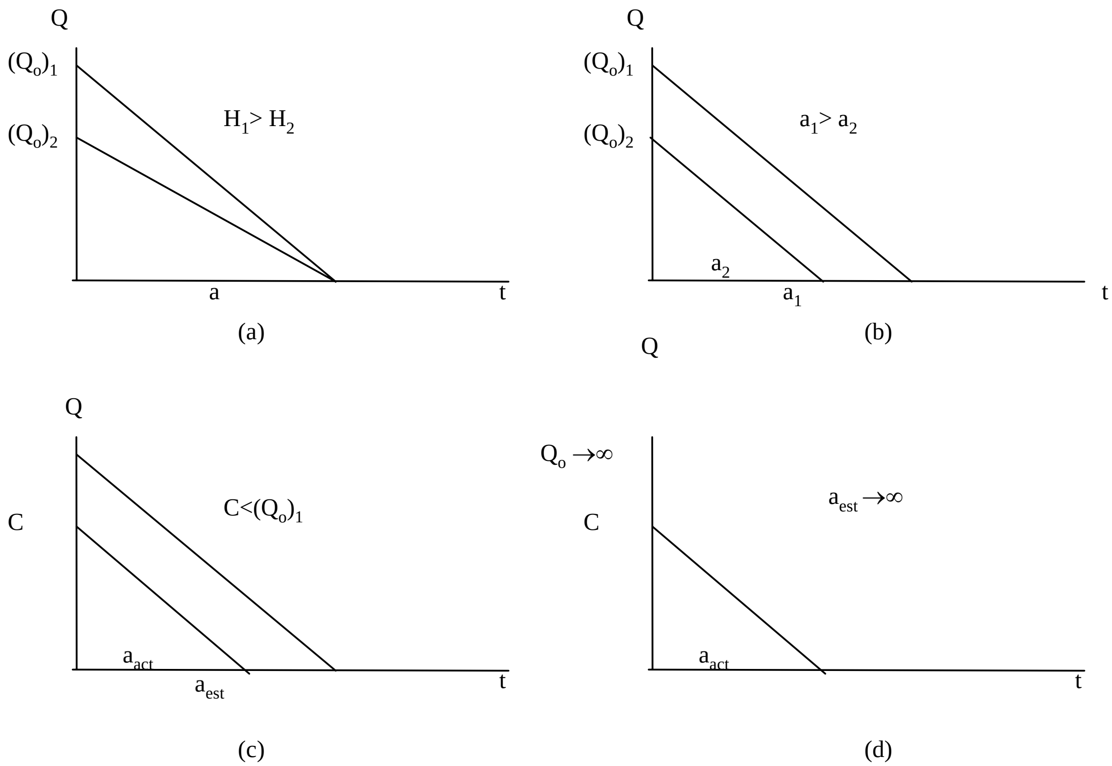


Figure 4.9 Boundary conditions for parameters defining TL

4.5.5.6 Example calculation

Water collection was used as an example to show the steps used in the calculation of TL. Table 4.4 and Table 4.5 show the calculations used. Two income levels and two types of households were considered to show the variation in TL. The storage capacity was assigned two levels, very high and very low, to analyse the effects of constrained capacity. The distance and household size were assigned two values each, a high and a low value. The low household size (H=2) represents a household at LCS1, and the high household size (H=7) is representative of a household at LCS4. Figure 4.10 illustrates the effect of distance on TF with various control parameters.

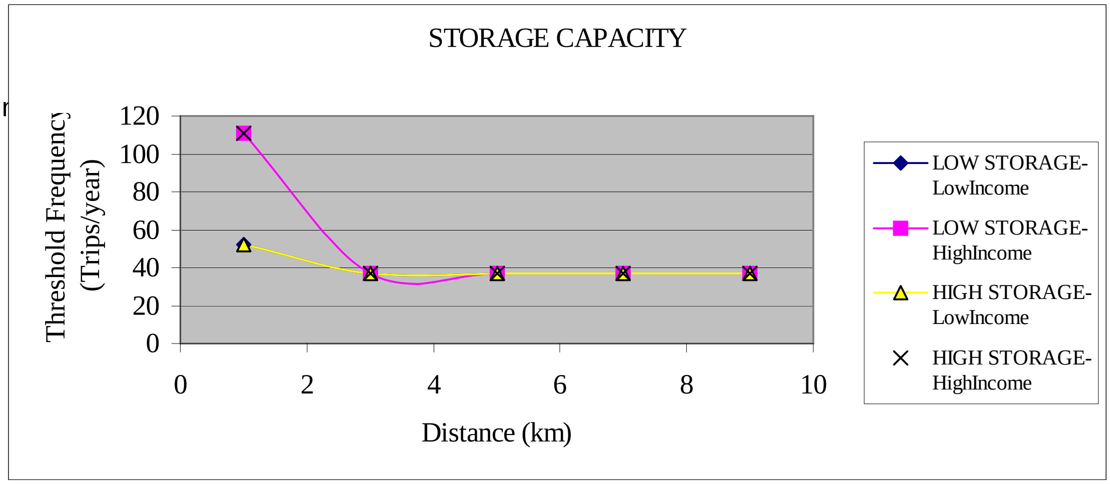
Table 4.4 Parameters effecting trip threshold level: Low Income

Steps for Calculation of TF	Low Income							
	x=2				x=5			
	C=100		C=1000		C=100		C=1000	
	H=2	H=7	H=2	H=7	H=2	H=7	H=2	H=7
C (gallons) =	100	100	1000	1000	100	100	1000	1000
qo (gal./day/person)=	5	5	5	5	5	5	5	5
H (persons)=	2	7	2	7	2	7	2	7
Parameters for *a*								
m=	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
alpha(I)=	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
v (km/hr)=	2	2	2	2	2	2	2	2
t (hrs/km)=	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
gt (hrs/km)=	2	2	2	2	2	2	2	2
x (km)=	2	2	2	2	5	5	5	5
Calculations for *a*								
beta=	1	1	1	1	1	1	1	1
Phi(x)=	2.7	2.7	2.7	2.7	12.2	12.2	12.2	12.2
Phi(g)=	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
a (days)=	10.9	10.9	10.9	10.9	66.3	66.3	66.3	66.3
Qo (gallons)=	108.7	380.6	108.7	380.6	663.5	2322.2	663.5	2322.2
Check for C								
Is Qo<C	NO	NO	YES	YES	NO	NO	YES	NO
$a_{act=}$	C/qoH	C/qoH	a	a	C/qoH	C/qoH	a	C/qoH
Threshold Frequency								
a=	10.0	2.9	10.9	10.9	10.0	2.9	66.3	28.6
TF (per year)=	37	128	34	34	37	128	6	13

Table 4.5 Parameters effecting trip threshold level: High Income

Steps for Calculation of TF	High Income							
	x=2				x=5			
	C=100		C=1000		C=100		C=1000	
	H=2	H=7	H=2	H=7	H=2	H=7	H=2	H=7
C (gallons) =	100	100	1000	1000	100	100	1000	1000
qo (gal./day/person)=	5	5	5	5	5	5	5	5
H (persons)=	2	7	2	7	2	7	2	7
Parameters for *a*								
m=	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
alpha(I)=	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
v (km/hr)=	2	2	2	2	2	2	2	2
t (hrs/km)=	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
gt (hrs/km)=	1	1	1	1	1	1	1	1
x (km)=	2	2	2	2	5	5	5	5
Calculations for *a*								
beta=	1	1	1	1	1	1	1	1
Phi(x)=	2.7	2.7	2.7	2.7	12.2	12.2	12.2	12.2
Phi(g)=	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
a (days)=	7.1	7.1	7.1	7.1	62.6	62.6	62.6	62.6
Qo (gallons)=	70.9	248.0	70.9	248.0	625.6	2189.6	625.6	2189.6
Check for C								
Is Qo<C	YES	NO	YES	YES	NO	NO	YES	NO
$a_{act=}$	a	C/qoH	a	a	C/qoH	C/qoH	a	C/qoH
Threshold Frequency								
a=	7.1	2.9	7.1	7.1	10.0	2.9	62.6	28.6
TF (per year)=	52	128	52	52	37	128	6	13

Out of the three factors (distance, storage capacity and household size) the most dominant factor was the distance to the activity. The graphs show the behavioural notion that people make less frequent trips as the distance to the activity was increased. The large household size combined with storage capacity restriction forces the individuals to make frequent trips.



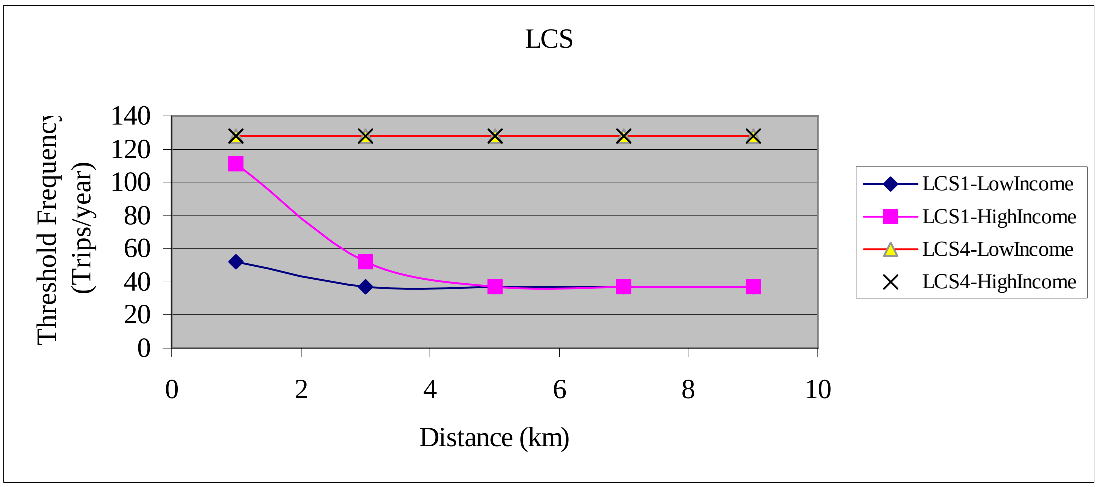


Figure 4.10 Effect of distance on TF

4.5.5.7 Generalised function for need accumulation limit

From the above discussion, it is clear that the function used for representation of *a* must be an exponential function. For example in the case of shopping, the value of *a* must become asymptotic with the time axis; i.e. as Q $\rightarrow 0$, a $\rightarrow \infty$. The actual form of the function can be calibrated from field data.

4.5.5.8 Use of threshold limit in activity choice

It must be mentioned here that in the development of logistic regression models for prediction of activity choice, the probability density function $(\Pr_i)_j^k$ defines the choice of an activity *j* after its threshold limit is reached. Thus the threshold limit is implicitly considered in the activity choice process. This can be termed as simultaneous choice (see for example Richards and Ben-Akiva 1975).

4.6 EXPLANATION OF DEMAND MODELLING FRAMEWORK

4.6.1 Household Type

The proposed demand modelling framework is applied to individuals within a given household type. Consequently, it is necessary that the household type must be defined at the start. In the activity behaviour approach, the household activity participation is visualised on the basis of two levels of decisions taken at the household level (Ben-Akiva 1996):

a) long-term mobility decisions: these decisions shape the entire activity space of the household and act on a long-term time horizon (years), for example, where to live, where to work, etc.
b) daily activity decisions: they represent day-to-day variation of activities and needs, for example whether to go shopping on a week day.

In the accessibility-activity approach developed in this research, the long-term mobility decisions are captured in the two levels of parameters which define household type:

Level A parameters

Three socio-economic characteristics of the household are included, each defined by three levels:

Income	low, medium, high
Household structure	low, average, high
Vehicle ownership	none, NMT/MT, both

Level B parameters

These constitute Life Cycle Stage (LCS). The LCS of a household is defined on the basis of the household structure and family relationship. It addresses changes in household activity-organisation over the lifecycle (Jones et al 1983). For example, the arrival of a new born in a family is a landmark in the household activity behaviour.

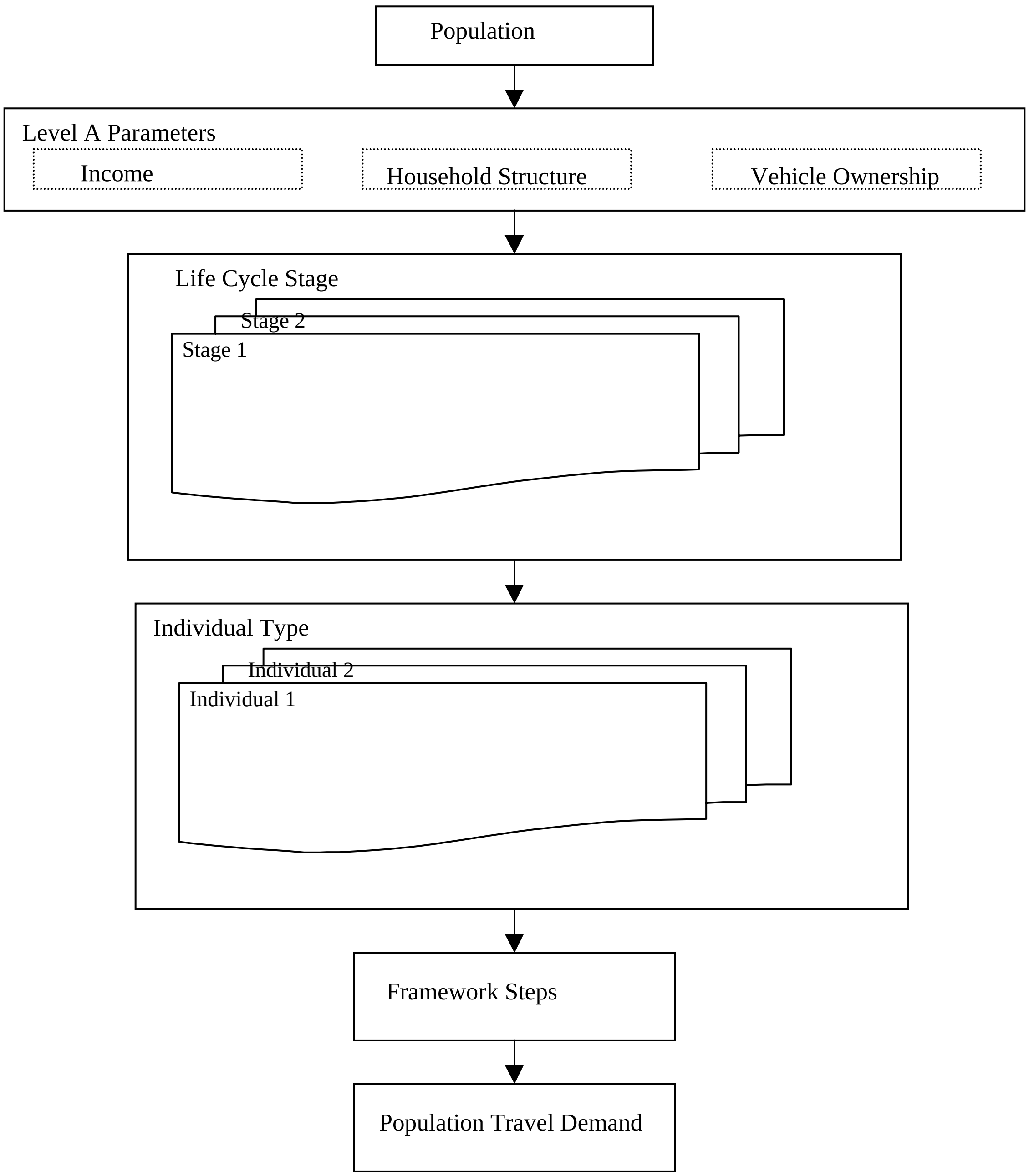


Figure 4.11 Analysis of household types

For application in rural transport planning for developing countries, the following four LCS are recommended:

1. Households without children
2. Households with pre-school children only
3. Household with school children only
4. Households with both pre-school and school children

The above formulation will divide the whole population into 108 household types. Figure 4.11 represents this hierarchy of household types.

4.6.2 Needs allocation

Each household type will have a set of needs. The LCS is the major determinant of household needs. These needs are then converted into activities and each member of the household is assigned the relevant activities. Table 4.6 illustrates the process for LCS_1 and LCS_2, i.e. household without children, and household with pre-school children, respectively. With the help of these two LCS, the table shows how the activity involvement is re-defined as the household enters a new stage.

Table 4.6 Need-Allocation according to LCS

NEEDS	**LCS_1**		**LCS_2**	
	Activities	***Persons Responsible***	***Activities***	***Persons Responsible***
Primary	Water / firewood collection	Housewife	Water / firewood collection	Housewife, Child>15
	Work	Household Head	Work	Household Head
Secondary	Market	Household Head Housewife	Market	Household Head Housewife Child>15
			School	Child>15, Child<15
Tertiary	Leisure	All	Leisure	All

It can be seen in Table 4.6 that the two household types differ not only in the type of activities they have to perform but also in the individuals performing these activities. The LCS_2 households, for example, can get child >15 years to be involved in water/firewood collection alongside the housewives.

4.6.3 Accessibility of activities for the individuals

This step involves identification of all the activities that lie within the time-space prism (TSP) of the individual. The activity location and the time required for participation in the activity are needed for this stage of the analysis. It uses two vectors for representing an activity, i.e. $\{dist\}_j$ and $\{time\}_j$. These are required to completely define each activity j in space and time.

The Activity Schedule

The distance and time vectors are sufficient conditions in the case of discrete activities. However, it is clear that all the activities within the TSP would not be available to the individual if an activity schedule is considered. This means that activities to be performed by the individual must be considered continuous on the time scale, i.e. an interdependency of activities in time and space. The activity schedule can be formed by arranging all possible combinations of activities fulfilling two conditions: activity duration and travel time. This process can be described as:

$$\tau = \sum_{j=1}^{J} t_j \tag{4.15}$$

where

τ = total time budget

t_j = time required for activity j (activity participation plus travel)

J = total number of activities, comprising the schedule, available to the individual

4.6.4 Activity choice

This step estimates the probability of choice of one activity (or schedule) from those activities relevant to the individual type. There are four ways of dealing with this problem.

Firstly, with an empirical approach, the observed choices would be written as a function of certain attributes of the choice. For example, an observed activity can be a function of the characteristics of the individual (income etc.). Field data is used to model the choice process. This approach requires a large number of attributes of the individual in order to replicate true behaviour.

The second approach is to use simulation. The simulation process generates choices on the basis of certain rules. In order to reduce the amount of data to be used in this analysis, it will be necessary to make certain assumptions about the basis of selection/choice. The choice is performed as an optimisation problem using constraints such as time, cost, etc. The objective function will then be the choice of the activity.

The third approach to the problem is the analytical approach, whereby an analogy to certain fundamental principles is developed. A form of this is the econometric or utilitarian approach. The utility function of each feasible activity (schedule) is formed for the individual. The individual is assumed to select the activity/schedule that yields the maximum utility. The economics of decision making is the basis of this approach.

The fourth approach could be considered as a hybrid approach by combining the simulation and the analytical approach. The feasible set of activities or schedules would be obtained from the simulation approach. These are then used as inputs to some utility maximisation process by considering the utility of each feasible activity or schedule.

The proposed demand modelling framework has adopted the following:

The accessibility of an activity is considered as the factor defining the feasibility of an activity. Referring to the definition of *BM* (equation 4.1) given earlier, it is clear that the accessibility of an activity to an individual is defined on the basis of not only fulfilling the time-space parameters but also in terms of the activity attraction parameters. This implies that any activity having a *BM* less that or equal to zero, would not be considered as an opportunity for the individual. The activity choice is therefore composed of two stages:

a) accessibility of activity (or activity schedule)
b) probability of selection

These two stages of a choice process can be mathematically given as:

(BM_j^k) = *f(generalised cost of travel, attraction of activity, time available)*

$\Pr(T_j^k)$ = $f((BM_j^k)$*, need threshold)*

Explanation of the Activity Choice problem

Consider, for example, a simple case of a housewife from a rural area, whose basic needs comprise three activities, namely; water collection, firewood collection and cooking. This situation is illustrated in Figure 4.12. The figure shows the activity arrangements in time and space. The two prisms a and b are the TSPs for the morning (0800-1200) and evening (1400-1800), respectively.

It is assumed that cooking or preparing a meal from 1200-1400 is a required activity. It can also be assumed that the two activities, although primary activities, can be performed either in the morning 0800-1200 or in the evening between 1400-1800. Due to constrained physical strength, however, the two activities cannot be combined into a single trip.

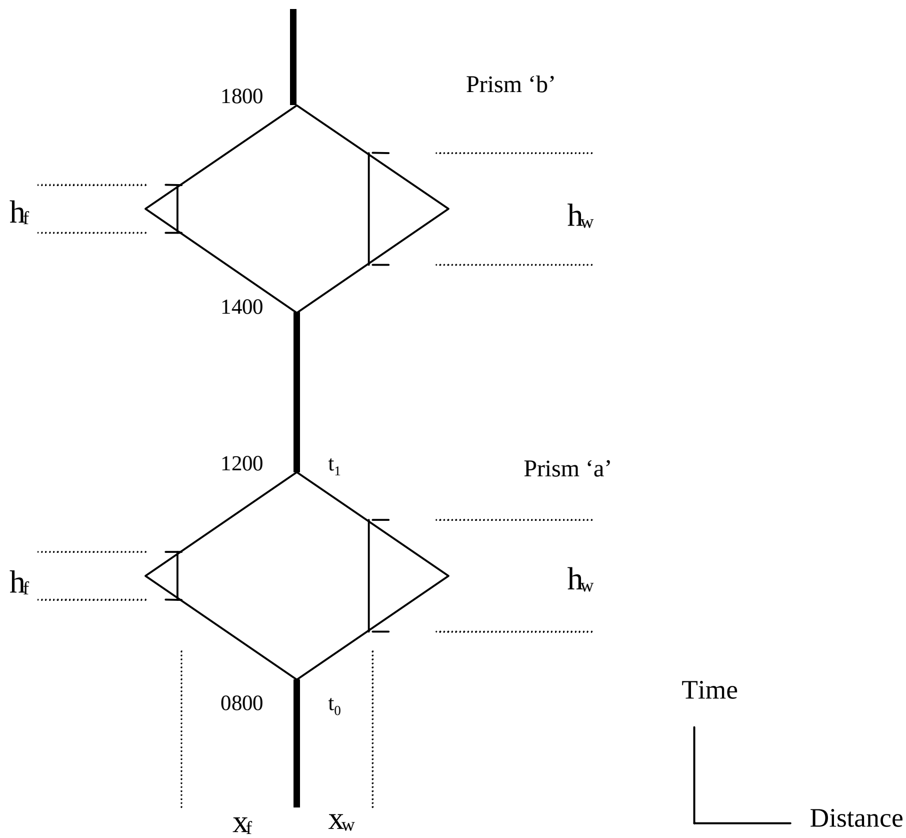


Figure 4.12 Daily activity pattern of a housewife

The parameters of the activities represented in the figure are:

x_w = distance of water collection activity from home

x_f = distance of firewood collection activity from home

s_w = minimum time required for water collection

s_f = minimum time required for firewood collection

h_w = available time for water collection

h_f = available time for firewood collection

s_w $<h_w$,

s_f $<h_f$

From the definition of *BM*, both the activities would be available for selection in the morning and in the evening. The final choice of the activity sequencing will be dependant on their *timing utility*. For example, if water is immediately required and firewood collection can be postponed till the evening, the probability of selection of water collection will be higher. This means that if water collection is to precede cooking, then its threshold would be reached in the morning hours, such that:

$$(AM\ Utility)_{water\ collection} > (AM\ Utility)_{firewood\ collection} \tag{4.16}$$

such that in the morning:

$$(Pr)_{water\ collection} > (Pr)_{firewood\ collection} \tag{4.17}$$

The above choice process can also be formulated in terms of time available for the activities, according to the time-space geometry as follows:

$$T_{AM}=t_1-t_0 \tag{4.18}$$

$$2x_w.(1/v)+h_w = T_{AM} \tag{4.19}$$

or

$$2x_f.(1/v)+h_f = T_{AM} \tag{4.20}$$

where

T_{AM} = time budget available in the morning hours (0800-1200)

Using this information the time threshold can be incorporated in the utility function (BM) for the activities as:

$$(BM_{jk})_{AM}= f[(x,h,T,C)_{jk}]_{AM} \tag{4.21}$$

where

$(BM_{jk})_{AM}$= accessibility benefit for activity j at location k for the morning hours

x =distance for the activity

h =time available for the activity

T =morning time budget for the individual

C =represents the cost component in the *BM* function.

As *C* represents the generalised cost function, the timing utility for the activity will be higher in the morning hours. This expression means that the individual would perceive a utility for the activity according to its timing of the participation. On the basis of arguments mentioned earlier, the *BM* for water collection would be higher in the morning hours than that for firewood collection. The probability of selection of water collection activity will, therefore, be higher than the probability of selection of the firewood activity, i.e.

$$(Pr)_w > (Pr)_f \qquad (4.22)$$

4.6.5 Trip frequency

According to the threshold level (TL) concept developed in this research (section 4.5) each activity type will have its TL which will govern the trip for the activity. The function for threshold frequency (TF) will decide the number of trips per year for the activity. When multiplied by the probability of selection of these activities, the trip frequency per year can be found.

Time Horizon

As the mathematical form of TL was developed on the basis of long term needs allocation for the households, the time horizon was considered a year. On the other hand, in order to incorporate coupling constraints, the accessibility criterion uses a daily time budget. It is therefore important to identify the difference of time horizons for the two operations.

This essentially means that two mathematical operations interact at this level:

a) probability of selection of an activity (or activity schedule) on the basis of a daily time budget

b) frequency of making a trip for the activity (or activity schedule) on the basis of a yearly time horizon

It can be argued that as the probability of an event can be transformed to any scale (time horizon in the present case), it is a valid mathematical operation to find the expected frequency of trip on the basis of a year as the time horizon.

Activity Choice summary

It can be summarised that activity choice is performed as a three stage process:

1. estimating the accessibility benefit of the activity or schedule
2. determining the probability of selection of the activity or schedule
3. determining the frequency of trips for the activity

For an activity schedule, the utility of the most important activity in the schedule would govern. Alternatively weighting of all activities in the schedule can also be considered. The choice in this case would be defined as the choice of an activity schedule out of alternative schedules.

This completes the travel demand analysis for the individual. The aggregate travel demand for the household can be estimated by aggregating individual travel demand to the household and then to the population.

4.7 DESCRIPTION OF MODEL PARAMETERS

The parameters governing the accessibility-activity-based modelling framework can be divided into two parts:

a) household and personal characteristics

b) activity and land-use characteristics

The household characteristics are used in the description of household types and the listing of household level needs. The parameters include:

- household income
- number of children
- ownership/availability of transportation vehicle

The activity and land-use characteristics used in the estimation of the utility function, and consequently in the activity choice, include:

- location of activities
- distance of activities
- connecting transportation system

4.7.1 The activity-related parameters

Three activity-related parameters, are required as follows:

a) level of activity parameter: ρ

b) a parameter accounting for activity attraction for individual: ω

c) a policy parameter: c

4.7.2 The level of activities-ρ

As ρ represents the level or intensity of an activity at a location, it can be expressed in the form of an array of attributes of each location separately as follows:

$$\rho_j^k = f\left\{\left(X_j^k\right)_l\right\} \tag{4.23}$$

where

ρ_j^k = level of activity j at location k

$\left(X_j^k\right)_l$ = vector containing attributes of activity j at location k

l = 1,2,…..L, number of attributes used for activity j

For example, if there are two locations for the primary school with different quality of education, then $\left(X_j^k\right)_l$ will represent the quality of education at each location *k* (here l=1).

The mathematical form for ρ is based on the fact that in rural areas of developing countries a large number of households are served by a limited number of activity locations. This fact is addressed by two parameters; namely, the problem index of the activity, and the number of households. Equation 4.24 defines this relationship:

$$\psi_j^k = \frac{PI^{-1}}{\text{No. of Households}} \tag{4.24}$$

where

ψ_j^k = attributes of a single activity location

PI = problem index

The problem index represents the difficulty of reaching the activity in the form of some deterrence function (for example terrain).

The parameter ρ can then be found as:

$$\rho_j^k = \sum_k \psi_j^k \tag{4.25}$$

From the above two equations, the parameter ρ should be in the form of an array of quality attributes for each activity type with a combined effect of all locations.

4.7.3 Activity attraction parameter ω

In order that ω should define the attraction characteristics of the activity, the following values are taken in the form of weights attached to the activity types: for example, primary=1.0; secondary=0.5; tertiary=0.1; irrelevant=0.001. These weights were assumed for demonstration purpose. Actual values have been derived from field data (as presented in chapters 7 and 8 during model development and application stages).

Table 4.7 Activity relevance and weighting for person types

Activities	Head	Other	Ch<15	Ch>15	Head (Single Parent)
1. Water Collection	0.001	1.000	0.001	0.500	0.500
2. Firewood Collection	0.001	1.000	0.001	0.500	0.500
3. Marketing	1.000	0.001	0.001	0.001	0.001
4. Elementary School	0.001	0.001	1.000	0.001	0.001
5. Secondary School	0.500	0.001	0.001	1.000	0.001
6. Health	0.500	0.500	0.500	0.500	0.001
Legend: primary=1.0;secondary=0.5;tertiary=0.1;irrelevant=0.001					

4.7.4 The policy parameter-c

The model calibration parameter c (c>0) represents the development targets to be achieved in the activity levels available to the local population. Possible type of activity listing may be given as in Table 4.8 below (Odoki 1998, Edmonds, 1998). It may be noted in the table that c is actually related to the parameter ρ.

Table 4.8 Example values for policy parameter c

Activity Type	Activities	Activity Level Measure	Existing Situation	Target	Value of 'c'
Primary	Employment	Number of jobs	1 per 500	1per 100	100/500
Secondary	Education	Students per school	1 per 250	1 per 150	150/250
Tertiary	Recreational	Number of facilities	1 per 1000	1 per 500	500/1000

4.8 TRIP FREQUENCY

The probability of selection of an activity by an individual is based on the accessibility criterion, established prior to this stage. This formulates the probability density function of the activities, which is composed of only those activities:

a) that are within the TSP of the individual, and
b) that require travel.

TL_j, defined for each activity type *j*, was used for estimating trip frequencies for the given activity types. The frequency of travel can be found using the threshold frequencies as defined earlier (section 4.5.4). As stated, if this is done on a time horizon of one year, it will give the trip frequency density for one year. According to the basic rules of probability, the expected frequency of the trips made by the individual can be found as follows:

$$(T_i)_j^k = TF_j \cdot \Pr(BM_i)_j^k \tag{4.26}$$

$$(T_i)_j = TF_j \cdot \sum_{k=1}^{K} \Pr(BM_i)_j^k \tag{4.27}$$

$$T_i = \sum_{j=1}^{J} \left\{ TF_j \cdot \sum_{k=1}^{K} \Pr(BM_i)_j^k \right\} \tag{4.28}$$

where

TF_j = threshold frequency for the activity *j*

J = total number of activities available to the individual *i*

K = total number of locations available to the individual *i*

$(T_i)_j^k$ = total trips by the individual *i* for activity *j* at location *k*

$(T_i)_j$ = total trips by the individual *i* for activity *j* at all locations *k* offering the activity

(T_i) = total trips by the individual *i* for all activities *j* at all corresponding locations *k*

Equation (4.26) defines the activity-location choice expressed as the probability that an individual would select the activity on the basis of the components of accessibility for the activity at a given location. Equation (4.27) defines the aggregate choice for a given activity over all the locations *k*. Equation (4.28) defines aggregate travel demand for the individual *i*.

Relating the mathematical development to the four-stage process used in urban transportation planning, it can be showed that:

a) equation 4.26 gives trip distribution, as it preserves trip purpose and trip locations

b) equation 4.27 gives trip ends by purpose, as it aggregates all locations for a given activity *j*

c) equation 4.28 gives trip ends for the selected individual *i*, all trip purposes and all locations.

4.8.1 Aggregate travel demand

The individual travel demand can be extended to estimate the population aggregate such that:

$$T_h = \sum_{i=1}^{TI} T_i \tag{4.29}$$

$$T = \sum_{h=1}^{TH} T_h \tag{4.30}$$

where

T_i = total trips by the individual *i* for all activities *j* at all corresponding locations *k*

T_h = household travel demand

T = population travel demand

TI = total number of persons in a given household

TH = total number of households in the given population

Considering individual type and household type, the above equations (4.29 and 4.30) would be rewritten as:

$$T_I = \left(\sum_{i=1}^{TI} T_i \right)_I \tag{4.31}$$

$$T_H = \left[\sum_{h=1}^{TH} \left(\sum_{i=1}^{TI} T_i \right)_I \right]_H \tag{4.32}$$

where

T_I = population aggregate travel demand by individual type

i = one individual of type I

I = individual type

TI = total number of individuals of a given type

T_H = population aggregate travel demand by household type

h = one household of type H

H = household type

TH = total number of households of a given household type

4.9 THE MODELLING SYSTEM

The individual travel demand modelling stages discussed earlier constitute the rural travel demand modelling system. The modelling system is composed of four modules. Each of these modules consists of processes and algorithms to complete the desired tasks for the module and collectively predict travel demand. Each module is a complete set of input-process-output operations designed to perform the tasks required by the module.

The four system modules are:

1. Database module
2. Input vectors module
3. Parameter estimation module
4. Results and aggregation module

The system modules and their tasks are overviewed in this section, and explained in detail in the following sections. Figure 4.13 gives the overall working of the modelling system as well as the details of input, processing and outputs carried out at each modular level.

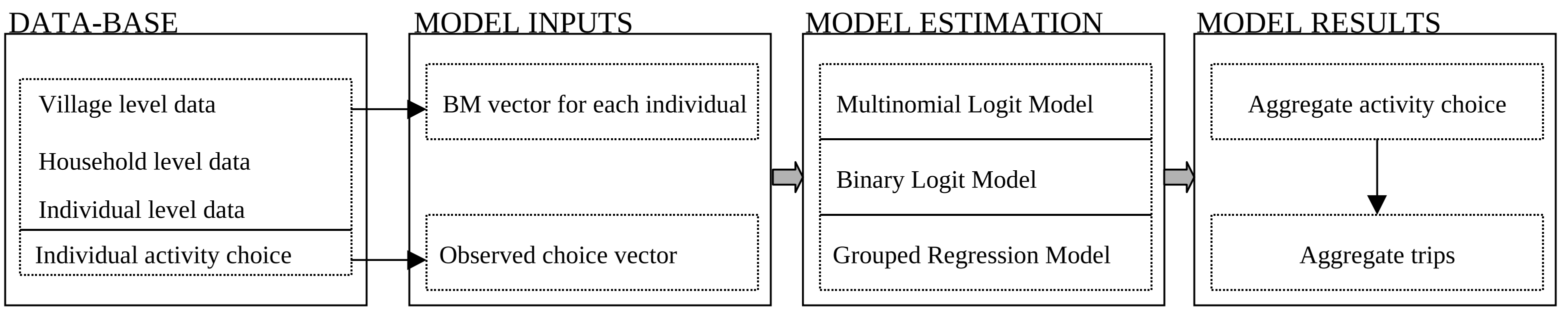


Figure 4.13 The modelling system

Database module

This module consists of a number of processes and algorithms developed to process the data obtained from the household survey. The data required may be obtained from various sources such as a purpose-designed survey or published data. The household level data collected from Pakistan, based on the experiment designed to study the rural activity-travel pattern, was the main source data. In addition, use was also made of the aggregate level published information, wherever needed.

The database module integrates the village-level, household-level, and individual-level information to provide the disaggregate data needed for modelling individual travel demand. The output is in the form of a database containing inputs for the various stages of the modelling system.

Input vectors module

The disaggregate data developed at the database stage is used to obtain vectors containing the explanatory variable as well as the dependant variable for each individual. The output from this module is a uniform input for the use by all alternative modelling forms.

Parameter estimation module

The inputs for this stage, the individual vectors, are used in specifying various model forms. The estimation of unknown model parameters is carried out for each model form. The output is the set of model parameters needed to estimate the individual probability of selection of various activities.

Results and aggregation module

Using the set of model parameters obtained from the parameter estimation module, this module first estimates the individual probabilities on the basis of the specifications of the three modelling forms. These individual probabilities are then aggregated, according to the concepts of the relevant model specifications, to obtain the aggregate choice for each activity considered. This aggregate activity choice is utilised to obtain the aggregate travel demand, as proposed in this research.

4.9.1 Database module

The database module prepares the source information needed by further stages of the modelling system. It takes the data collected at the household level survey and processes it in order to provide inputs for various stages of the modelling system. The levels of database development and the data processed at each level are:

Household level

Household type (LCS)

Household activity data (Market, Health, Leisure)

Individual level

Individual type (IDs)

Individual activity data (Work, School)

Village level

Access information for various activities (number of jobs, shops, etc.)

The algorithm for obtaining household type uses the household structure information as its input. It processes the data according to the definition of LCS using Figure 4.14. The output is household type in terms of household life cycle stage (LCS).

		Preschool Children	
		NO	YES
School Children	NO	1	2
	YES	3	4

Figure 4.14 Criteria for determination of Life Cycle Stage

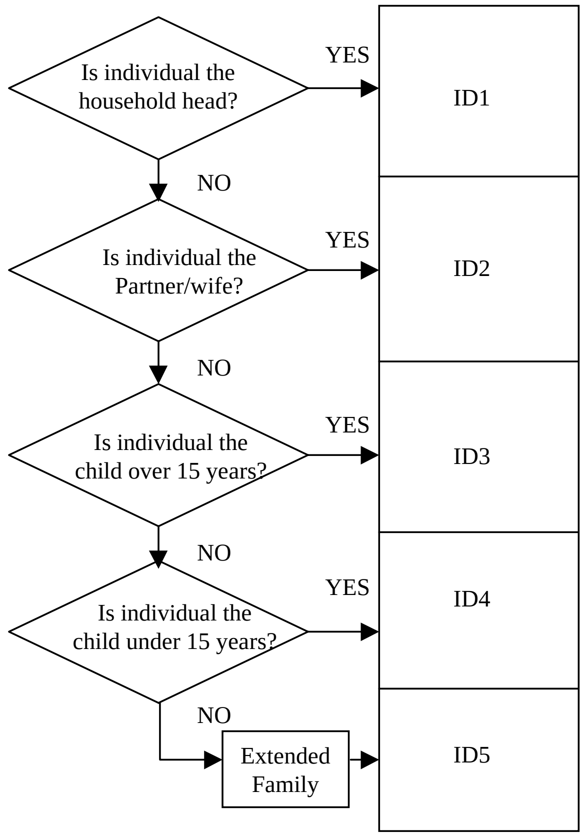


Figure 4.15 Algorithm used to obtain individual type

The algorithm for individual type uses the household structure and the individual identification data. This is applied to each individual of the household. The procedure uses the definition of the individual type, given earlier in this thesis. The output is the placement of the individual into one of the individual types, as illustrated in Figure 4.15.

4.9.2 Input vectors module

Two types of inputs are required for modelling the individual activity-travel behaviour. The input vectors module uses the database as input and processes it to provide the following outputs:

BM vector for each individual

Observed choice vector for each individual

In development of the two types of vectors the following activities are considered:

a) Work
b) School
c) Market
d) Health
e) Leisure

The BM vector and the Observed vector for each individual contains values for each of the activities considered.

4.9.2.1 BM values for each activity type

The accessibility benefits model BM is defined as the index measure of accessibility of the activity for the individual, as explained earlier. In this way, the BM acts as the explanatory variable for modelling individual travel behaviour. Therefore, the BM must contain all the factors influencing the accessibility of the activity for the individual. This section explains the development of the BM value for each activity type and uses them to explain the procedure to obtain a BM vector for each individual type.

There are three components of the BM model. These are the transportation, spatial, and temporal components. The variables in each of these components are provided with the data from various levels.

A discrete value of BM_j^i is computed for each individual *i* and each activity *j*. The village data provides the input for activity attraction parameters, *c* and ρ. The household data is used for the parameters important from the point of view of decisions taken at the household level. These parameters are *I*, ω , *h*, τ, and γ . The activity dependent parameters are α, *m*, *v* and *x*. Chapter7 and 8 provide the details of how these parameters are estimated using the field data collected.

4.9.2.2 BM vector for each individual

On the basis of the methodology for obtaining variables for the BM model, the complete individual level BM vector is formulated using the procedure as explained in Figure 4.16. The procedure takes the data from various levels and uses it in the BM ALGORITHM.

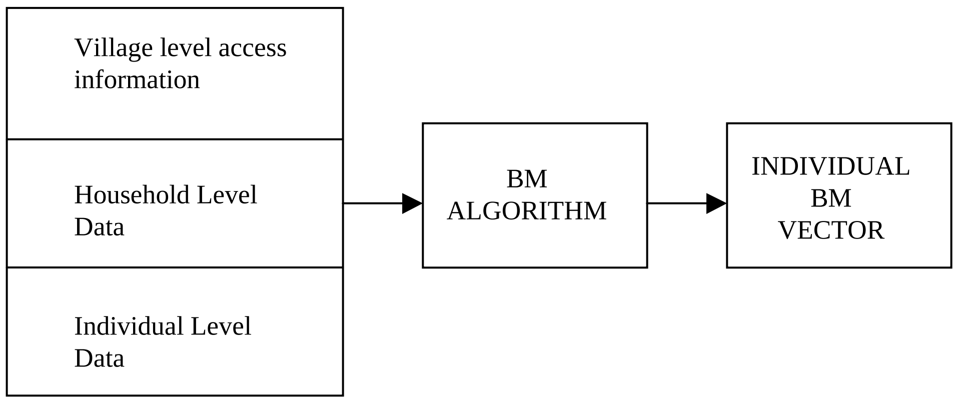


Figure 4.16 General procedure for BM estimation

The BM ALGORITHM is designed to consider the household-level role allocation for each individual type and uses that to formulate an individual BM vector. It is clear that the activities *Market*, *Health* and *Leisure* are regarded as household level activities. Therefore their information is collected at the household level. The activities *Work* and *School* are regarded as individual level activities, inferring their information from the activity data of the relevant individuals. The BM ALGORITHM, explained in Figure 4.17, incorporates the above theme, such that:

a) for the activities *Market*, *Work* and *School*, it takes into consideration whether or not the individual has performed the activity
b) for the activities, *Health* and *Leisure*, the algorithm considers all household individuals equally in terms of the activity participation.

The output of this process is a BM vector for each individual of the household.

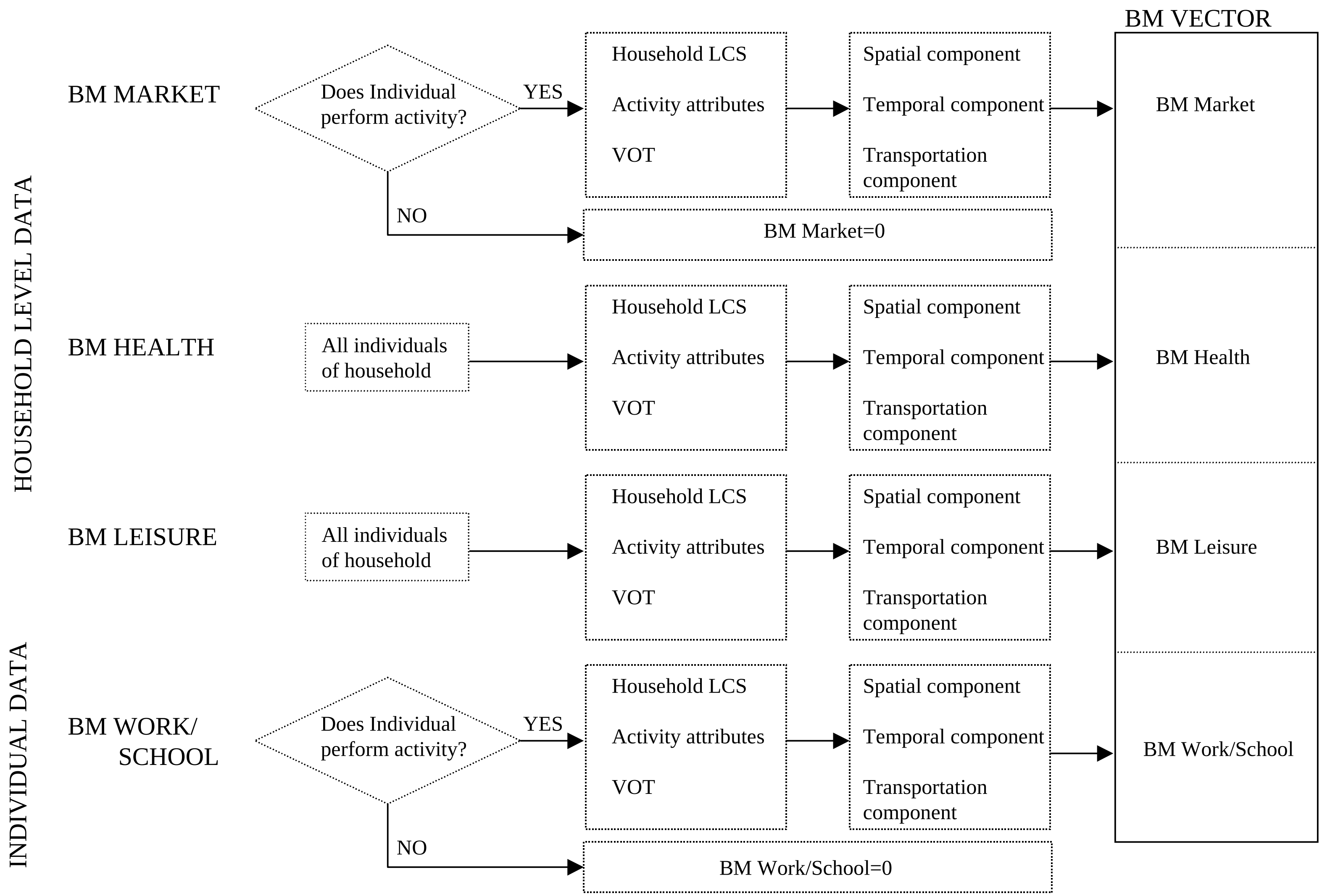


Figure 4.17 BM ALGORITHM

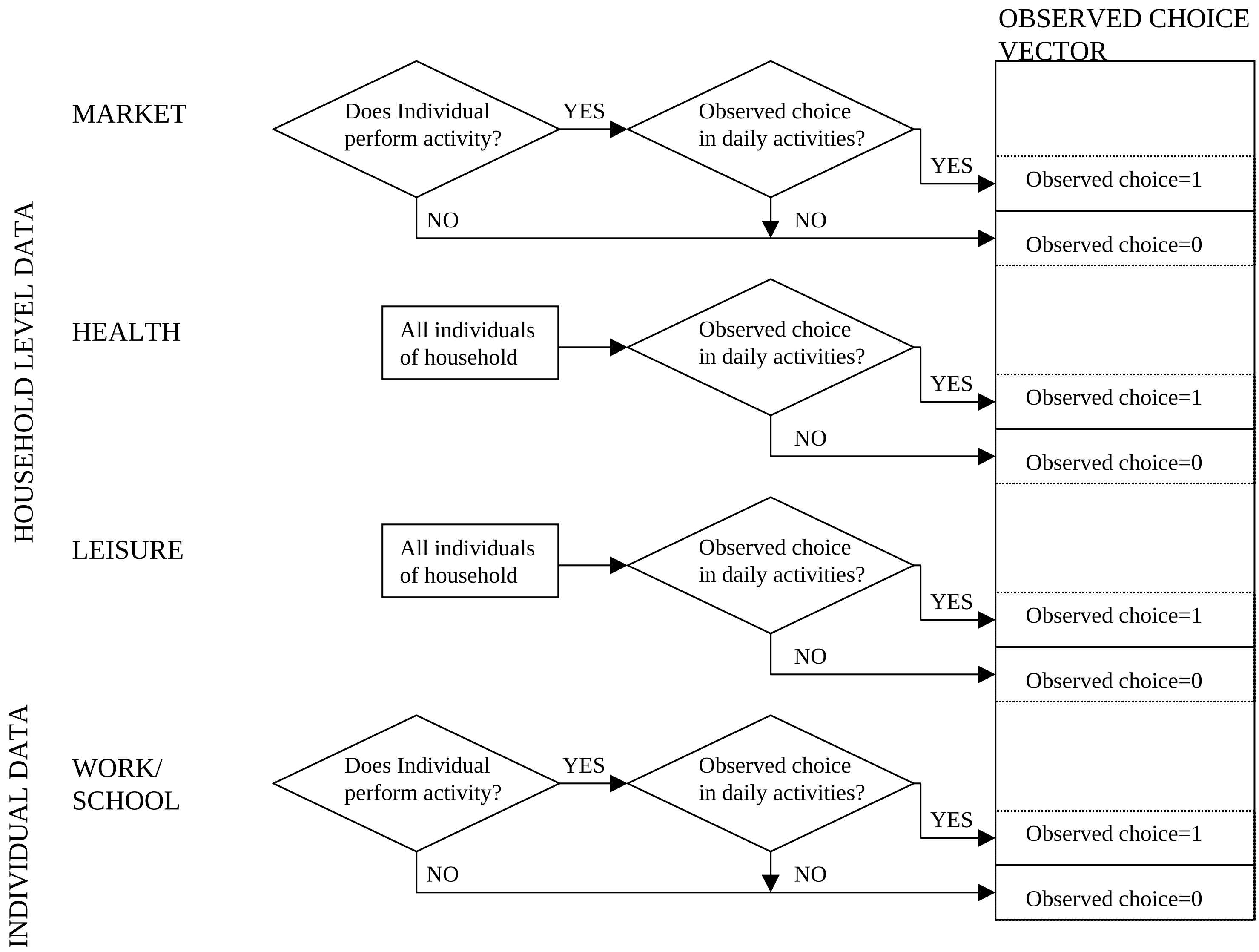


Figure 4.18 Development of Observed choice vector

4.9.2.3 Observed choice vector for each individual type

From the household and individual activity participation information it is possible to derive the individual's observed binary choice for any given activity. The development of an observed choice vector takes data from these two sources and uses the algorithm of Figure 4.18. The output is the binary choice vector for each individual in terms of 0 and 1 (1 for the activity being selected, 0 otherwise).

There are two stages to obtain the observed choice vector. Different sets of steps are carried out for the household activities (i.e. Market, Health and Leisure), and the individual activities (i.e. Work and School). This is achieved in two stages, as described in Figure 4.18:

a) the household activity data provides information as to whether the activity is carried out by the individual on the basis of his/her role allocation. This helps in narrowing down the choice of activities.
b) the individual daily activity diary provides the actual observed behaviour of the individual during a typical day.

4.9.3 Parameter estimation module

The choice of an activity by an individual is modelled as a discrete choice process. Three types of specifications have been developed for modelling individual decision-making within the discrete choice approach. Each of the modelling approaches require a set of tasks in order to estimate unknown model parameters based on an observed choice.

4.9.3.1 Multinomial logit model

The multinomial logit model considers all activities and is able to estimate the probability of selection of each activity by the individual. The inputs are the two vectors for each individual; the explanatory variable $(BM_i)_j^k$ and the observed choice vector $(Y_i)_j^k$. (Detailed explanation of $(Y_i)_j^k$ is given in chapter 7). The module uses an iterative procedure as explained in Figure 4.19

to estimate the model parameter β used in equation (7.8) in chapter 7. The output is the estimated probabilities of the selection of activities for each individual.

4.9.3.2 Binary logit model

The concept (and therefore the procedure) for binary logit model parameter estimation is similar to the multinomial logit model. The main difference is that the binary choice approach only allows one activity to be considered at a time. The choice is whether or not to select the activity. The algorithm estimates the model parameter β which maximises the likelihood function $L(\beta)$. The output is the probability of selection of the activity *j* by each individual *i*.

4.9.3.3 Grouped regression model

The grouped regression model considers one type of activity at a time. The *BM* vector for the activity considered is first grouped into N classes. Using the grouped *BM* vector, and the correspondingly grouped observed choice vector Y_j^q, the algorithm forms the linear regression model function L_q^*. The linear regression procedure is then applied to estimate model parameters β_1 and β_2.. Figure 4.21 explains this algorithm. Detailed development of the grouped regression models is presented in chapter 7.

4.9.4 Results and aggregation module

The individual probabilities of activity selection are estimated using model parameters obtained as input to this module. The model aggregation relates the travel frequency for a group of individuals using their probability to choose the activity. The aggregation procedure is based on the model definition and specification in each model form. The MNL model, therefore, provides aggregate demand for all activities. The other two model forms provide aggregate demand for the activity for which they are estimated.

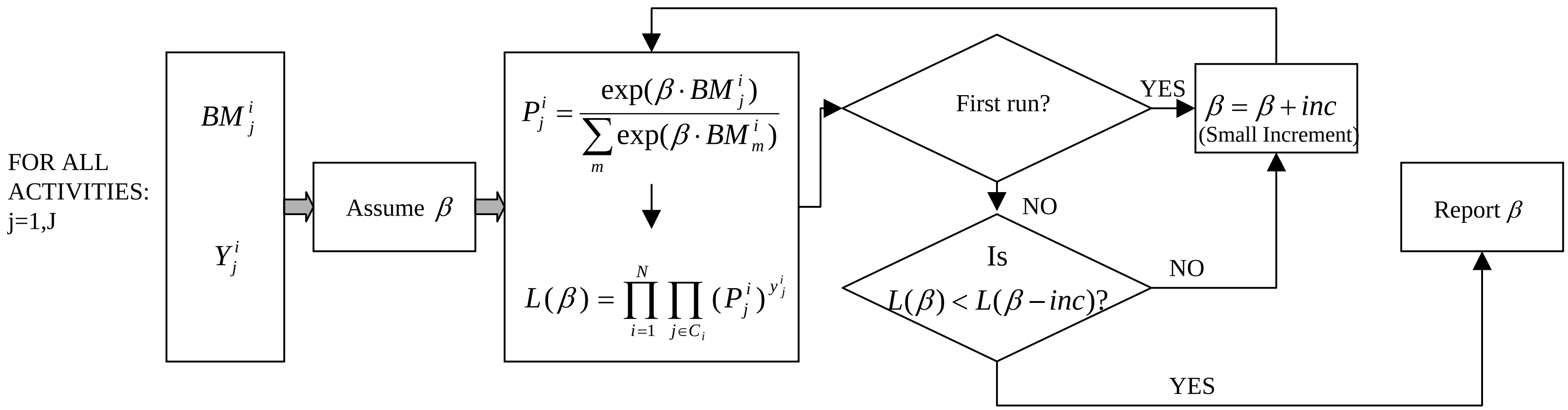


Figure 4.19 Estimation of model parameters -Multinomial logit model

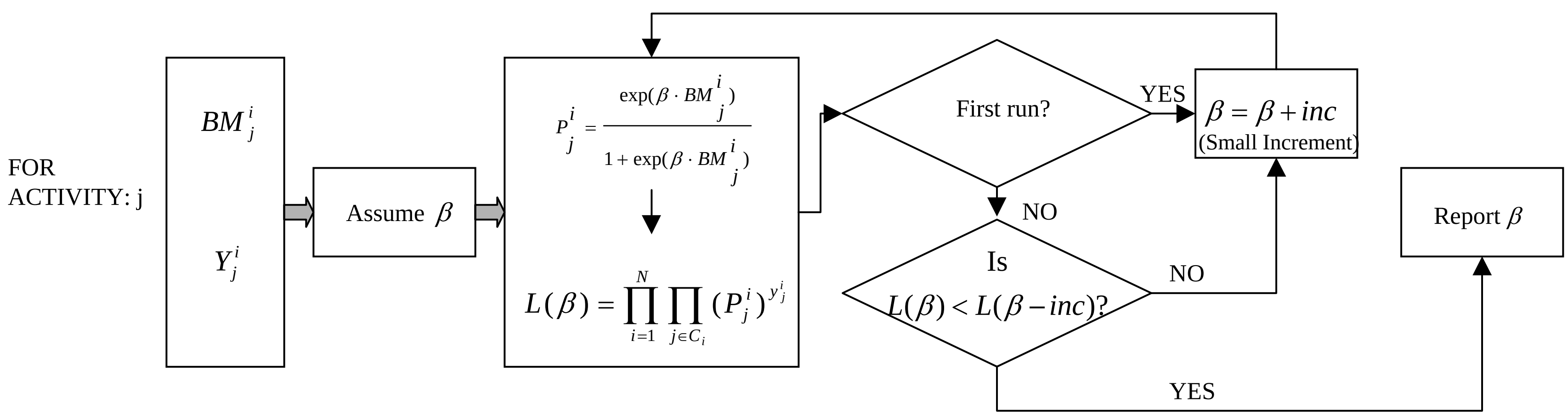


Figure 4.20 Estimation of model parameters -Binary logit model

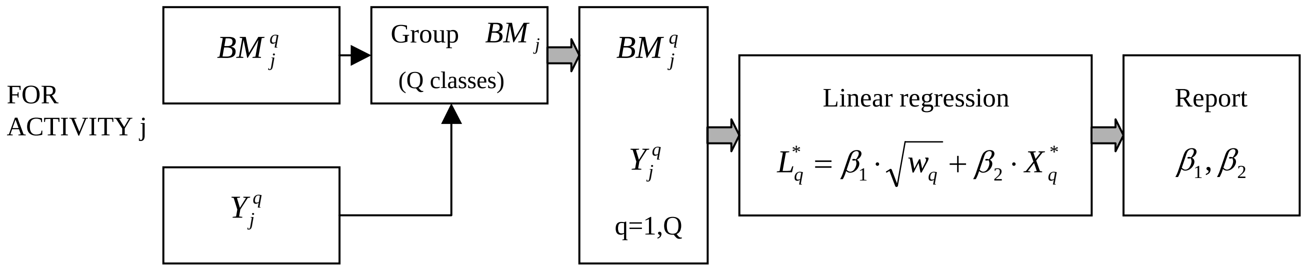


Figure 4.21 Estimation of model parameters-Grouped regression model

4.10 SUMMARY

This chapter defined the conceptual framework for modelling rural travel demand in developing countries. The underlying theme was to consider travel to activities fulfilling household needs.

The framework considered the household as the unit of analysis and the individual as the decision-maker. In doing so, it recognised household needs, but the demand for travel was a decision to be made by the individual. The framework combines the concepts of accessibility and activity-based methodologies in order to view rural travel as a result of participation in activities, where the activities available to the individual are based on his accessibility to these activities. The parameters defining each stage of the framework were explained to form the conceptual basis of the framework. Mathematical forms for the framework parameters were developed using behavioural assumptions applicable to rural travel analysis in developing countries.

An important consideration given in this research was the recognition of different time horizons for various decisions. This was defined using the concept of threshold level (TL). The conceptual formulation of functions representing TL was explained. The threshold frequency, defined on the basis of the number of times a household needs to travel for an activity fulfilling a household need, was able to incorporate longer term decisions in the daily travel demand modelling process.

A modelling system capable of carrying out all the tasks at various levels of the conceptual framework was developed. The modelling system is composed of four modules linked together to complete the entire process of modelling aggregate travel demand. The field survey provides the basic data. The database module processed the collected information. This provides information for the input vectors module, which forms the basis of the estimation of model parameters. Finally, the results and aggregation module predicts the aggregate travel demand according to the various discrete choice modelling approaches adopted.

CHAPTER 5

EXPERIMENT DESIGN AND DATA COLLECTION

5.1 INTRODUCTION

Chapter 4 described the framework for modelling rural travel demand and the variables used in the mathematical development. The next stage is to validate the modelling framework through field data from some selected rural locations. This chapter describes the design of experiments for field data collection.

Basic concepts of conducting social experiments are used to design the rural household survey. The characteristics of rural areas of Pakistan are described to form the basis of selection of locations for field data collection. The sampling parameters are estimated and methodology of their application is described. On the basis of this experiment design, a pilot survey was carried out from Hala, a rural location in Pakistan. The results of this pilot survey provided insight for the detailed field survey. This chapter further discusses the data collection methodology, along with the details of selected locations in Pakistan from where detailed data collection have been carried out.

5.2 DATA REQUIREMENTS

The rural travel demand-modelling framework developed in this study was based on a choice process. The choice of participation in an activity is defined as a function of the attributes of the individual and the household. The data collection process must therefore provide the following outputs:

a) household attributes
b) individual attributes
c) activity attributes
d) transportation system attributes

The data items collected were divided into two groups:

A. Socio-economic data

a. Household level data
   i. Household size (number of persons)
   ii. Number of persons employed
   iii. Household vehicle ownership (any transportation vehicle)

b. Individual level data
   i. Position (Head, partner, first child, second child, etc.)
   ii. Age
   iii. Occupation and Income

B. Activity participation data

a. Activity types
b. Locations
c. Timings
d. Duration
e. Frequency of travel

5.3 SURVEY DESIGN

The design of a social experiment is parallel to a laboratory experiment with the fundamental difference that the social experiment attempts to represent the design in a natural setting (Moser and Kalton 1971). This means that the basic concepts of treatment and subjects can be extended to the study of human behaviour.

5.3.1 Type of designs

Social experiments are broadly classified as either Descriptive or Explanatory. The descriptive experiments measure the population attributes without consideration of any causal relation between them. The correlation between various attributes may still be found. The explanatory experiments identify possible causal connection between variables. The data collection for the validation of the rural travel demand modelling framework requires consideration of both types of experiments. The descriptive experiments would be able to provide the population attributes for various variables and would identify possible correlation among them. The explanatory experiments will be able to identify causal links between various variables involved in the model development. The explanatory type would therefore serve most part of the data collection, which requires inference and validation of the choice process assumed in this research.

The objective of an explanatory type experiment design is to ensure study of all possible causal links between various variables and to minimise the amount and sources of error. Two types of designs of explanatory experiments are relevant in the context of this research; namely: Factorial design and Regression and multivariate design. The factorial design allows for dividing the population on the basis of various factors and studying the effects of each factor on the allocated group. This type of design, although comprehensive, requires a large data collection effort that was not feasible for the scope of the research. The concept of regression and multivariate type of design is that the effect of all possible variables is studied and statistical procedures are used to identify significant variables. This design was appropriate for the current research and was pursued further.

5.3.2 Variables and sources of information

The sources of information were identified for each item of data to be collected. Table 5.1 lists the sources providing data for various parameters of the demand model. For the household variables the source of information was the household head, while data on individual level variables were collected from each individual of the household. Some of the information was obtained from the village/community-headquarter to be used for statistical verification and testing.

5.3.3 Questionnaire design

On the basis of Table 5.1 the survey questionnaire consisted of three parts; namely, Household information, Individual information and Village information. The questionnaire is given in Appendix C to this thesis.

Table 5.1 Data items and sources of information

Model Parameters	Data Required	Data Source		
		Household	Individual	Village/ Community
Household Structure and Life Cycle	Size	✔		
	Income	✔		
	Vehicle Ownership	✔		
Household Activity, Choice Probabilities Threshold levels	Activity Types	✔		
	Activity Locations			✔
	Activity Timings			✔
Household Linkage and Roles	Individual Types		✔	
	Age, Sex, Occupation		✔	

5.4 SELECTION OF SURVEY AREAS

It is important to understand the overall geographical and demographic set-up of the target population in order to plan an adequate data collection exercise. The proposed modelling framework needs to be verified using field data from selected locations of Pakistan. In this context the following points were considered important in order to design a data collection exercise (Hershfield et al 1983, Czaja 1996), applicable for rural areas of Pakistan:

a) the administrative spatial set up of the target population: in order to construct sampling frames
b) the cultural norms of the population: in order to construct data questionnaires and estimate response rates (and specially the non-response rates).

The main aim of this research was to study travel behaviour of rural populations. For this purpose the selected location must be classified as representative of rural areas in Pakistan. Pakistan is a federation of four provinces, namely; Punjab, Sindh, Balochistan and the North West Frontier Province (NWFP). In addition there are certain tribal areas directly under the administrative control of the federal government (see Figure A-1 in Appendix A). The Table 5.2 shows that overall, 72% of the population lived in rural areas.

Table 5.2 Population and densities of provinces of Pakistan

PROVINCES	**POPULATION (millions)**			**RURAL AREAS**	**AREA**	**DENSITY**
	Total	*Urban*	*Rural*		*(sq.km)*	*(pop/sq.km)*
Punjab	47.2	13	34.2	72%	205	230
Sindh	19	8.2	10.7	56%	140	136
NWFP	11.1	1.7	9.4	85%	74	150
Balochistan	4.3	0.7	3.6	84%	347	12
Total (Including tribal areas)	84.2	23.8	60.4	72%	796	106

Source: Federal Bureau of Statistics,Pakistan (1995)

For the individual provinces, the percentage rural population ranged from the highest in NWFP (85%) and the lowest in Sindh (56%). The province of Balochistan (84%) is close to the NWFP. Comparing the densities of the two high rural concentration provinces (NWFP and Balochistan) the province of Balochistan was selected for the study because it possesses disperse rural settlements (lowest density). Another province selected for study was Sindh having lowest percentage of rural population.

Regarding the population settlements in rural areas of Pakistan, generally a large number of villages are formed around, or served by, a single administrative unit. This is usually the district headquarter or the market centre. This central place generally contains the market, major hospitals, high schools and other major government services which serve the component/surrounding villages, (see also Howe and Tennant 1977 in the case of Kenya). The distance of these villages from the market centre may vary between a couple of kilometres to 10-15 km. This issue was incorporated in the design of the experiment by considering 'cluster sampling' as described later in the chapter.

5.5 SAMPLE DESIGN

Within the framework of a given survey design, the sample design is carried out to ensure the selection of appropriate subjects for study. An ideal sample could be defined as one having the same distribution of attributes as the population from which it is drawn (Fink 1995). This can be achieved, to a great extent, by randomisation.

Three types of sample designs are applicable to random sample surveys:

a) completely random design
b) stratified design
c) cluster design

It is generally understood that the three types vary in their cost effectiveness as well as the accuracy of estimates. The random design is the most straightforward and the cluster design is the most complex of the three. The cluster design is believed to be the most efficient design (Ben-Akiva and Lerman 1985, Stopher and Meyburg 1979). The cost effectiveness of any design should be weighed against the availability of resources for data collection and analysis.

5.5.1 Stratified and cluster designs

Both the stratified and cluster design methods require dividing the overall population into subgroups. In the case of simple stratified sampling, the stratification of the population is done prior to the sampling stage. These strata represent homogeneous units of population (for example men and women). The random samples are drawn from each stratum. Random sampling is therefore performed from a subset of the population.

The cluster method, on the other hand, requires grouping of sampling units on some spatial or geographical basis (for example housing blocks). Random sampling of these clusters is performed at the first stage of sampling (for example choosing number of blocks). The sampling units are drawn (at random) from these chosen clusters (Stopher and Meyburg 1979).

The cluster method of design was adopted in this research as it identified the spatial dispersion of population more effectively. As described earlier, a district level administration is usually the centre of all major activities (for example market, high schools, etc) and fulfils the requirements of several villages in the adjoining areas, the areas under its administrative control. Moreover, these villages being culturally and geographically homogeneous units, serve an adequate setting to be considered as clusters. In the demand model framework, for which the data were required, the village-based clustering helped in deducing village level problems and thus testing policies and model behaviour accordingly.

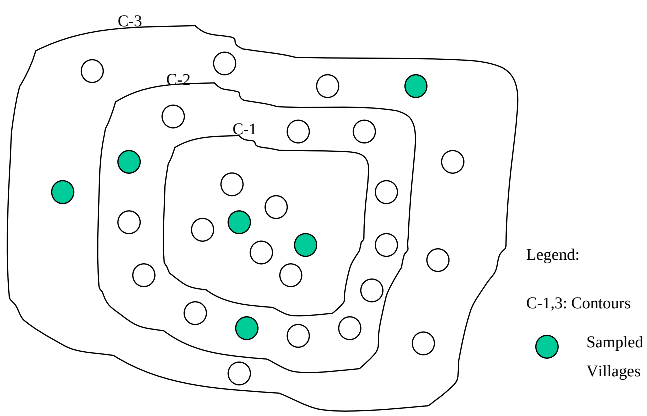


Figure 5.1 Cluster Sampling

In survey design for the present research the clusters were formed on the basis of ‘distance (or time) contours’, where the distance (or time) is measured from the village to the market centre (the district headquarter). These contours were of the form: <4km, 4-8km, and >8km from the market centre. From each contour interval villages were sampled at random to constitute the first level stratum. The sampling of households within the selected villages was done on a random selection basis. The hierarchy of the clustering concept is shown in Figure 5.1.

5.5.2 Sample size

5.5.2.1 Efficiency Criteria

The classical efficiency criterion is defined as minimising variance subject to cost constraints (Ben-Akiva and Lerman 1985). It is important here to have a knowledge of the weighting to be assigned to each stratum in order to maintain the requirement of the data being unbiased (Deaton 1997).

5.5.2.2 Optimum Sample Size

The sample size estimation for a social research problem was found using a method proposed by Moser and Kalton (1971):

$$s.e.(p_{srs}) = \sqrt{\frac{p(1-p)}{n}} \tag{5.1}$$

where

s.e.(p_{srs})= standard error of a proportion *p* based on simple random sampling (*srs*)

p = proportion of population having attributes (for example membership of low income group)

n = sample size

The relationship can be extended for stratified sample:

$$s.e.(p_{prop}) = \sqrt{\frac{\sum n_i p_i (1-p_i)}{n^2}} \tag{5.2}$$

where

s.e.(p_{prop}) = standard error of a proportion *p* in a proportionate stratified sample

n_i = sample size in i^{th} stratum

p_i = proportion of the sample in the i^{th} stratum possessing the attribute

n = total sample size

The above formula for the stratified sampling was extended for the clustered sampling by considering that the summation of samples over all clusters formed the total population, i.e.:

$$n = \sum_{i=1}^{N} n_i \tag{5.3}$$

where

N = total number of clusters

Table 5.3 Sample size calculation

SAMPLING PARAMETERS		PARAMETER ESTIMATES	
Number of clusters	N=	5	clusters
Number of households per cluster	n_i=	n/5	
Proportion of sample in cluster-1	p_1=	10	%
Proportion of sample in cluster-2	p_2=	20	%
Proportion of sample in cluster-3	p_3=	30	%
Proportion of sample in cluster-4	p4=	40	%
Proportion of sample in cluster-5	p5=	50	%
Standard error	s.e=	5	
Total numberof households	n=	76	
Households per cluster	n_i=	15	
Non-response error=		10	%
Households per cluster=		17	

Table 5.3 shows the sample size calculation based on the following assumptions:

a) equal number of households to be selected from each cluster

b) the geographic set-up of the clusters is accounted for by taking varying values for p_i

5.5.2.3 Application of sample size

The cluster sampling approach described earlier required a three-stage procedure. At the first stage all the villages in the given location were divided into the time or distance contours based on the average travel time or average distance from the market centre, respectively. In the second stage one village was selected at random from each contour interval. The third and final stage was selection of sampled households from each village. Each cluster/village provided 20 households giving 100 households in total.

5.5.3 Sampling frame

All villages in a given contour interval constituted the sampling frame for selection of villages from the contour interval. This forms a cluster. For the second stage, the sampling of households from the villages, a list of all households was used as the sampling frame. At each village headquarter there is usually available a register containing information about all the households in the village. All households were listed in recently compiled electoral listings. Every home has been allotted census numbering according to 1997 census. This formed the sampling frame for the village and 20 households were selected at random from this list.

The following concept of random systematic sampling has been used for the selection of households:

$$HH_i = X + \left(\frac{T}{20}\right) \cdot (i-1); \; i=1,20 \qquad (5.4)$$

where:

HH_i = identification of the household sampled

X = random number chosen for the first household ($X<T/20$)

T = total number of households in the survey area

As X is a random number, using Equation (5.4) ensures the overall selection of households within a village as a random process.

5.6 DATA COLLECTION FRAMEWORK

Using the data requirements identified earlier in this chapter, a data collection format is developed which defines all the variables and their characteristics, which formed the basis of the data collection exercise.

5.6.1 Variable types

In order to design the questionnaire for the field data collection the first stage is to define the variable types and, where appropriate, their response levels. The Table 5.4 presents this set up. Questionnaires used for field data collection are given in Appendix C.

Table 5.4 Variables used at various levels

SOURCE OF DATA COLLECTION	VARIABLE NAME	VARIABLE TYPE	POSSIBLE LEVELS AND RANGES
Household	Identification	Nominal	C-V-H *
	Household Size	Numeric	Actual
	No. of Adults	Numeric	Actual
	No. of Children	Numeric	Actual
	Vehicle Ownership	Ordinal	0=no,1=MT,2=NMT
Individual	Status	Ordinal	1=Head, 2=Spouse, 3=Adult, 4=Child
	Age	Numeric	Actual
	Sex	Nominal	M/F
	Employment	Nominal	Y/N
	Monthly Income	Numeric	Actual

*[ClusterNumber.-VillageNumber.-HouseholdNumber]

5.6.2 Survey management

The overall task of carrying out the field survey was divided into the following sub-tasks:

1) Pilot survey
2) Analysis of the Pilot survey
3) Village level information from village headquarter / municipality

4) Detailed filed survey of the households

In the typical conditions prevailing in Pakistan, it may be important that, as far as possible, the household surveys must not be carried out on Fridays, Saturdays and Mondays due to the following reasons:

a) avoiding Fridays for the reason of inconvenience to the survey team (non-availability of respondents; as Friday is considered as a religious day and after the mid-day prayer most social engagements are carried out) and
b) avoiding Mondays and Saturdays for inadequate reporting of previous day activities (because of holiday on Sunday both days would be unfeasible)

5.7 PILOT SURVEY

A pilot survey was carried out in Hala, which is situated in the Sindh province of Pakistan. The purpose of the pilot survey was to test the survey methodology and the questionnaire designed for this research. A group of teachers of the Sindh University, Pakistan formed the survey team to carry out the survey. As seen in the maps of the area (Figures A-2 in Appendix-A), the head quarter of the district Hala was considered as the market centre. On the basis of radial distances from Hala the area was divided into three clusters, as follows:

Cluster-1: within 4 km from Hala

Cluster-2: within 4-8 km from Hala

Cluster-3: beyond 12 km from Hala

Two villages were randomly selected from each cluster giving a total of six villages. The pilot survey was carried out in six households, one from each village selected. The details of the villages, clusters and households are given in Table 5.5.

Table 5.5 Overall statistics of the pilot survey

CLUSTER NUMBER	VILLAGE NAME	TOTAL POPULATION	TOTAL HOUSEHOLDS	TOTAL AREA *(sq km)*
1	Hala Old	7500	3000	0.25
1	Sandhan	4000	250	0.562
2	Khanoth	1500	115	5.5
2	Dabhri (Malok Dakri)	600	100	0.25
3	Khando	4600	300	0.25
3	Haji H Gohatti Potta	5000	500	0.25

It can be seen from Table 5.5 that the pilot survey contains a range of the population settlement areas, from very low household size, i.e. about 2.5 persons per households in Hala Old to about 16 in Sandhan and approximately 15 in Khando.

5.7.1 Data analysis

The main objectives of the data analysis were:

1. to check the trend of various information obtained from data for their reliability and consistency
2. to determine the capability of the questionnaire in providing inputs for model parameters
3. to recommend improvements in survey methodology and the questionnaire.

5.7.1.1 Household identification and LCS

The six households selected for the survey were given identification numbers and their general data is summarised in Table 5.6. The calculation for life cycle stage (LCS) was based on Figure 4.14.

Table 5.6 Household identification

HHNo	CH>15	CH<15	LCS	NumChild
1	0	1	2	1
2	0	5	2	5
3	4	2	4	6
4	0	0	1	0
5	0	3	2	3
6	0	4	2	4

5.7.1.2 Household Activities

Data was collected at two levels of activity participation:

a) household level: data on overall household activities was obtained from the household head

b) individual level: data was collected from each individual about their participation in various household activities.

A check on the household activity data was carried out using the household activity information. Table 5.7 summarises the average distance for the activities by clusters. As higher cluster numbers represent increasing radial distances from the market centre (Hala), the distance to the facilities like Market and Hospital (situated in Hala) are also reported to be proportionally increasing.

Table 5.7 Average distance (in km) of activity-locations by clusters

ACTIVITY	CLUSTERS			
	1	2	3	ALL CLUSTERS
WATER COLLECTION	0	0	0	0
FIREWOOD COLLECTION	1.10	1.25	0.60	0.98
HOSPITAL	1.10	6.00	10.00	4.55
LABOUR	1.35	5.50	25.00	10.62
MARKET	1.35	2.75	15.00	6.37
SCHOOL	1.10	0	1.55	1.33
SOCIAL	51.50	37.50	35.00	41.33
ALL ACTIVITIES	8.22	9.09	12.64	9.98

In Figure 5.2, the speed associated with various activities is summarised, computed from travel time and the distance to the activity. The lowest speeds were found for firewood collection as it is generally carried out on foot. The highest speeds are found for the activity: market, i.e. travel for buying or selling goods. The higher speeds in the villages 5 and 6 (cluster 3) were due to the use of higher speed modes, apparently due to their long distances from the market centre.

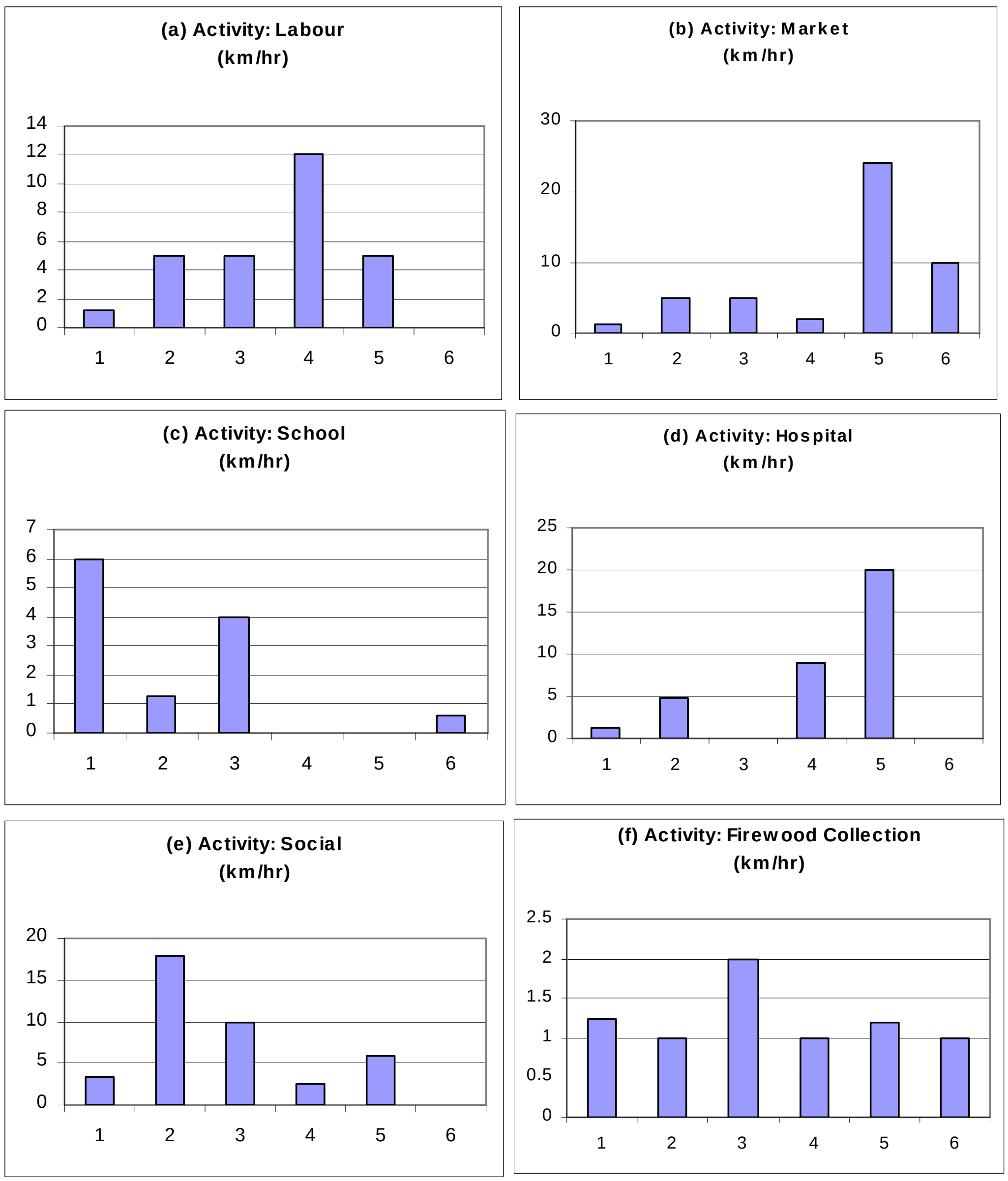


Figure 5.2 Speed for various household activities

Individual Activities

The data for individual activity participation was obtained from all individuals of the households interviewed. The adults reported data for infants.

5.7.2 Activity diary

Another aspect of the individual survey was to collect daily activity participation data for each individual of the household. The activity diary was used for this purpose. Data from activity diary were used to formulate Figure 5.3, which shows number of hours of involvement in various activities by individuals of a typical household. Three types of individuals were considered. Daily time involvement was grouped into three classes, namely, home activities, non-home activities and travel. The vertical axis shows number of half-hour time slots, so 32 means total time duration of 16 hours (0600 to 2200 hours). It is logical that the Household Head spends the least amount of time at home (about 5.5 hours) and the highest amount in non-home activities (about 10 hours). Another point to note is that the Household Head travels about two hours (4 half-hour slots) during each typical day.

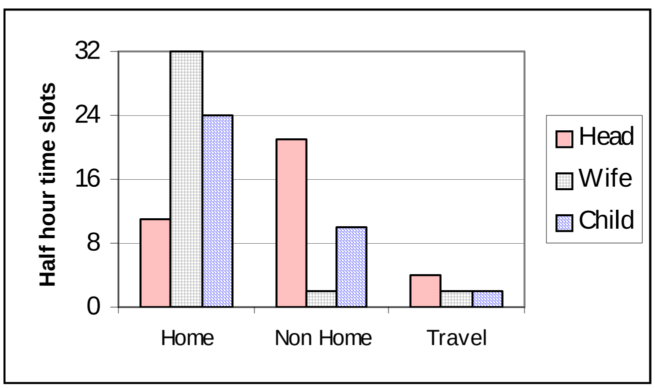


Figure 5.3 Activity participation by individual types

5.7.3 Improvement in methodology

Although six households may be considered as a small sample, the justification of the pilot survey can be given in the form of its macro-level use, as follows:

a) three villages were selected at variable distances from Hala, providing the variability of cultural and response attitudes
b) two households in each cluster were selected, which highlighted the shortcomings to be improved in survey questionnaire
c) the pilot survey constituted about 6% of the overall sample size estimated for the detailed survey (100 households)
d) the formation of clusters was tested as it formed the basis of the experiment design

The pilot survey provided insight into the field survey problems. The methodology and questionnaire were able to provide data for model verification. There were certain areas in the questionnaire, which needed improvement in order to cover the full variation reported to exist. The definition of clusters was revised in order to cover the geographical distribution of all the areas adjoining the market centre. This resulted in the following improvements:

- Redefining clusters on the basis of travel distance, not the radial distance from market centre
- Increased number of clusters and reduced number of villages form each cluster (five clusters and one village from each cluster)
- Addition of more household activities and redefining some of the existing activities
- Inclusion of more types of employment
- Use of open form (without fixed time slots) for the travel diary

5.8 DETAILED FIELD SURVEY

The detailed field survey was carried out from villages at two locations in Pakistan, namely, Hala in Sindh province and Khuzdar in Balochistan Province. The questionnaire used is presented in Appendix C.

It was evident from the pilot survey that Hala acts as the Market centre. Five clusters were defined on the basis of travel distance from Hala. One village was selected from each cluster. Twenty households were selected, at random, from each village.

As Khuzdar is also a market centre, four villages were selected which had their economies dependent on Khuzdar. The lesser number of villages was the result of overall lesser number of villages served by the market centre, Khuzdar.

5.9 SUMMARY

This chapter defined the experiment design for validation of the modelling framework developed in the study. The experiment design was based on the exploratory survey techniques suitable for collection of social data. A pilot survey provided insight for the improvement of survey design and methodology. The detailed data collection was subsequently carried out as the second phase of the data collection task. Five clusters from Hala, Sindh and four clusters from Khuzdar, Balochistan were defined. From each cluster one village was selected, giving a total of nine villages between the two locations. The detailed survey was used to formulate a database which was used in further development of this research. The next chapter analyses the data obtained from the detailed survey.

CHAPTER 6

RURAL ACTIVITY-TRAVEL PATTERN ANALYSIS

6.1 INTRODUCTION

The research presented in this thesis was based on a conceptual framework which considered that individual activity-travel patterns in rural areas of developing countries are affected by household access needs. To this effect, household level surveys were carried out from representative rural locations in Pakistan. This chapter analyses the rural activity-travel patterns, based on the survey data.

Three levels of analysis have been carried out, i.e.:
a) village accessibility analysis
b) analysis of household access needs and resulting activity demands
c) analysis of activity-travel patterns of household individuals.

The analysis of village accessibility provides information on overall access problems which affect all the households in the area. The analysis at household level provides the answer to the question as to how various individual types effect the household access needs and the role of household individuals in performing activities fulfilling these needs. The individual level analysis provides information on various constraints binding upon individuals and the resulting accessibility of the activities. It also helps in studying cultural and gender issues which are considered important determinants of activity-travel patterns in rural areas of developing countries.

The activity-travel patterns analysis presented in this chapter had two objectives:
a) to validate concepts on which the travel demand model framework (Chapter 4) was developed
b) to provide inputs for the development of the travel demand model presented in the next chapters.

6.2 DATA ANALYSIS FRAMEWORK

This research aims to develop a rural travel demand model. Travel is considered as a derived demand, a manifestation of participation in activities in order to fulfil household needs. This considers accessibility as the basis of defining availability of activities. The framework for modelling rural travel demand in developing countries, (described in chapter 4), assumes the following:

- households have basic, economic and social needs (called primary, secondary and tertiary needs) depending on their Life Cycle Stage
- these needs are fulfilled by means of activities, some of which require travel in order to be reached
- the role of an individual in a household transforms these needs to household individuals
- the transportation, temporal and spatial constraints binding upon individuals define the Time-Space Prism (TSP) of the individuals (described in Chapter 3)
- the individual TSP is an indication of accessibility of these activities to the individual
- the individuals select the activities within their TSP according to certain choice mechanisms

The analysis of rural activity-travel behaviour has been carried out within the framework developed in this research. The results of this analysis should provide answers to the following questions:

- how does household interaction affect the individual activity participation?
- what factors define the boundaries of an individual's time-space prism?
- how do people select the activities which are within their time-space prism?

Providing answers to the above questions was the main objective of the household level survey carried out in selected rural areas of Pakistan. Three levels of accessibility-activity were investigated:

- Accessibility of various activities at village level

- household role allocation and the resulting activity-travel pattern of each member of the household
- factors affecting individual accessibility

6.3 DESCRIPTION OF THE STUDY AREAS

Household level data was collected from two rural locations in Pakistan. These rural locations were selected from Hala, Sindh and Khuzdar, Balochistan. Sindh province is situated in the south-most part of Pakistan. Its rural areas are predominantly agriculture based. Balochistan province is in the south-western part of Pakistan. The economies of its rural populations are predominantly business and services based. The general description of the study areas covered within the two provinces, is presented in this section. Analysis of data obtained is carried out in the subsequent sections.

6.3.1 Hala, Sindh Province

Hala is one of the five Talukas of Hyderabad district (Sindh Bureau of Statistics 1997). A Taluka may be considered as equivalent to a county in the UK. Hala is about 130 km from Karachi, the major port and the centre of major economic activities. The administrative hierarchy (top to bottom) for Sindh is as follows:

Metropolitan city → *District* → *Taluka* → *Village*

A village is the lowest administration unit of a settlement. It could be composed of as few as 10-20 and as many as 1000 homes. Larger villages contain union councils, which are under direct control of districts.

Hala contains 261 villages each with a population of 200 or more (Bureau of statistics, 1999, Sindh Regional Plan Organisation 1995). Arranging villages according to their population would give the following picture:

Villages with population 1000 and above = 77

Villages with population between 500 and 999 = 56

Villages with population between 200 to 499 = 128

According to minimum national standards, each village with a population of above 500 people should be provided with all basic services (for example a school, dispensary, etc.). This means that there is a large number of villages in Hala which would not have any basic services according to the minimum national standards, and the people would need to travel outside their village in order to access such services.

Table 6.1 Number of villages in Hala with basic services and facilities

VILLAGE ACCESSIBILITY PARAMETERS	NUMBER	%
Total villages	261	
High school	9	3%
Rural health centre	1	0%
Basic health unit	12	5%
Dispensary/Clinic	21	8%
Connection to bus stop	44	17%
Connection to engineered road	151	58%
In home water supply	20	8%
Electricity	177	68%

The data in Table 6.1 can be used, on an aggregate level, to define accessibility of some of the basic and economic needs of rural populations. It can therefore be used to develop village level accessibility indicators. The information is presented graphically in Figure 6.1. The data show that electricity and connection to engineered roads are two facilities available to more than half of the villages, while health services are least accessible to a large number of villages in Hala.

6.3.2 Khuzdar, Balochistan Province

Khuzdar is an important municipality of the southwestern province Balochistan. It was declared a district in 1974 (Bureau of statistics 1997). Located on the main highway connecting two commercial centres, Karachi and Quetta, Khuzdar has a key economic position. Being at the border of Sindh province it inherits the cultural attributes of both provinces. Most areas of Khuzdar district are not connected by an all-weather road.

The district of Khuzdar contains 19 villages having a total population of about 4,300. On average therefore, a village would contain about 200 people. According to the minimum national standard, as described in preceding paragraphs, the villages in Khuzdar are far from the 500 person mark required in order to receive the basic services and facilities. This factor is evident from the data in Table 6.2, which shows the availability of basic services to the population in Khuzdar as a whole.

Table 6.2 Number of villages in Khuzdar with basic services and facilities

VILLAGE ACCESSIBILITY PARAMETERS	NUMBER	%
Total villages	19	
High school for boys	14	74%
High school for girls	1	5%
Hospital	1	5%
Basic health unit	10	53%
In home water supply	0	0%
Connection to engineered road	5	26%
Electricity	5	26%

According to the data presented in Table 6.2, except for high school for boys and the basic heath unit, all the basic services have very low accessibility for most villages of Khuzdar. In-home water supply, connection to engineered roads and electricity are the main areas of household problems. One example may explain how the availability of basic services shapes the daily activity-travel pattern. It was stated by the local residents that because of the lack of electricity in the area, the households use primitive means of lighting (lantern etc.). Furthermore, they start their work early in the morning and try to be at home before dark.

6.3.3 Village accessibility

The study of various services and facilities fulfilling household needs is a major component of the rural accessibility planning. Table 6.1 and Table 6.2, developed from published information, summarise the availability of services and facilities at village level. Figure 6.1 summarises data from these tables in order to compare the access characteristics of the two locations discussed (Hala and Khuzdar). The main access problems in Hala are education and health services. In the case of Khuzdar, water supply, health and connection to engineered roads are the main areas causing access problems. The following sections carry out detailed analysis of household activity-travel patterns.

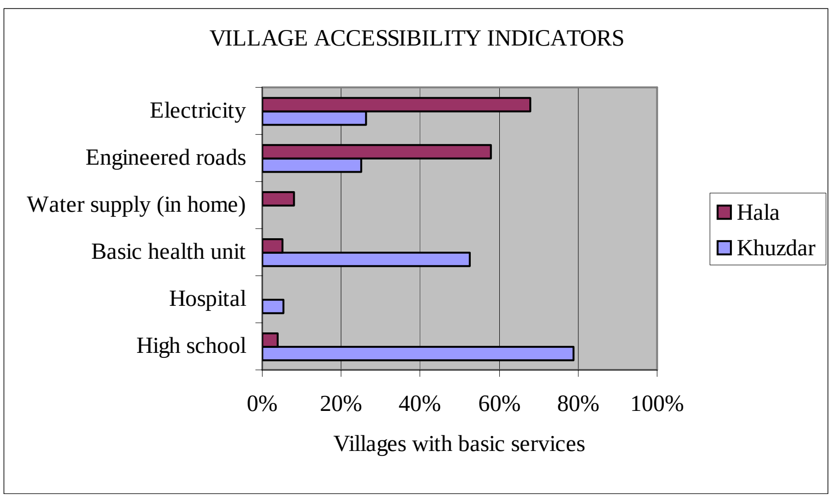


Figure 6.1 Comparison of various services and facilities

6.4 CHARACTERISTICS OF THE SAMPLED POPULATION

6.4.1 Overall statistics

In Hala, the household data was collected from five clusters, each cluster being a village within the overall jurisdiction of the district of Hala. Table 6.3 summarises the general characteristics of villages where household surveys were carried out.

Table 6.3 Sampled population (Hala)

CLUSTER	VILLAGE	No.Of HOUSEHOLDS	No.Of INDIVIDUALS	MALE	FEMALE	INDIV. PER HH
1	Hala Old	20	93	52	41	4.7
2	Khandu	20	69	34	35	3.5
3	Saeed Khan Leghari	20	94	55	39	4.7
4	Mansoora	20	70	40	30	3.5
5	Wangheri	20	47	23	24	2.4
	Total/Average	100	373	204	169	3.7

From Khuzdar, four clusters were selected. Table 6.4 provides a summary of population characteristics for the sampled villages from Khuzdar.

Table 6.4 Sampled population (Khuzdar)

CLUSTER	VILLAGE	No.Of HOUSEHOLDS	No.Of INDIVIDUALS	MALE	FEMALE	INDIV. PER HH
1	Sunny	11	67	42	25	6.1
2	Kanak	23	138	82	56	6.0
3	Jafarabad	9	74	37	37	8.2
4	Kahairawah	19	116	62	54	6.1
	Total/Average	62	395	223	172	6.4

At the outset, it can be seen that Khuzdar has a larger average household size than Hala. The sex distribution also varies between the two locations. Recognising that each individual provides one data point for the disaggregate models developed in this research, it may be seen that the difference between total data points provided by the two locations (Hala and Khuzdar) was of the order of 5% (373 versus 395). Furthermore, the difference in data points within each sex category (male and female) was of the order of 9% (204 versus 223) and 2% (169 versus 172), respectively.

6.4.2 Household income

Household income is considered to be an important determinant of household accessibility to various activities. Descriptive statistics for household income for the two locations are given in Table 6.5. The average household income for Hala was found to be about Rs.4700 per month, which is considered a moderate income level for Pakistan. The standard deviation implies that the lower income households earn about Rs.2500 per month, which is considered to be below the poverty line. Similar analysis of the household income in Khuzdar, showed that although the mean income of Khuzdar is higher than that of Hala, the lower income households have income at about the same levels as Hala. On an overall basis household income in Khuzdar, therefore, has a wider variation within the population.

Table 6.5 Analysis of household income

LOCATION	INCOME (Rs.)			
	Minimum	Maximum	Mean	Std Deviation
Hala	450	15000	4700	2354
Khuzdar	1500	22000	4856	3965

6.4.3 Distribution of households into Life Cycle Stages

In order to study how the presence of children affects the household accessibility, the households were divided into Life Cycle Stages (LCS). The household structure described in Chapter 4, along with the definition of LCS, was used for this purpose. For completeness the definition of LCS are repeated here:

- LCS-1: Households without children
- LCS-2: Households with pre-school children only
- LCS-3: Household with school children only
- LCS-4: Households with both pre-school and school children

Figure 6.2 summarises this information for both Hala and Khuzdar. The graphs show the distribution of LCS within the households. The LCS concept enables demographic characteristics to be included in the analysis of rural travel demand. The sampled population from both locations (Hala and Khuzdar) has a large number of households in LCS2, i.e. households having younger children only. There are apparently two reasons for this. Firstly, the typical setting of the villages within the overall geographic location of each province is an important determinant of rural demographic distribution of population. Hala being very close to a major city, Hyderabad, has higher chances of migration of grown up children as compared to Khuzdar (the closest city Quetta is about 70 km away). Secondly, the economic conditions of the areas around Hala also forces older children to migrate. This factor may also be supported by information given earlier that Khuzdar, in general, was found to be economically substantially better off than Hala. In general, it is suggested that a closer kinship is observed in Khuzdar resulting in larger household size. This very much depends on the typical cultural background of the study areas. In Khuzdar, a considerable percentage of households also fall within LCS4, i.e. household with children of all ages. This further strengthens the above-mentioned assumption.

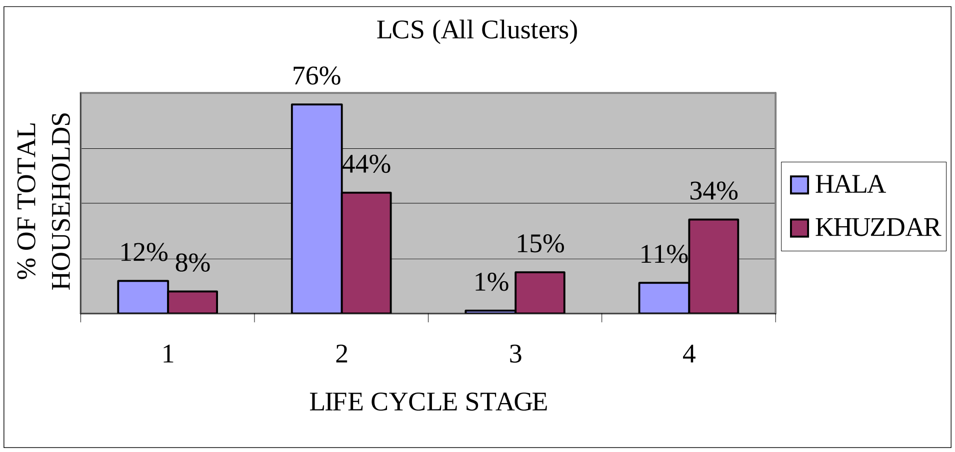


Figure 6.2 Distribution of LCS for all clusters in Hala and Khuzdar

6.5 HOUSEHOLD ACTIVITY-TRAVEL BEHAVIOUR

The analysis of household activity-travel behaviour requires the following to be considered:

a) the socio-economic attributes of household (for example income, life cycle stage, etc.)

b) the attributes of activities (for example distance, activity times, etc.)

This research defines three activity types, as given in Chapter 4, repeated here for completeness:

Primary activities: subsistence needs; such as water / firewood collection, healthcare

Secondary activities: economic needs; such as work, education, market trips

Tertiary activities: rest and recreation; such as family / kinship, leisure

In order to analyse the relationship between household needs and household activities, two parameters of the household activity data are studied, namely, the travel frequency of the activities and the perceived importance of each activity to the household.

6.5.1 Frequency of activities

The travel frequency for various activities explains the fulfilment of certain household needs by means of these activities. Data were collected on the frequency of various activities for each household.

The frequency types defined in this research are:

1. Daily
2. Weekly
3. Monthly
4. Occasional

Table 6.6 provides the data for Hala and Khuzdar on:

a) the distribution of activities within the frequency type
b) the distribution of each frequency type within the four LCS types

The rows marked as 'Total %' in Table 6.6 give the distribution of frequency type for the given activity at overall population level. The distribution of frequency type of an activity indicates the position of the activity within the household activity-travel priorities. There is a clear trend in how the households perform various activities. Water collection is solely a daily activity. The other activities, (market, health and leisure), although have shown mixed trends, have one dominant type of frequency. Market may be considered as daily activity (78%), while health and leisure have dominance in the occasional type (58% and 73%, respectively).

The trend for Khuzdar was similar. The overall percentages for various activities show that water collection and market trips may be classified as daily activities (100% and 54%, respectively). Firewood collection is a weekly activity (55%). Health and leisure are occasional activities.

Table 6.6 Household frequency for various activities

ACTIVITY	LCS	HALA				KHUZDAR			
		FREQUENCY TYPE*				FREQUENCY TYPE			
		1	2	3	4	1	2	3	4
Water Collection	1	0	0	0	0	1	0	0	0
	2	2	0	0	0	2	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	2	0	0	0
TOTAL (%)		100%	0%	0%	0%	100%	0%	0%	0%
Firewood Collection	1	0	0	0	0	1	1	3	0
	2	0	0	0	0	5	15	6	0
	3	0	0	0	0	3	1	4	0
	4	0	0	0	0	3	16	2	0
TOTAL (%)		0%	0%	0%	0%	20%	55%	25%	0%
Market / shopping	1	6	4	0	0	3	2	0	0
	2	55	13	3	0	16	9	1	0
	3	1	0	0	0	5	2	2	0
	4	11	0	0	0	9	12	0	0
TOTAL (%)		78%	18%	3%	0%	54%	41%	5%	0%
Hospital	1	1	0	0	8	0	0	0	5
	2	6	16	2	39	0	0	0	26
	3	0	0	0	1	0	0	0	6
	4	4	6	0	0	0	0	0	21
TOTAL (%)		13%	27%	2%	58%	0%	0%	0%	100%
Leisure	1	0	0	0	3	0	0	0	5
	2	4	3	0	21	0	0	0	25
	3	0	0	0	0	0	0	0	6
	4	3	0	0	3	0	0	0	20
TOTAL (%)		19%	8%	0%	73%	0%	0%	0%	100%

Frequency type codes: 1=Daily; 2=Weekly; 3=Monthly; 4=Occasional

A comparison of the two villages provided information, at the outset, on variation in the overall activities prevalent in different areas. While households in Hala do not need to collect firewood, a considerable number of households in Khuzdar carry out this activity. This indicates the unavailability of home fuel (gas) supply in Khuzdar. Furthermore, water collection was reported only by two households in Hala (2%) and by 5 households (8%) in Khuzdar. It may be recalled that on the basis of Table 6.1 and Table 6.2 it was established earlier that (in-home) water supply was a major problem for both locations (Hala and Khuzdar, respectively). The fact that a majority of households do not travel for water collection suggests the use of other means for water collection. A number of facilities may be listed (for example, community water supply in the form of joint hiring of tankers, etc.). This fact further points out the solution of access problems by non-travel means. The information on various means of water collection was not obtained as this did not constitute travel demand by the household individuals.

Figure 6.3, based on Table 6.6, summarises the percentage distribution in Khuzdar of households within two frequency types; namely, daily and occasional. The y-axis of the graphs is the percentage of population within the activity type. With more than 50% frequency in the daily activity graph, an activity may be classified as primarily daily.

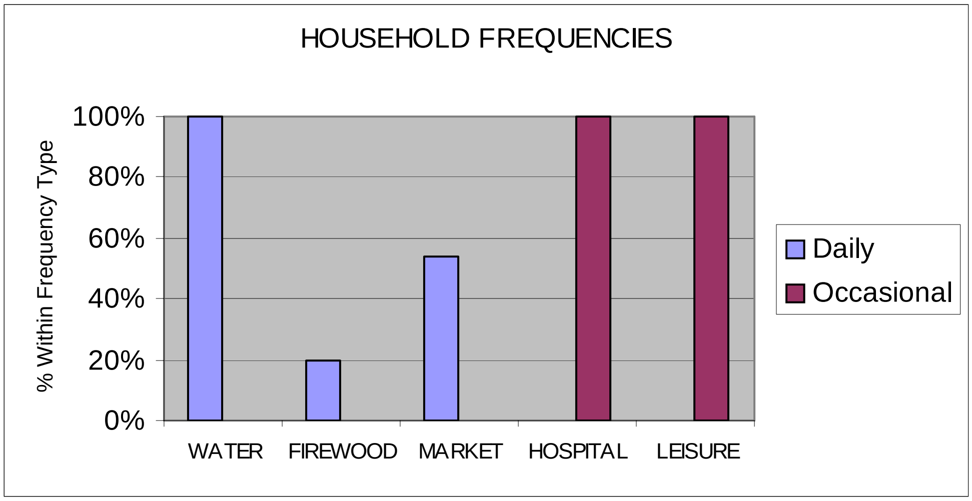
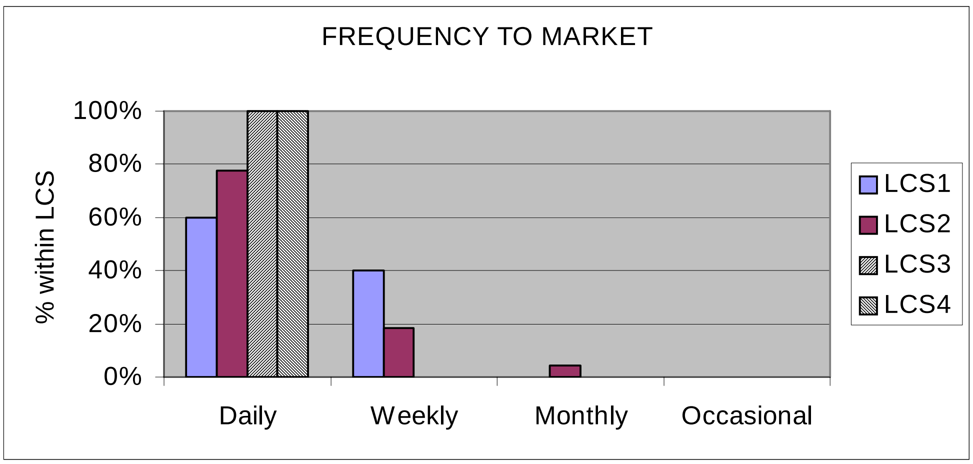


Figure 6.3 Comparison of household frequencies for various activities

By using the 50% threshold, the activities Water collection and Market may be classified as predominantly daily activities, and Hospital and Leisure as occasional activities.

6.5.2 Life cycle stage and travel frequency

The effect of the presence of children on household activity-travel patterns has been studied using frequencies of various activities classified on the basis of life cycle stages. Data summarised in Table 6.6 was used to form Figure 6.4 and Figure 6.5, for Hala and Khuzdar, respectively.



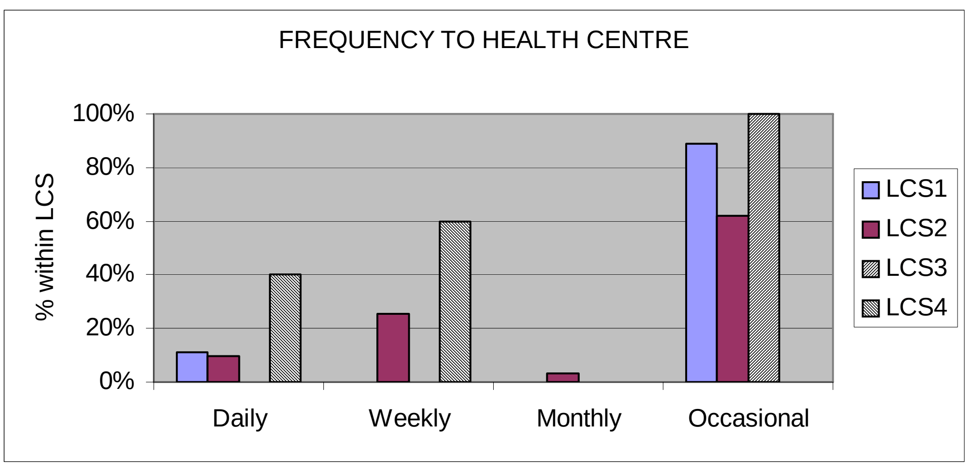


Figure 6.4 Frequency of Market and Health visits (Hala)

Figure 6.4 shows the two activities 'market' and 'health'. It shows the distribution of two activities for the frequency types as well as the LCS types. Looking at the overall percentage of each activity within each frequency type, it can be concluded that while market is a very frequent activity for households without children, the case for health is almost the reverse. Figure 6.5 shows a similar trend for Khuzdar.

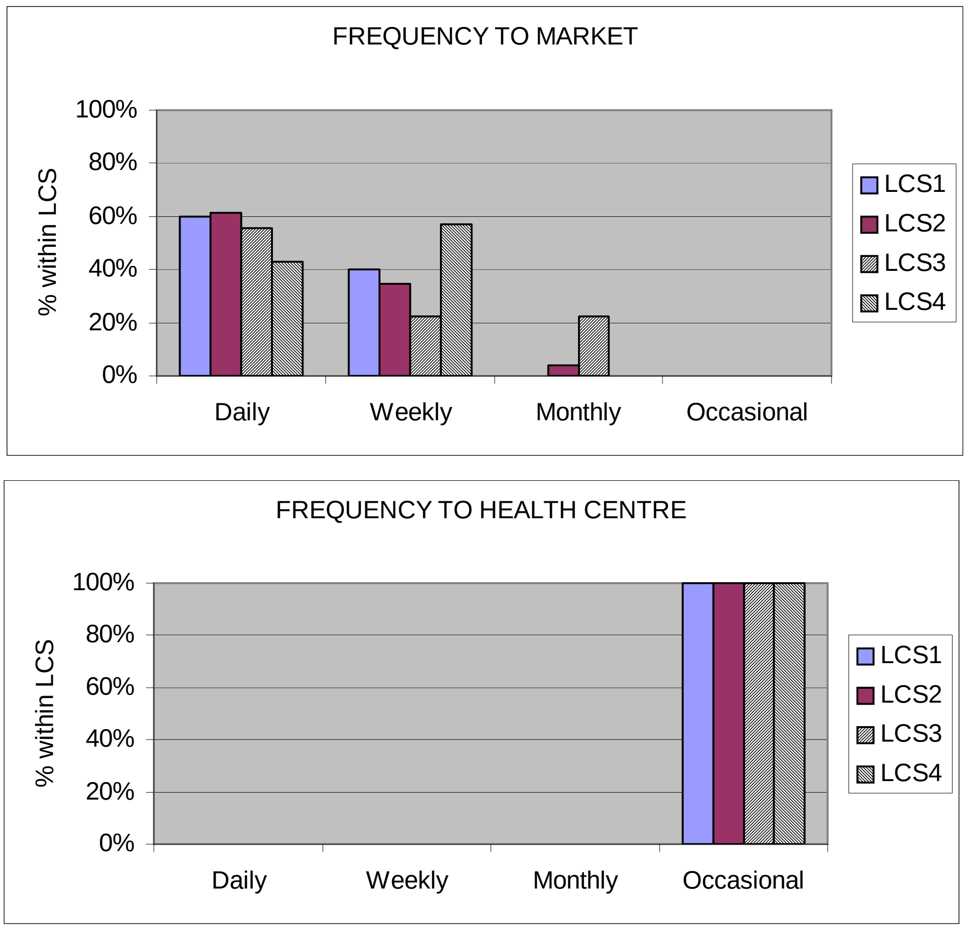


Figure 6.5 Frequency of Market and Health visits (Khuzdar)

Khuzdar showed two discrete trends (Figure 6.5) that are different from Hala. Firstly, the market trips are also carried out on a weekly basis by a considerable proportion of the population. Secondly, in the case of health, the concentration of the whole population is found to be in the frequency type 'occasional'. The different characteristics are considered to be due to the locational and environmental differences between the two areas.

Analysis of Figure 6.4 and Figure 6.5 reveals that, while market trips remain predominantly a daily activity for all LCS types, visit to health centres is basically an occasional activity. The LCS types 2 and 4 exhibit a varying trend for the health activity. While generally the activity is of an occasional frequency type a considerable percentage of households of LCS types 2 and 4 are shown to perform this activity on a weekly basis. This is a reflection of an important household need, i.e. households with younger children would need to visit health centres more frequently than other household types.

6.5.3 Statistical analysis of frequency types

In order to bring all the activities on the same datum, various frequencies to market were normalised to daily frequencies. The normalisation was done on the following basis:

1 weekly frequency	= 1/7	daily frequency
1 monthly frequency	= 1/30	daily frequency
1 occasional frequency	= 1/60	daily frequency

The occasional frequency normalisation factor was taken as 1/60 to represent the relative proportion of households in this frequency type (≈ 1/73). The normalised frequencies were plotted against LCS. The result is shown in Figure 6.6. An analysis of the effect of LCS on normalised daily frequency to market reveals that, there is a direct relationship between household LCS and the frequency to market. As the household enters into a higher life cycle stage, its (daily) frequency to market is increased.

It is worth mentioning here that since, by definition, LCS3 and LCS4 (households with older children and households with children of all ages, respectively) are supposed to have similar needs for market, their normalised frequencies are similar. Furthermore, as households move to the 'higher' LCS, i.e. from LCS1 to LCS2 and then to LCS3, their frequency to market is gradually increased.

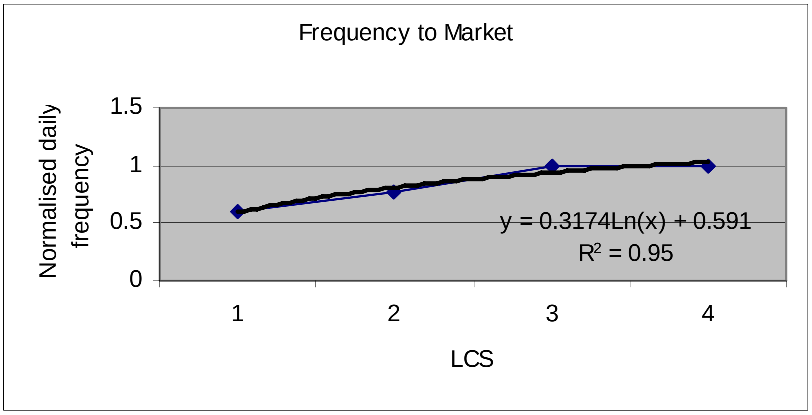


Figure 6.6 Analysis of frequency to Market

Figure 6.6 includes a trend line to indicate the nature of the relationship. The value of the regression statistic R^2 of 0.95 shows the strength of the relationship. This may also be taken to support the assumptions made in this research that the participation in activities is an indication of the fulfilment of household needs at any given life cycle stage. The household needs are strongly affected by the life cycle stage of the household.

6.5.4 Distance to activities

Distance is a major determinant of the accessibility of activities. Analysis was carried out to study how distance to activities affects household activity participation. Table 6.7 summarises the result of this analysis for Hala. The distances were grouped in three bands; less than 5 km, 5-10 km and more than 10 km. Activities covered were Market (going to market to buy goods) and Health (visiting health clinics).

It can be deduced from Table 6.7 that, while distance appears to affect daily frequency activities (i.e. market), activities with an occasional frequency (i.e. health) remain unaffected. This may indicate that distance only affects certain types of activities. That is to say that while shopping is a kind of activity which can be affected by the distance to market, visiting health centres, is unaffected by distance.

Table 6.7 Effect of distance on frequency to Market and Health (Hala)

MARKET					HEALTH				
DISTANCE TO ACTIVITY	*FREQUENCY TYPES*				*DISTANCE TO ACTIVITY*	*FREQUENCY TYPES*			
	1	*2*	*3*	*4*		*1*	*2*	*3*	*4*
< 5 km	54	1	-	-	< 5 km	11	21	-	22
5 - 10 km	3	1	-	-	5 - 10 km	-	1	2	1
> 10 km	13	15	3	1	> 10 km	-	-	-	25

6.5.5 Activity duration

The amount of time that households actually spend on completing various activities, is also a major determinant of household accessibility to these activities. The activity duration data for Hala was grouped into three classes according to activity duration; namely less than an hour, between one and two hours, and more than two hours. The activities Market and Health were classified on the basis of frequency type. The results are presented in Table 6.8.

Table 6.8 Effect of activity duration on frequency to Market and Health (Hala)

MARKET					HEALTH				
ACTIVITY DURATION	*FREQUENCY TYPES*				*ACTIVITY DURATION*	*FREQUENCY TYPES*			
	1	*2*	*3*	*4*		*1*	*2*	*3*	*4*
< 60 min	41	1	-	-	< 60 min	2	9	2	23
60 - 120 min	31	9	3	2	60 - 120 min	9	12	-	17
> 120 min	1	7	-	-	> 120 min	-	1	-	8

According to Table 6.8 the amount of time that households spend on either of the two activities (Market or Health) has a direct effect on the primary frequency type of these activities. The term primary frequency is used here to denote the most dominant frequency type for the given activity. In the case of market trips, as the primary frequency type is daily, an increase in the duration of the activity decreases the number of households choosing the activity on a daily basis. But looking at the middle band (one to two hours) an increase in duration increases the number of households that shift to the weekly frequency type. Similar trends were found for the health trips, confirming that activity duration plays an important role in determining household accessibility.

6.5.6 Perceived importance of the activity

The survey questionnaire included a question on importance of activities. Households were asked to choose a number between 1 and 5 (very important to least important). This is referred to here as the variable 'scale', which defines the perceived importance of each activity for the household. Considering that LCS is a variable which defines the household stage in the formulation of their long term access needs, it may be argued that the perceived importance of certain activities by the household explained the fulfilment of household needs by that activity. Table 6.9 and Table 6.10 summarise percentage frequency (count) of various numbers used by the households to express their perceived importance of the activity Market and Health. The percentage count within LCS type indicates the importance of the activity for the household type.

Table 6.9 Perceived importance of the activity (Market)

SCALE		LCS				ALL LCS
		1	2	3	4	
1	Count	3	27	0	7	37
	%within LCS	21.4%	60.0%	0.0%	70.0%	52.1%
2	Count	9	14	2	3	28
	%within LCS	64.3%	31.1%	100.0%	30.0%	39.4%
3	Count	2	1	0	0	3
	%within LCS	14.3%	2.2%	0.0%	0.0%	4.2%
4	Count	0	3	0	0	3
	%within LCS	0.0%	6.7%	0.0%	0.0%	4.2%
5	Count	0	0	0	0	0
	%within LCS	0.0%	0.0%	0.0%	0.0%	0.0%
TOTAL	Count	14	45	2	10	71
	%within LCS	100.0%	100.0%	100.0%	100.0%	100.0%

In Table 6.9 it is clear that in the case of Market trips, while a considerable number of LCS1 households have chosen scale 3, very few households in other LCS types have chosen a scale higher than 2. This shows that, overall, households consider market trips as an important activity.

Table 6.10 Perceived importance of the activity (Health)

SCALE		LCS 1	LCS 2	LCS 3	LCS 4	ALL LCS
1	Count	0	13	1	1	15
	%within LCS	0.0%	28.9%	50.0%	10.0%	21.1%
2	Count	0	18	1	6	25
	%within LCS	0.0%	40.0%	50.0%	60.0%	35.2%
3	Count	1	8	0	2	11
	%within LCS	7.1%	17.8%	0.0%	20.0%	15.5%
4	Count	1	2	0	1	4
	%within LCS	7.1%	4.4%	0.0%	10.0%	5.6%
5	Count	13	3	0	0	16
	%within LCS	92.9%	6.7%	0.0%	0.0%	22.5%
TOTAL	Count	15	44	2	10	71
	%within LCS	107.1%	97.8%	100.0%	100.0%	100.0%

Analysis of Table 6.10 on the basis of scale of activity within LCS type showed that, while for LCS1 type Health was an unimportant activity, the presence of children brought Health into the set of important activities.

Further analysis of Table 6.10 shows an important trend in the case of LCS3 households, the households having elder children only. Health is an important activity because of the age of the household head and the partner. This is supported by data in Table 6.11 which shows that the average age of the household head and partner are above 50 years in the case of LCS3 households.

Table 6.11 Average age of household head and partner

PERSON TYPE	LCS 1	LCS 2	LCS 3	LCS 4	ALL LCS
Head	33	36	65	46	37
Partner	25	31	55	41	31

It may, therefore, be concluded that life cycle stage is an important determinant of household needs. This assumption is supported by the perceived importance attached by the household to the activities fulfilling these needs.

6.5.7 Household role allocation

Each household need is transformed as an individual responsibility and is ultimately performed by household individuals. The analysis of household individuals involved in various activities, therefore, reveals their role allocation within the household. Table 6.12 summarises the results of such an analysis for the activity 'Market'. Four individual types defined in this research are:

ID1: Head of the household

ID2: Wife/Partner

ID3: Child over 15 years

ID4: Child under 15 years

Table 6.12 Household distribution of Market frequencies (Hala)

LCS TYPES	INDIVIDUAL TYPES				
	1	2	3	4	ALL INDIVIDUALS
1	100%	0%	0%	0%	100%
2	92%	1%	1%	6%	100%
3	100%	0%	0%	0%	100%
4	47%	0%	53%	0%	100%
ALL LCS	86%	1%	9%	4%	100%

Table 6.12 explains the share of each household individual in performing the activity Market. The household head performs an important role. This provides an explanation of the cultural set-up of rural communities where the household head takes the major share of out-of-home activity participation. The situation was changed in the case of LCS4 households. In this household type (LCS4), as older children are also present in the

household, they share responsibility for carrying out shopping, and the role of the household head is reduced at this stage in the household life cycle.

Similar analysis was performed for Khuzdar and is presented in Table 6.13. An important variation seen in Khuzdar, as compared to Hala, is the reduced share of the household head in performing the activity market. The apparent reason is the presence of a higher number of children in the household, i.e. larger family size (see Table 6.4). This explains another facet of cultural effect present in some rural areas of developing countries, i.e. close kinship (see for example Mekki 1981).

Table 6.13 Household distribution of Market frequencies (Khuzdar)

LCS TYPES	INDIVIDUAL TYPES				
	1	2	3	4	ALL INDIVIDUALS
1	50%	33%	0%	17%	100%
2	50%	7%	29%	14%	100%
3	56%	0%	44%	0%	100%
4	22%	0%	56%	22%	100%
ALL LCS	43%	7%	36%	15%	100%

6.6 ACCESSIBILITY INDICES

Definition

Accessibility Index is a number which is used in rural accessibility planning as a measure of the potential problem faced by rural households in accessing the particular activity. It defines, in empirical terms, the inaccessibility of these activities. The detailed methodology of obtaining, and use of an accessibility index has been explained earlier in this thesis (please refer to Chapter 3). The intention here is to present the accessibility situation of various activities for the sampled households by defining an accessibility index (AI) for these activities.

Methodology

From the basic definition, the mathematical form for accessibility index (AI) is a product of two variables as follows:

$$AI_j = X_j \cdot H_j \tag{6.1}$$

where:

AI_j = accessibility index for the activity type *j*

X_j = a measure of the activity attributes in terms of burden on household individuals (for example distance to school)

H_j = a measure of the population affected (for example number of school going children)

On the basis of the above definition, the AI for various activities were developed in such a way that:

a) average distance reported to reach the activity was used for the activity attributes
b) frequency for the activity was used as a measure of population affected.

Data

The calculation and results of AI for Khuzdar are summarised in Table 6.14. The column 'maximum frequency' defines the maximum frequency for the activity within the LCS group. These values were added to form the AI for the activity in consideration. To clarify the use of maximum frequency and the subsequent calculations, the activity Firewood collection can be taken as an example. Referring to Table 6.6 (section 6.5.1) it can be seen that maximum frequency for Firewood collection in LCS1 is 3 (found in monthly frequency type). This means that, although there are households in LCS1 who carry out this activity on a daily basis, the highest number of households affected would be the ones carrying out the activity on a monthly basis.

The last column of Table 6.14 used equation (6.1) to compute AI for various activities. The AI for 'all LCS types' was computed using average distance for the activity and the total number of households affected, i.e. summing up the maximum frequencies within the activity type. This single value of AI, therefore, considered the overall effect of the inaccessibility of the activity for all household types.

Table 6.14 Accessibility Indices for various activities

ACTIVITY	LCS	AVERAGE DISTANCE (km)	MAXIMUM FREQUENCY	ACCESSIBILITY INDEX (AI)
Water Collection	1	0.5	1.0	0.5
	2	1.0	2.0	2.0
	3	0.0	0.0	0.0
	4	0.5	2.0	1.1
ALL LCS TYPES		*0.6*	*5.0*	*3.2*
Firewood Collection	1	5.3	3.0	15.8
	2	3.6	15.0	54.5
	3	3.2	4.0	12.8
	4	3.2	16.0	51.2
ALL LCS TYPES		*3.5*	*38.0*	*134.0*
Market / shopping	1	4.7	3.0	14.1
	2	5.3	16.0	84.3
	3	5.7	5.0	28.3
	4	6.0	12.0	72.0
ALL LCS TYPES		*5.5*	*36.0*	*199.2*
Hospital	1	4.9	5.0	24.4
	2	4.8	26.0	125.7
	3	6.0	6.0	36.0
	4	6.1	21.0	128.6
ALL LCS TYPES		*5.5*	*58.0*	*316.4*
Leisure	1	4.0	5.0	20.0
	2	4.0	25.0	100.0
	3	6.0	6.0	36.0
	4	5.0	20.0	100.0
ALL LCS TYPES		*4.6*	*56.0*	*259.6*

Average distances for all activities considered are summarised in Figure 6.7. The activities Market and Hospital, on the whole, were the most distant activities. Figure 6.8 summarises the AI for various activities for the overall population (*all LCS types* in Table 6.14).

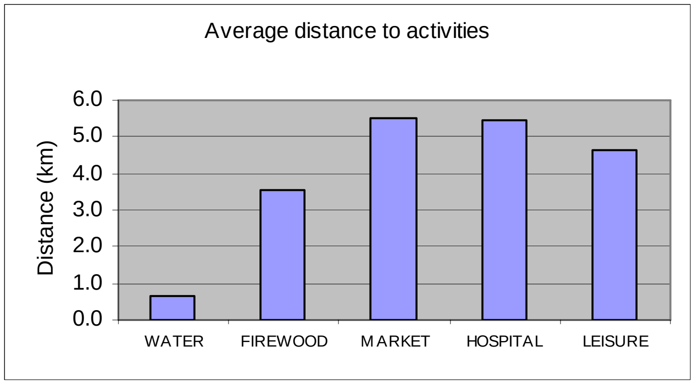


Figure 6.7 Distance of various activities (Khuzdar)

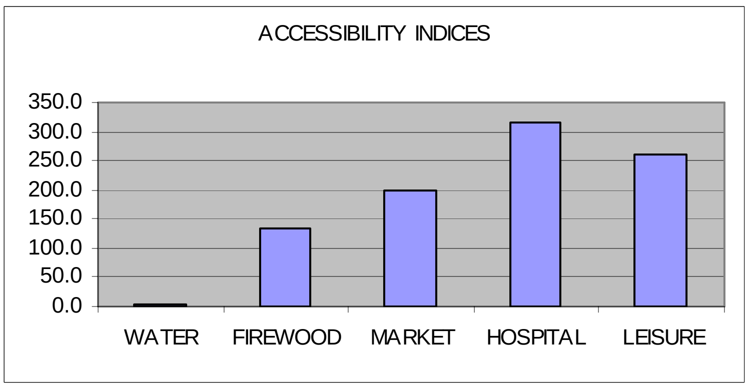


Figure 6.8 Accessibility Indices for various activities

It can be seen from Figure 6.8 that the activity Health, having the highest AI, can be regarded as the activity imposing the highest burden on households. There are two reasons for this:

a) distance to reach the activity is the highest

b) number of households in need of the activity is also the highest

Point (b) also supports the methodology adopted here to take the highest frequency within a given LCS in considering the number of households affected. It can be recapped that, as seen earlier (section 6.5.1), although the activity Health was carried out 'occasionally', it still poses the highest access burden on the households affected. Similarly, even if health is not the activity having the highest distance (Figure 6.7), still its AI is the highest. The reason for this is the number of household needing to perform the activity (at one time) is the highest. This concept is embedded in the accessibility-activity approach developed in this research. This approach supports the notion that rural access planning must be carried out on the basis of the needs of the rural households, the main users of the system.

6.7 INDIVIDUAL ACTIVITY-TRAVEL PATTERN ANALYSIS

This research considered that the individual activity-travel pattern is a result of the role of the individual within the household. It assumes that household needs are transformed into activities performed by household individuals. The individual activity-travel patterns, therefore, provide information regarding the household role allocation and subsequently the fulfilment of household needs.

The activity-travel pattern of an individual is, therefore, a function of the following:

a) the individual type
b) the activity type

6.7.1 Daily activity analysis

Individual activity-diaries were processed to divide total daily time (0600 to 2100) into 15 minute time slots (64 in total). All of these slots were non-blank and contained one number, between 0 and 18, on the basis of information derived from individual's activity diary. The description of the legends for these numbers is given in Table 6.15.

The legends given in Table 6.15 were used to place each individual in one of the following three states:

- Travelling (0-8)
- Non-home activities (9-15)
- Home-based activities (16-18)

Table 6.15 Legends used in activity diary

TRAVEL	NON HOME ACTIVITIES	HOME-BASED ACTIVITIES
0 Walk 1 Animal cart 2 Bicycle 3 Tractor trailer 4 Motor cycle 5 Private car / jeep 6 Hired car/jeep 7 Bus 8 Other	9 Work/school 10 Shop 11 Hospital 12 Leisure 13 Firewood collection 14 Water collection 15 Other	16 Home 17 Handicraft/ business 18 House-chores

Figure 6.9 illustrates the daily activity-travel pattern of the Household Head. The percentage of the sample, within the individual type, carrying out a certain activity (or travel) at each time slot for the whole day (0600 to 2100) is plotted against the time. The graph provides the aggregate distribution of the population in the three states (home-based activities, non-home activities, or travel) at a given time. Most of the household heads leave home around 8:00am. The return journeys are spread between 13:00 to 21:00. The presence of these individuals at home is almost negligible within the working hours, i.e. 09:00 to 13:00. A peak for return journeys was formed around 14:30.

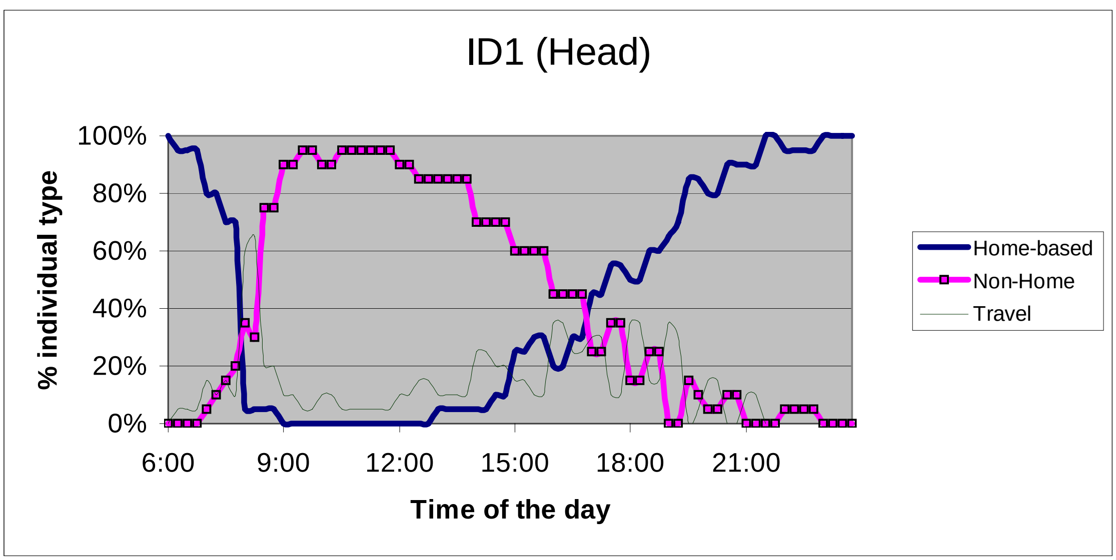


Figure 6.9 Daily activity travel pattern of household head

6.7.2 Cultural and gender effects

Similar analysis was performed for all household individuals. For the purpose of this analysis, individual type 3 (child>15 years) and individual type 4 (child<15 years) were further divided into male and female categories to highlight the discreteness in their activity-travel patterns. Figure 6.10 and Figure 6.11 show the activity-travel pattern of male and female individuals (respectively). Each of the four individual types had a discrete activity-travel pattern.

In general the graphs provide insight into overall time-budget of various individual types. The state of home-based activities approaches 100% near the two ends of the day (around 0600 and 2000), when most of the individuals are at home. In the mid-day period most individuals are at 'non-home' locations, (except for a few individual types). The maximum percentage travelling was around 60%, (even in the case of the household head), explaining the role of travel in accessing daily activities.

On the aggregate basis, the household heads have involvement in 'non-home' activities for a longer part of the day, in comparison to any other individual type. The activity-travel pattern of the household wife and the female child were found to be similar. This explains the cultural effects on access to activities. It is understood that female individuals older than 15 years tend to spend most of their daily time budget involved in at home activities. A small percentage of housewives have been involved in travelling (walking). The probable reason is for carrying out household chores like water collection, etc.

It is worth mentioning here that Figure 6.10 and Figure 6.11 only contain either of the two non-home activities, i.e. Work or School. At any particular instance of time, therefore, the total of the vertical axis may not sum to 100%. This indicates involvement of individual types in activities other that Work or School.

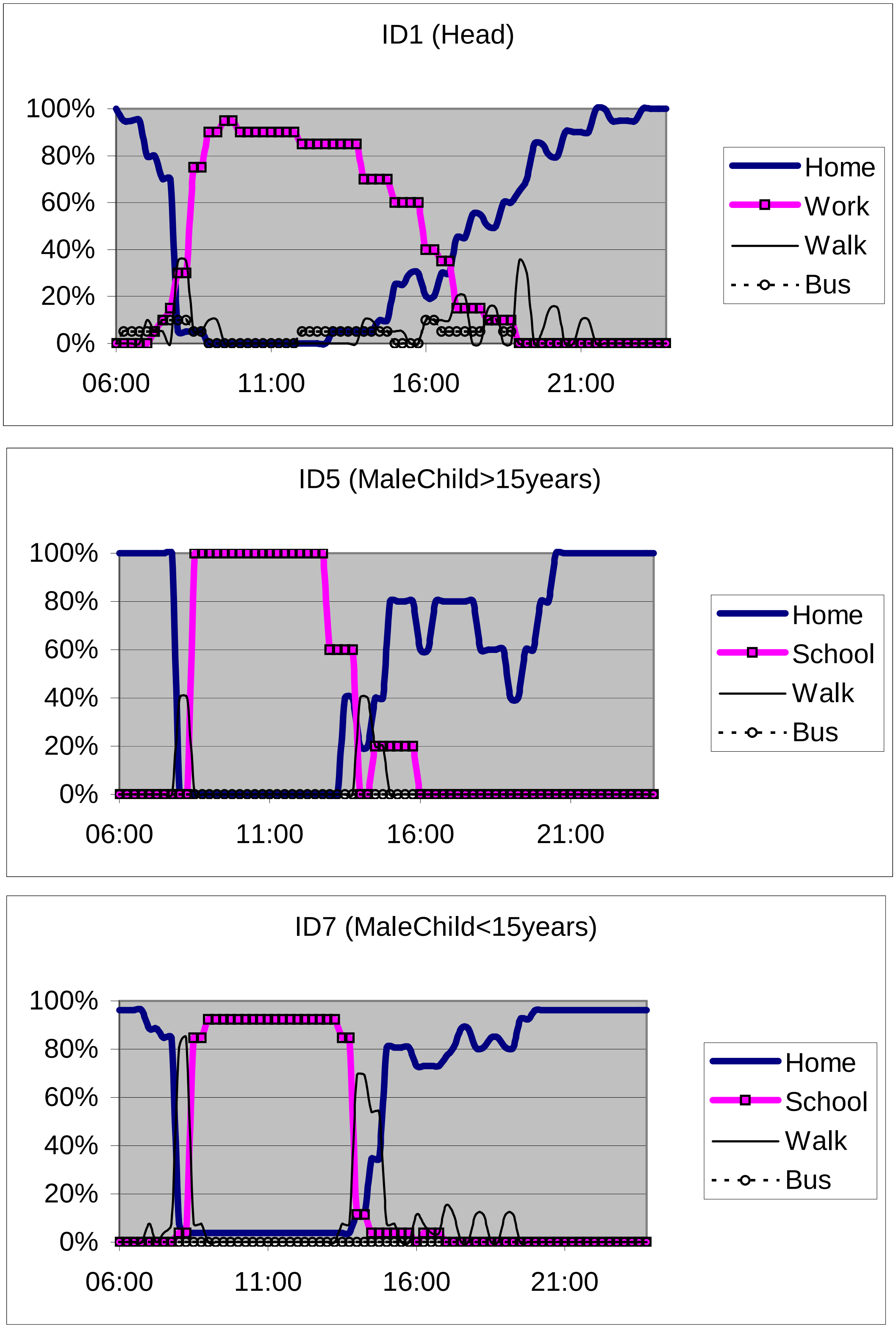


Figure 6.10 Daily activity-travel pattern by male individuals (all types)

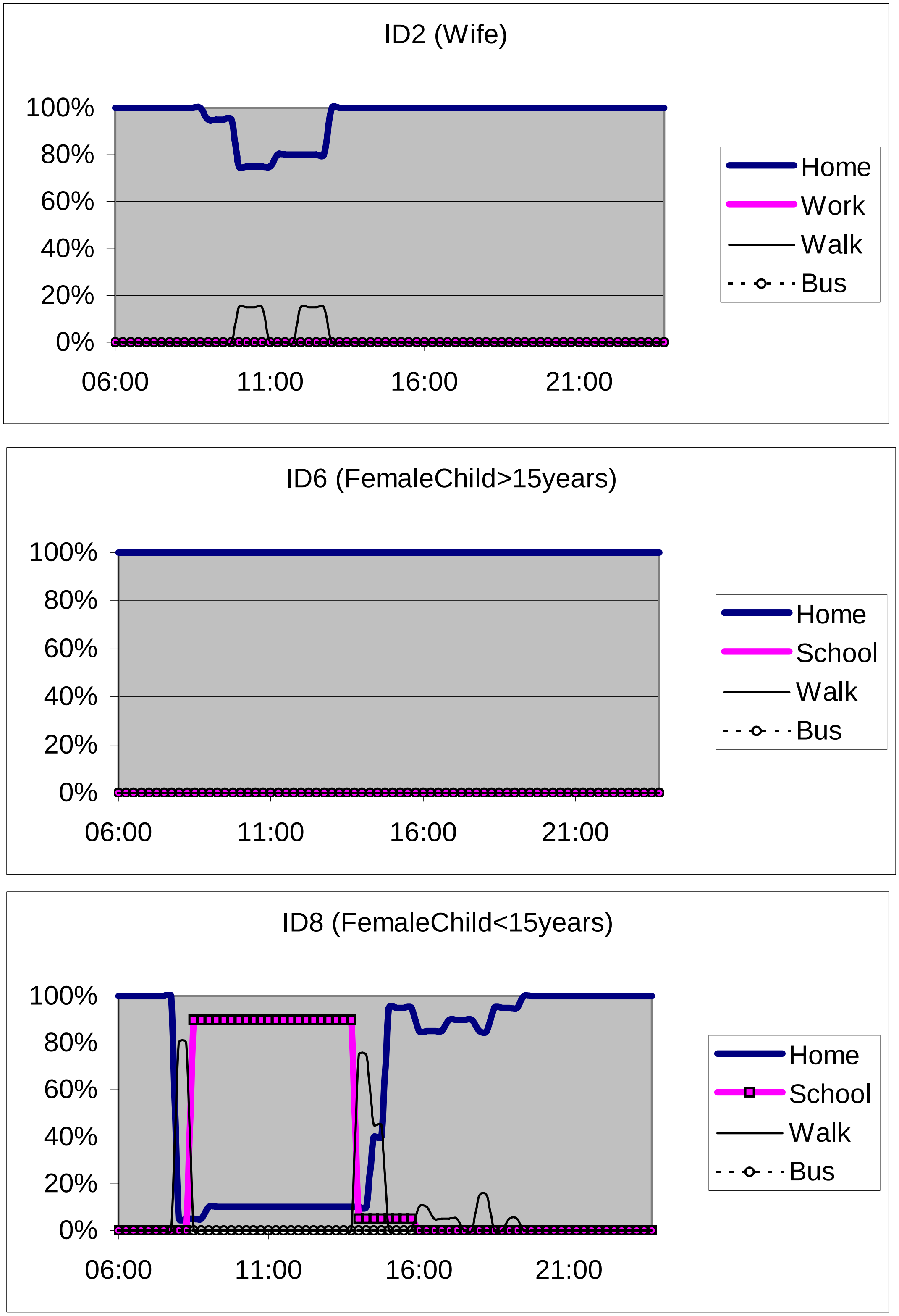


Figure 6.11 Daily activity-travel pattern by female individuals (all types)

6.8 ECONOMICS OF HOUSEHOLD DECISION-MAKING

The economics of rural household decision-making was studied on the basis of their involvement in earning-related activities. For this purpose, the activity Work carried out by the Household Heads was analysed. It may be noted that in this research the Work was defined as the primary earning-related activity for any household individual. The Household Heads were found to be the main individuals responsible for carrying out Work activities.

For a purpose of quick reference these earning-related categories used to define activity Work are listed here (details may be seen in the questionnaire in Appendix-C):

6.1 Waged Agricultural Labour
6.2 Own Farm Agricultural Labour
6.3 Waged Non- Agricultural Labour
a) Office / indoor work
b) Outdoor / field work
6.4 Self Employed Non- Agricultural works
a) Office / indoor work
b) Outdoor / field work
6.5 Other (specify)

6.8.1 Vehicle ownership and time-space prisms

The transportation, temporal and spatial constraints binding upon individuals define their time-space prism (TSP). The TSP's of individuals provide information on the extent of the activities they can perform, and gives necessary leads to planners to seek ways to improve them. The analysis of work trips has been carried out to define the TSPs of individuals, their extents and various factors related to the households and the activity location. Table E-1 in Appendix-E was formed using the information on work trips by household heads in Hala. The household vehicle ownership (VEHOWN) and work travel mode (MODWRK) in the Table E-1 were cross-classified. The results are presented in Table 6.16.

Table 6.16 Distribution of work trips

WORK TRAVEL MODE	**CLASSIFICATION OF WORK TRIPS** *TRANSPORT VEHICLE OWNERSHIP*						*ALL VEHICLE OWNERSHIPS*
	0	*1*	*2*	*3*	*4*	*5*	
0	45	1	10		3	1	60
2			1				1
3				1			1
4	2				5		7
5	2					1	3
6	1						1
7	21		3		3		27
ALL MODES	71	1	14	1	11	2	100

The following legends were used in development of Table 6.16 and Table 6.17:

Legends used for Vehicle ownership and travel mode:

0 Walk (for mode) / None (for ownership)
1 Animal cart
2 Bicycle
3 Tractor Trailer
4 Motor cycle
5 Private Car/Jeep

Legends used For travel mode only:

6 Hired Car/Jeep
7 Bus

A general analysis of Table 6.16 shows that, out of 100 households in Hala, a considerable proportion (71%) did not own any transportation vehicle, while about 60% of households used walking as the transport mode for their work trips. The remaining 40% of households used other modes for their work journeys. This provides the starting point of the analysis designed to answer the question that 'what is the 'basic' TSP of the individuals and how do they try to improve them?'

Using the same variables, the household vehicle ownership (VEHOWN) and work travel mode (MODWRK) from Table E-1 (Appendix E), the average distance to work and the average time for work trips are classified and presented in Table 6.17. Considering the overall average distance to work (Table 6.17), the average for the mode walking is around 0.3 km. This means that on average walking covered the work destinations which were about 0.3 km away. Similarly households that did not possess any transportation vehicle (vehicle ownership=0) travelled an average distance of 9.5 km for work. This was possible when they used other modes of transportation (modes 4-7). The trend for the average time taken for work trips was different from that for distance. The time taken by households not owning a transport vehicle was above the overall average of 28 minutes (please refer to Table 6.17). This suggests that on an average these households spent more time than the overall average for the area but travelled a lesser distance. The reason was the availability of transport modes at their disposal. Not owning a transport vehicle forced them to either use public transport or to resort to localised trips. In both cases the overall travel time increased, i.e. the walking time in the case of "walking" as travel mode and the waiting time in the case of using public transport (travel mode 7).

Table 6.17 Attributes of the activity work

WORK TRAVEL MODE	**AVERAGE DISTANCE TO WORK (km)** *TRANSPORT VEHICLE OWNERSHIP*						*ALL VEHICLE OWNERSHIPS*
	0	*1*	*2*	*3*	*4*	*5*	
0	0.3		0.4				0.3
2			3.0				3.0
3				1.0			1.0
4	4.0				3.3		3.5
5	16.5					250.0	94.3
6	8.0						8.0
7	29.1		13.3		39.3		28.5
ALL MODES	9.5		3.4	1.0	12.2	125.0	11.1
WORK TRAVEL MODE	**AVERAGE TRAVEL TIME TO WORK (min)** *TRANSPORT VEHICLE OWNERSHIP*						*ALL VEHICLE OWNERSHIPS*
	0	*1*	*2*	*3*	*4*	*5*	
0	6		11				6
2			30				30
3				10			10
4	15				10		11
5	40					240	107
6	35						35
7	81		30		55		72
ALL MODES	30		16	10	20	120	28

An important point worth mentioning was distance and time for work by households owning tractor trailer (mode 4). Usually these households also own farms and live on the farms so their travel pattern for work depicts a typical pattern. Similarly a different trend is found in distance and time for households owning and travelling by car (mode 5). The typical nature of the work trip suggests that the individual may be a driver.

6.8.2 Improved TSP

The distance and time of travel to work may be used to define the individual time-space prism (TSP). The slopes of the prism sides are defined on the basis of maximum speed of travel by the individual. The extent of the TSP depends both on the slopes of prism sides as well as the total daily time budget. This time budget was defined as the overall time available to the individual between his home coupling constraints (leaving home and returning home). The basic configuration of the TSP of an individual is explained in Figure 6.12.

Figure 6.12 contains two circumscribed TSPs. The inner TSP is defined as the basic TSP. The slope of side *ab*, i.e. the value of the angle ϕ_1, is defined on the basis of household vehicle ownership. This can be defined using the speed of travel achieved by the individual from a household owning a vehicle when they travel using the same vehicle mode. The TSP obtained in this way is called basic TSP. The slope ϕ_2 defines the sides *ab'* of the improved TSP. The improved TSP can be defined on the basis of the average speed achieved by the household with a given vehicle ownership using any mode of travel.

Values of the two angles ϕ_1 and ϕ_2 in Figure 6.12 are computed using the following trigonometric relationship:

$$\phi = \tan^{-1}\left(\frac{\text{time}}{\text{distance}}\right) \qquad (6.2)$$

where

ϕ = slope of the prism boundaries

time = travel time

distance = distance to the activity

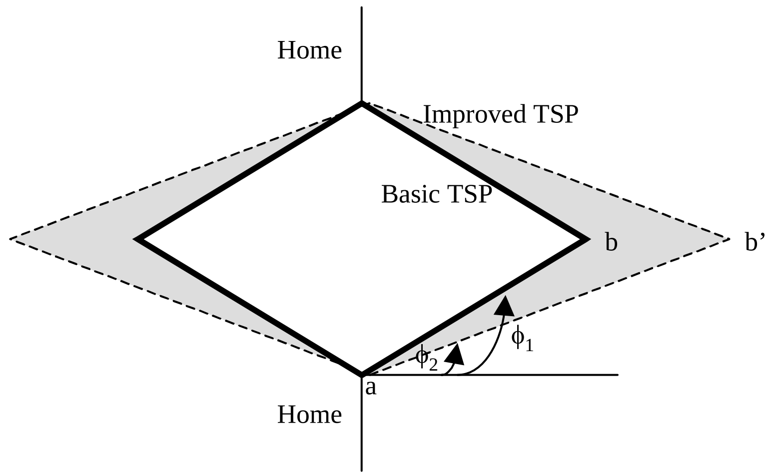


Figure 6.12 Configuration of individual TSP

Table 6.18 is constructed to investigate the effect of various travel modes on the individual TSP. The table uses the data presented earlier in Table 6.17 to compute the two values ϕ_1 and ϕ_2 using equation (6.2). For ϕ_1 (the basic TSP) the time and distance values corresponding to the vehicle ownership group were used (for example Walking for household not owning any transport vehicle). For ϕ_2 (the improved TSP) the time and distance values used were the overall average for the vehicle ownership group (bottom row in the relevant column).

Table 6.18 Basic and improved values of angle phi

WORK TRAVEL MODE	**ANGLE PHI (degrees)** *TRANSPORT VEHICLE OWNERSHIP*						*ALL VEHICLE OWNERSHIPS*
	0	*1*	*2*	*3*	*4*	*5*	
0	87.5		87.8				87.6
2			84.3				84.3
3				84.3			84.3
4	75.1				71.7		73.0
5	67.6					43.8	48.5
6	77.1						77.1
7	70.1		66.0		54.4		68.5
ALL MODES	72.2		78.2	84.3	58.0	43.8	68.4

In Table 6.18, the shaded values in the diagonals of the matrix are the values ϕ_1 and the shaded values in the 'all modes' row are the corresponding values of ϕ_2. The analysis of Table 6.18 indicated how individuals tend to improve their TSP, as well as accessibility to Work, using the available transport modes. The households with no transport vehicle ownership, for example, would have the basic TSP having slope of 87.5 degrees, while they improve it up to 72.2 degrees. Similarly, households with ownership of bicycle will improve their TSP from 84.3 degrees to 78.2 degrees. The households with ownership of vehicle types 3 and 5 (tractor trailer and private car, respectively) do not improve their TSP. This is possibly because they are at the maximum utilisation of their TSPs. To generalise, it may be said that, all the individuals (belonging to any vehicle ownership category) would either tend to improve their TSP or would at least remain at their basic TSP. These findings were in line with the conclusions of Ellis and Hine (1995) that the rural households in Asian countries studied by them made use of the available transport services in order to improve accessibility of economic activities (see details in section 2.2.2, chapter 2 of this thesis).

6.8.3 Utilisation Index

Individual accessibility to activities not only depends on their daily time budget but also on the way they utilise the available time in activity participation. Analysis of individual time budget utilisation leads to an understanding of the economics of household decision-making. It has been postulated in this research that the time-space prism is adjusted according to the individual's activity participation decisions (see chapter 3). Using individual activity participation information, it was possible to analyse the total daily time budget of the individuals as well as the real constraints shaping their TSP. From the individual activity diaries the following information was obtained:

a) start timings for work trips
b) timings for return trips
c) duration and mode for work trips
d) distance and duration of work

Table 6.19 Work trip timings statistics

CLUSTER1			CLUSTER2			CLUSTER3			CLUSTER4			CLUSTER5		
Leaving home for work			Leaving home for work			Leaving home for work			Leaving home for work			Leaving home for work		
Slot	Time	Count	Slot	Time	Count	Slot	Time	Count	Slot	Time	Count	Slot	Time	Count
10	8:30	62	8	8:00	18	9	8:15	1	4	7:00	4	8	8:00	21
11	8:45	2	9	8:15	2	10	8:30	52	8	8:00	18	12	9:00	2
28	13:00	3	10	8:30	7	22	11:30	6	9	8:15	2	29	13:15	2
Return home from work			Return home from work			Return home from work			Return home from work			Return home from work		
Slot	Time	Count	Slot	Time	Count	Slot	Time	Count	Slot	Time	Count	Slot	Time	Count
36	15:00	66	32	14:00	25	9	8:15	5	2	6:30	2	6	7:30	3
40	16:00	3	48	18:00	3	35	14:45	5	35	14:45	23	32	14:00	1
52	19:00	21	49	18:15	6	36	15:00	59	56	20:00	10	36	15:00	23

Table 6.19 summarises the information on (a) and (b). It contains the average time of start of work trips, as well as the average time for start of journey to home. The column 'count' is the number of individuals observed in the given cell. It was found that the majority of the individuals left home for work at 08:00 (in the case of clusters 2,4, and 5) or 08:30 (in the case of clusters 1 and 3). Similarly the majority of the individuals started the journey from work to home at 14:00 (in the case of cluster 2), 15:00 (in the case of clusters 1,3 and 5), or 14:45 (in case of cluster 4). For each location, therefore, a fixed daily time budget can be derived.

This pattern revealed that:

1. as far as work trips were concerned, the rural population either did not possess or did not exercise various varieties of work options (for example working from home)
2. the mass out-going and in-coming timings showed some sort of dependency on external factors (for example connection to public transport).

Based on the above information it can be deduced that the individuals have a fixed time budget as far as work trips are concerned. This concept was used to define a simplified time-space prism for working individuals, as shown in Figure 6.13.

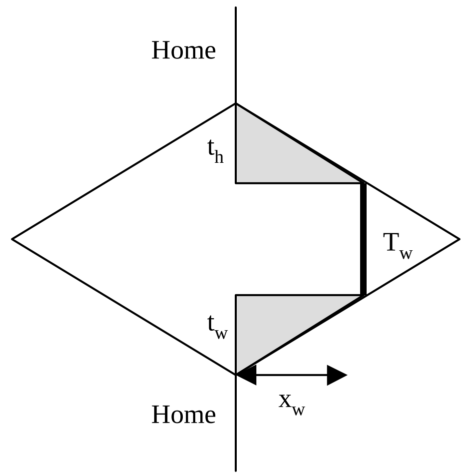


Figure 6.13 TSP of working individuals

It is assumed in Figure 6.13 that:

i) the individual only takes part in the activity Work

ii) the activity Work has a fixed duration of time T_w

iii) trips to and from work have equal duration, such that $t_w = t_h$

iv) distance to work is given by x_w

v) total time budget of the individual comprises of the above-mentioned three time durations

From the above conceptual setting, and considering that the individual needs to travel to access the activity work, a mathematical relationship can be developed as:

$$TW = t_w + T_w + t_h \qquad (6.3)$$

where

TW = total time spent to access the activity work

t_w = travel time to work

t_h = travel time from work

T_w = actual work duration

Considering that the time for travel is unutilised, a utilisation index can be developed so as to analyse the effect of time of travel for work trips. In Figure 6.13 the utilisation index can be defined as the non-shaded area in the total time budget. Mathematically, it can be given as the proportion of the total access time spent in travelling, i.e.:

$$UI = \frac{T_w}{TW} \qquad (6.4)$$

where

UI = utilisation index

The utilisation index gives the percentage of time utilised when an individual accesses the work location. This is based on the variation in the shaded area, which represents unutilised time.

The above idea was explored using the data on distance to work from the five clusters of Hala. Considering that the distance people have to travel to reach Work locations was a major factor affecting the utilisation of time for activity participation, an analysis was carried out to study the relationship between distance to Work location and the UI. The average value of the travel distance to Work was found to be 11.15 km. Two subgroups of household heads were formed on the basis of this threshold value; i.e. persons with travel distance to work below and above the average distance of 11.15 km.

The two graphs presented in Figure 6.14 show how the distance to Work affects the utilisation index, with respect to the average travel distance threshold of 11.15 km. It can be deduced from the regression analysis that work trips within a distance of 11.15 km (average for the area) do not seem to effect the utilisation index. This is logical as the average distance below certain values may not create a significant deterrence. Travel distances higher than 11.15 km (as shown in the bottom part of Figure 6.14), play an important role in affecting the time utilisation. This happens because the individuals spend a considerable time in travelling to reach the activity, which, in turn, decreases the overall time for participation in activity Work. This finding provides empirical justification for the mathematical form of the component of BM model representing generalised travel time function (equation 3.2, in section 3.4.1). The general form of the function is a negative exponential on the distance, such that the value of the deterrence function becomes more profound for higher distances.

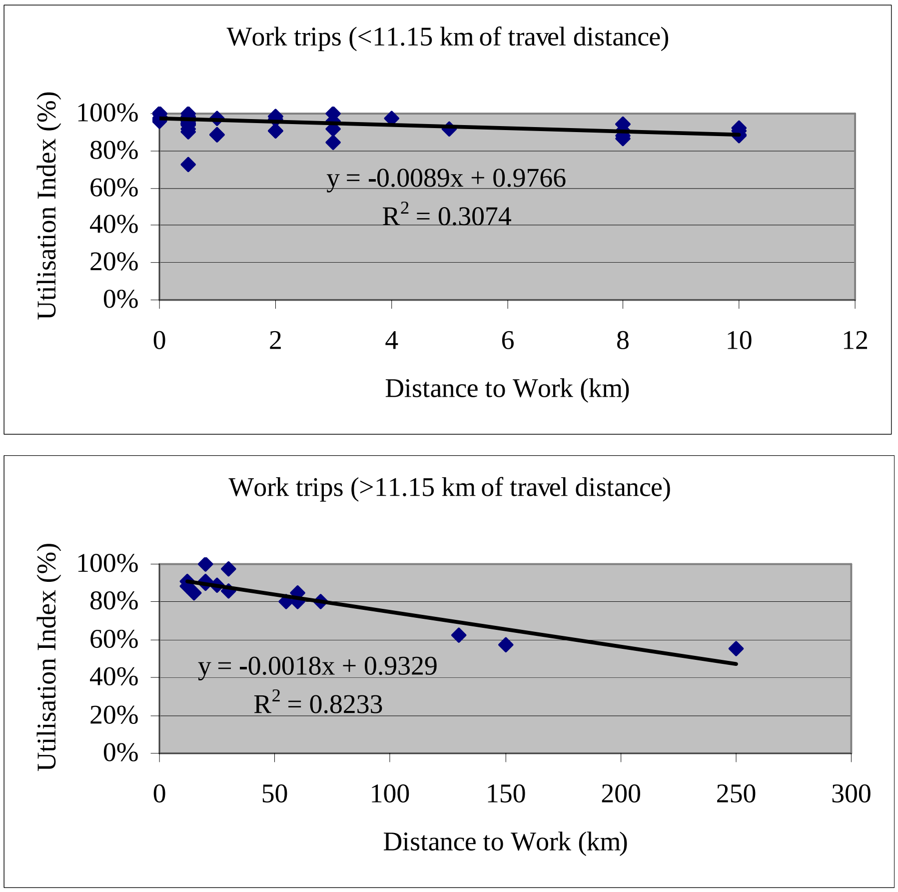


Figure 6.14 Effect of distance to work on utilisation index

For the purpose of completeness it should be noted that the above analysis was performed by redefining equation (6.4) for one observation of the data given in Table E-1 of Appendix E. This observation was the 26th case (the head of household number 26 in the Table). This individual was reported to have spent 720 minutes as travel time and the same amount of time was reported to be spent on the activity Work. Considering the magnitude of both time durations (travel and activity), this appears to indicate that the individual uses the travel as his work activity. The individual may be a driver performing his Work activity and at the same time be involved in the travel. The travel time was therefore considered equal to zero for the individual in calculation of the value of *UI*.

Further analysis was performed to study the effect of income on *UI*. From Figure 6.15 it may be seen that increased income does not necessarily affect the utilisation index. This was true for both subgroups of the population.

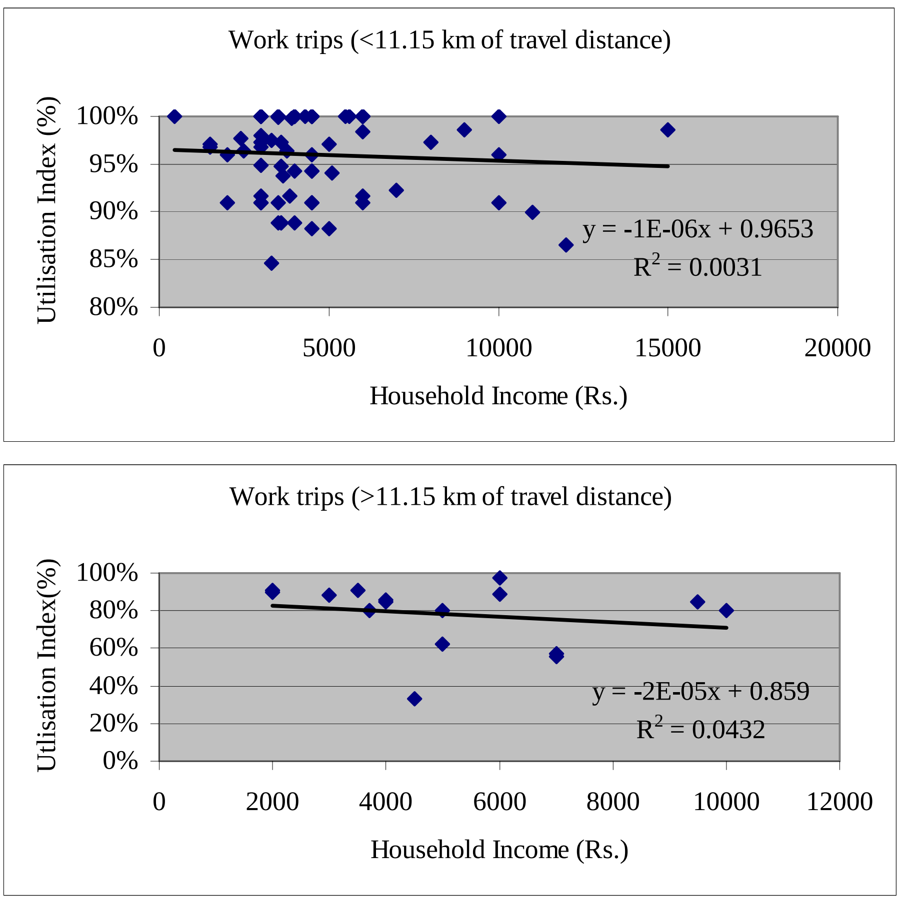


Figure 6.15 Effect of household income on utilisation index

When the relationship between household income and distance to work was studied, it was found that an increase in household income is not a direct result of travelling long distances. This was true for both subgroups of the population (Figure 6.16). In rural areas of Pakistan, Household Heads have to travel longer distance to earn their livings, irrespective of a direct increase in their income.

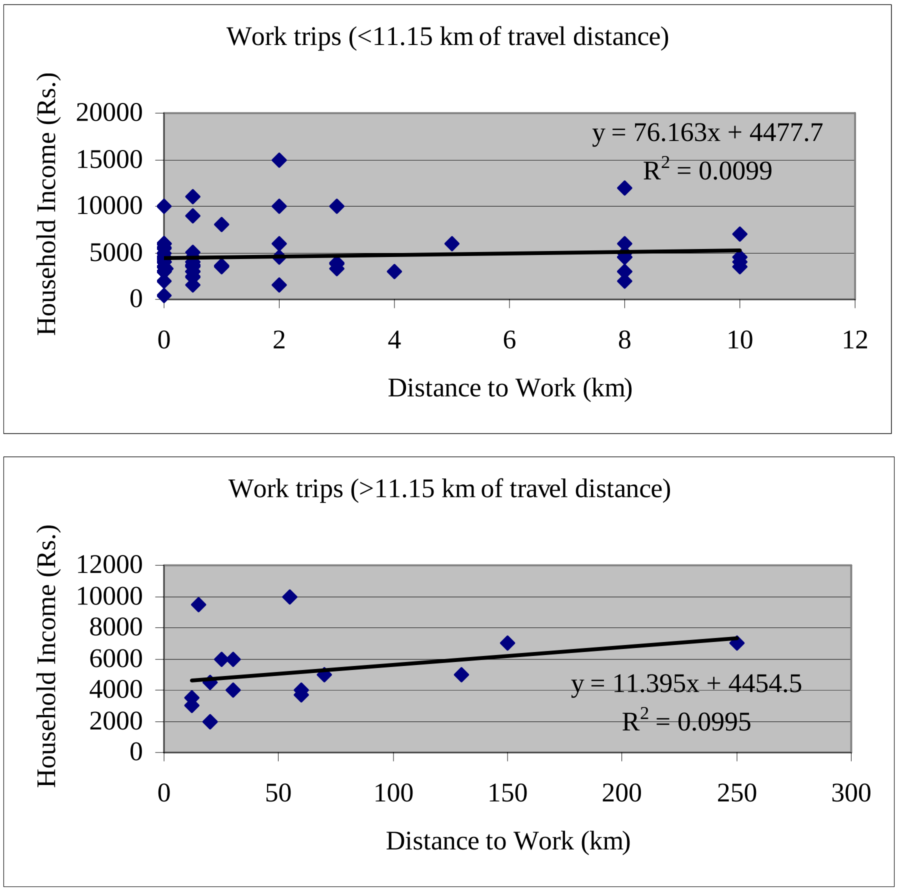


Figure 6.16 Relationship between distance to work and household income

On the basis of the above analysis it can be deduced that the distance to work, beyond a certain threshold value, has as a profound effect in reducing utilisation of time for earning activities. The threshold may be defined as the average travel distance for the given area. The analysis is an example of the use of time-space geography to study household economics of decision-making. The decision to take part in distant work activities is not necessarily based on increasing the household income, it may just be the effect of the limited opportunities available within the village that the population has to travel longer distances at the cost of reduction in their overall time utilisation.

It can be deduced from the above analysis that in the limited time-budget situation, the distance to Work affects the overall time available for earning activities. The development policies designed to address the temporal constraints of rural populations (especially working individuals) would therefore be expected to yield a high impact.

6.9 SUMMARY

Rural activity-travel behaviour using household data collected from Hala, and Khuzdar, Pakistan, was analysed. It followed the premise explained in the modelling framework developed in this research. The analysis was based on the modelling framework, which suggested that rural activity-travel patterns must be studied on the basis of household as the unit of analysis. The analysis showed that the individual travel decisions were attributed to the household socio-economics.

This chapter served two purposes:

a) It verified the concepts and hypotheses developed in the modelling framework as to how the household access needs are transformed into individual travel decisions
b) It also provided a direction to formulate inputs to the model system in order to predict the travel demand.

Further developments of the modelling system would rely on two important considerations; namely, economics of household decision-making, and cultural and gender issues.

Economics of household decision-making

In general, analysis of the rural activity-travel behaviour confirmed the concepts developed in the modelling framework that the involvement of household individuals into various activities is an indication of the fulfilment of household needs from those activities. The Life Cycle Stage was considered to be an important determinant in affecting economics of household activity-travel decision-making. The household role allocation is highly dependent on the presence of various types of individuals in the household, again a factor of LCS.

Cultural and gender issues

The household head is the individual type carrying out most household activities in almost all LCS types. The households at LCS4 contain the elder children to share this responsibility with the household head. Housewives and female children above 15 years of age do not take part in out-of-home activities. They do, however, participate in home-based activities, including earning activities like handicrafts, etc. Hala, being a major centre of handicrafts, provides the opportunity for women to engage in home-based working activities. This contributes to household income, which indirectly, improves household accessibility. The analysis of these activities was not carried out, as they did not directly contribute towards rural travel demand.

CHAPTER 7

DEVELOPMENT OF A SYSTEM FOR MODELLING RURAL TRAVEL DEMAND

7.1 INTRODUCTION

One of the main objectives of this research was to develop a system for modelling rural travel demand by considering household access needs and the potential to participate in spatially distributed activities. The basic concepts were developed at the modelling framework stage described in Chapter 4. The analysis of rural activity-travel pattern, using data collected from selected rural locations in Pakistan (see Chapter 6), provided insight into the factors governing the economics of the household activity-travel decisions. This provided the basis for the development of a system for modelling rural travel demand, as reported in this chapter.

The first part of this chapter describes the mathematical development of the choice process conceptualised in the modelling framework (chapter 4). The conceptual basis of various modelling approaches used and the estimation of model parameters is explained. The second part of the chapter describes the development of input vectors. Parameters of the accessibility benefits model (BM) are estimated using field data. This is used in the analysis of the behavioural component of the BM model in order to justify its application in modelling the choice process. The input vectors also include development of observed choice vectors. Using BM as a proxy for the utility function, various probabilistic behavioural models are developed as alternative approaches to predicting individual activity choice. The models are then used to predict aggregate travel demand. The third part consists of a worked example to demonstrate the application of the modelling system.

7.2 MODELLING INDIVIDUAL TRAVEL BEHAVIOUR

7.2.1 The concept

In modelling the travel behaviour of rural individuals, the desire to participate in an activity may be related to the accessibility benefit derived by the individual. In the accessibility-activity framework developed in this research, this means that the activity participation of an individual provides an index of the accessibility benefit. Using the data on the accessibility benefit index measured for each individual, as well as their activity participation (i.e. travel), it is therefore possible to model the travel behaviour of the individuals.

This concept is used to develop the mathematical form of a rural travel demand model within the discrete choice approach, under the utility maximisation framework. The accessibility benefits index is used as a proxy to the utility of the activity for the individuals.

7.2.2 Discrete choice approach

According to the discrete choice approach of utility maximisation, an individual *i* will select an activity *j* if the utility of that activity is the maximum within his set of activities. This stochastic problem can be mathematically written as:

$$P_j^i = \Pr(U_j^i > \tilde{U}_m^i)\text{ ; for all } m \neq j \qquad (7.1)$$

where

P_j^i = probability of selection of alternative *j* by the individual *i*

U_j^i = utility of alternative *j* for individual *i*

$\tilde{U}_m^i$ = all combinations of *U* where $m \neq j$

In the utility maximisation framework, equation (7.1) would give the probability of individual *i* choosing alternative *j*, expressed as the probability that the utility of the alternative *j* is higher than the utility of any other activity in his choice set.

In the light of the above statement, therefore:

$$P_j^i = \Pr\left[U_j^i \geq \max_{m \in C_i} U_m^i\right] \tag{7.2}$$

where $m = 1, 2, \ldots M$ represents the different alternatives available in the individual's choice set C_i.

Random utility

While modelling the individual behaviour, it is appropriate to consider the utility of an alternative as a random entity. In the random utility approach, the utility of an alternative *j* to an individual *i* is represented by:

$$U_j^i = V_j^i + \varepsilon \tag{7.3}$$

where:

U_j^i = utility of alternative *j* for the individual *i*.

V_j^i = the deterministic component of the utility

ε = the random (or error) component of the utility

Using equation (7.2), therefore:

$$P_j^i = \Pr\left[V_j^i + \varepsilon_j^i \geq \max_{m \in C_i}(V_m^i + \varepsilon_m^i)\right] \tag{7.4}$$

The expression in equation (7.4) must fulfil two requirements:

a) it must render values between 0 and 1, and
b) it must have marginal values near both its ends approaching zero (an s-shaped curve).

Condition (a) is required due to the notion of a probability density function, whilst condition (b) fulfils an important economic behavioural requirement, as explained with the help of the following example.

It is generally accepted in microeconomics that the utility of time obtained by an individual for activity participation will be significantly less pertinent when the time for participation is extremely low ($t \rightarrow 0$). Similarly the person will not get any additional benefit after a certain time limit ($t \rightarrow \infty$). In other words, the marginal utility of time is zero at both ends of the time availability line ($0 \leq t \leq \infty$).

The above requirements are dealt with while developing the specifications of the function U_j^i. Three model specifications are developed in order to estimate the probability density function (7.4). They are:

1) Multinomial logit model
2) Binary logit model
3) Grouped regression model

7.2.3 Multinomial logit model

The logistic function, called the multinomial logit (MNL) model, fulfils the requirements in conditions (a) and (b) set out above. The MNL is able to express the discrete choice within the utility maximisation framework as:

$$P_j^i = \frac{\exp(V_j^i)}{\sum_m \exp(V_m^i)} \tag{7.5}$$

where all the variables are as described earlier, i.e.:

P_j^i = probability of selection of activity *j* by the individual *i*

V_j^i = the deterministic component of the utility

m = 1,2,…..*M* represents the different alternatives available in the individual's choice set C_i.

It is important to note the absence of the random (error) terms ε in equation (7.5). This was possible under the assumption that the error terms have an independent and identical distribution with zero mean and variance equal to 1.

Model specification

The next step is the specification of the function V_j^i in equation (7.5). This function can be represented as linear-in-parameters (Ortuzar 1994), and is described as:

$$V_j^i = \sum_l \theta_l (X_l^i)_j \qquad (7.6)$$

where:

θ_l = estimable parameters of the model, relevant to each explanatory variable (*l*) of the function $\left(X_l^i\right)_j$

$\left(X_l^i\right)_j$ = explanatory variables for alternative *j*, containing attributes of the individual *i* and the system

l = 1, 2, …L represents the parameters comprising function V_j^i (for example cost, time, etc.)

It must be noted that in equation (7.6) the model parameters θ_l (when estimated) represent the effect of each explanatory variable *X*, collectively for the whole population/sample.

Theoretically, $(X_l^i)_j$ can be composed of independent parameters (for example cost, time, etc.) or may be expressed in a functional form (for example square root of time, etc.), (Ortuzar 1994). In this research, the function BM_j^i fulfils this requirement, such that:

$$V_j^i = BM_j^i \tag{7.7}$$

The choice probability is then given as:

$$P_j^i = \frac{\exp(\beta_j \cdot BM_j^i)}{\sum_m \exp(\beta_m \cdot BM_m^i)} \tag{7.8}$$

where

β_j = estimable model parameter

It may be recalled that BM_j^i represents the index measure of accessibility benefit of activity *j* for the individual *i*. The explanatory variables of this function comprise three types of attributes, i.e. for:

a) the individual (for example income, individual type, etc.)
b) the transport system (for example travel mode, cost of travel, etc.)
c) the activity (for example number of shops, number of jobs, etc.)

With the properties of BM_j^i described above, it may further be stressed that BM_j^i can be utilised as a proxy for the individual utility U_j^i.

The system of simultaneous equations (7.8) for all activities *j* is to be solved for the parameter β. The estimation procedure must be designed to give an unbiased estimate of β. The maximum likelihood procedure, as explained later, is used to estimate the parameter β using the individual *BM*'s as well as observed choices for various activities. Therefore, in the model estimation stage, only the parameters β are estimated. When estimated from the individual observations, they provide the effect of the relevant *BM* in explaining the choice of the activity.

Data

In the travel demand modelling framework developed in this research, the probability of an individual *i* selecting an activity *j* gives an estimate of the individual travel demand, thus:

$$T_j^i = P_j^i \qquad (7.9)$$

where:

T_j^i = travel for activity *j* by the individual *i*

From the activity diary of each individual, a vector Y_j^i could be formed which represents the travel for all activities (*j = 1, 2, …J*) for each individual *i*. This vector would be composed of 0's and 1's, such that:

$$Y_j^i = \{y_j^i\}; \; j = 1, 2, \ldots J \qquad (7.10)$$

where

$$y_j^i = \begin{cases} 1 & \text{if individual } i \text{ travels for the activity } j \\ 0 & \text{otherwise} \end{cases}$$

J = total number of activities

As an example, the vector Y_j^i for the five activities; work, school, market, health, and social interaction, may look like:

$$Y^{i^T} = < 1 \ 0 \ 0 \ 1 \ 1 > \quad (7.11)$$

where

T = transpose

This means that for each individual a binary observation (choice) is available in the form of 0 or 1; 0 if travel for the activity does not materialise and 1 if it does.

Estimation of model parameters - Maximum Likelihood procedure

Model parameters are estimated by relating modelled values to the observed data. Considering that the multinomial logit model in equation (7.8) describes the behaviour of individuals, P_j^i gives the probability density function for each individual. One of the ways to relate these probabilities to the observed choices y_j^i is to form a likelihood function. The likelihood function *L(β)* can be given as:

$$L(\beta) = \prod_{i=1}^{N} \prod_{j \in C_i} (P_j^i)^{y_j^i} \quad (7.12)$$

where

$L(\beta)$ = the likelihood function for the parameter β

P_j^i = the probability that individual *i* chooses activity *j*

C_i = the choice set for the individual *i*, such that *j* is the element of C_i.

N = total number of individuals in the sample

y_j^i = the observation of the choice of alternative *j* by the individual *i*;

It can be seen in equation (7.12) that the term $\prod_{j \in C_i} (P_j^i)^{y_j^i}$ represents the joint probability density function for one individual, comprising *all* the alternatives in the individual's choice set. Looking at the formulation of this expression it is clear that in the joint density, the actual choice (y^i_j) plays an important role. This means that in the instances of no choice (y^i_j =0), it causes a null operation in the multiplication process, and in the case of a choice (y^i_j =1), it preserves the modelled probability value P^i_j.

Maximisation of the function $L(\beta)$ in equation (7.12) will give the value of the model parameters β which, theoretically, maximise the likelihood of generating the observed sample most often (Ortuzar 1994). The first step in maximising $L(\beta)$ is to take logs of both sides of equation (7.12), which gives:

$$L^*(\beta) = \sum_{i=1}^{N} \sum_{j \in C_j} y_j^i (\beta \cdot BM_j^i - \ln \sum_{m \in C_i} e^{\beta \cdot BM_m^i}) \tag{7.13}$$

where

$$L^*(\beta) = \log L(\beta) \tag{7.14}$$

is called the log-likelihood function. In order to find the value of the model parameters β, the maximum of the log-likelihood function $L^*(\beta)$ needs to be determined. This is done by setting the partial derivative of equation (7.13) with respect to β equal to zero. This operation is given as:

$$\sum_{i=1}^{N} \sum_{j \in C_j} [y_j^i - P_j^i] \cdot BM_j^i = 0 \tag{7.15}$$

where the left hand side of equation (7.15) is the partial first derivative of the log-likelihood function $L^*(\beta)$, with respect to β. The solution of the simultaneous equations (7.13) for all activities j will give the estimate of the model parameter β.

Aggregate demand

If the explanatory variable in equation (7.13), BM_j^i in this case, includes an alternative specific constant, then it can be shown that the summation of the estimated probabilities over the entire sample is equal to the aggregate observed choice for the sample (Ben-Akiva and Lerman 1985, Ortuzar 1994), i.e.:

$$\sum_i y_j^i = \sum_i P_j^i \tag{7.16}$$

where the summation is carried out over the entire sample, for whom the choice is relevant.

This means that the summation of individual probabilities gives the number of persons in the sample that chose alternative *j*. In the conceptual formulation for this research, this is actually the total number of trips for the activity *j*, i.e.:

$$T_j = \sum_{i=1}^{NI} \Pr(T_j^i) \tag{7.17}$$

where

T_j = aggregate travel demand for the activity *j*

($NI \in N$) represents total number of individuals of type I in the sample

It is important to note that equations (7.16) and (7.17) are only applicable if the individual probabilities P_j^i are computed from the model parameters β obtained from Maximum Likelihood (ML) estimation (or any compatible procedure). Furthermore, they are to be specified for a given choice *j*, and a given individual type *I*.

7.2.4 Binary logit model

Model specification

The Binary logit (BNL) model is a special case of the multinomial logit model, where only one variable (activity) is considered at a time. This is a binary choice of the activity being selected or otherwise. The model specification of the binary logit model (Cramer 1991) is given as:

$$P_j^i = \frac{\exp(\beta \cdot BM_j^i)}{1 + \exp(\beta \cdot BM_j^i)} \tag{7.18}$$

where all the variables are as defined in equation (7.8) above. The model parameter β may be estimated using the maximum likelihood procedure, on the same lines as in the case of MNL model, explained earlier.

7.2.5 Grouped regression model

In this procedure, the data is grouped on the basis of the explanatory variable (Gujarati 1995). The probability of choosing an alternative can be given as the relative frequency for each group, such that:

$$P_q = \frac{n_q}{N_q} \tag{7.19}$$

where:

P_q = relative frequency for the group q

n_q = number of individuals in group q choosing the activity (for which the model is being estimated)

N_q = total number of members belonging to the group q

This method consists of formulating a logistic regression function, which, when transformed on a suitable scale, is converted into a simple linear regression model. The concepts of linear regression are then applied to estimate the model parameters. These model parameters serve to estimate the modelled relative frequencies P_q for each group q.

Model specification

Using the explanatory variable as well as the observed frequency for each class, a linear regression function is formulated which is of the form:

$$L_q^* = \beta_1 \cdot \sqrt{w_q} + \beta_2 \cdot X_q^* \quad (7.20)$$

where

L_q^* = transformed logistic regression function L_q

L_q = $\ln(\frac{P_q}{1-P_q})$

w_q = $N_q \cdot P_q \cdot (1-P_q)$

β_1 , β_2 = estimable model parameters

x_q = BM_j^q; the explanatory variable for regression model

BM_j^q = average value of the variable BM for group q for the activity j

X_q^* = $x_q \cdot \sqrt{w_q}$; the transformed explanatory variable

Estimation of model parameters

The data on explanatory variables is used to form groups which are used, along with the corresponding observed choice, in equation (7.20). The model in equation (7.20) is a linear regression model. The parameters β_1 and β_2 are estimated using standard linear regression methodologies. The estimated model parameters provide estimates of the probability P_q for each group q.

Aggregate demand

The equation (7.19) estimates probability as a relative frequency, which can be connected to the class frequency, the ultimate objective of the exercise. In this method, the model accuracy is highly dependent on the grouping of the explanatory variable (BM) such that the total number of members in each group must be at least 5 (Gujarati 1995).

7.2.6 Summary of model development approaches

Table 7.1 presents an overview of the three methods (model forms) used. According to the table, BM is the explanatory variable for MNL and BNL model forms. The grouped regression model form uses classified BM's. The dependent variable is the observed binary choice for the activity for which the model is being developed. It is clear from Table 7.1 that the development of each of these models requires formulation of individual accessibility indices BM_j^i and the individual choice vectors Y_j^i. The empirical development of the parameters of the BM model is explained in the proceeding paragraphs. These parameters will be used in the development of the BM_j^i vector for each individual. The formulation of observed choice vectors is carried out next. The development of choice models is carried out on the basis of explanatory and observed choice variables.

Table 7.1 Overview of the estimation methods

Method	**Model form**	**Data**		**Estimated parameter(s)**
		Explanatory Variable	*Dependant Variable*	
1. Multinomial logit model	$P_j^i = \frac{\exp(\beta \cdot BM_j^i)}{\sum_m \exp(\beta \cdot BM_m^i)}$	BM_j^i *	Y_j^i	β
2. Binary logit model	$P_j^i = \frac{\exp(\beta \cdot BM_j^i)}{1+\exp(\beta \cdot BM_j^i)}$	BM_j^i *	Y_j^i	β
3. Grouped regression model	$L_q^* = \beta_1 \cdot \sqrt{w_q} + \beta_2 \cdot X_q^*$	BM_j^q **	n_j^q	β_1, β_2

* i=1,2,…,I (total number of individuals)

** q=1,2,…,Q , (total number of BM groups)

7.3 INDIVIDUAL ACCESSIBILITY BENEFIT INDICES

The accessibility benefits model BM, described earlier, serves as the proxy of individual utility in modelling individual travel behaviour within the accessibility-activity framework. The BM integrates a number of factors at various levels. These factors were given empirical values on the basis of data collected as well as the knowledge obtained after the activity-travel behavioural analysis was carried out on the data. The functional form of the BM model was given earlier (equation 4.1), and repeated here:

$$BM_j^i = \exp\left[-\left(\frac{m}{\alpha I}+\frac{1}{v}\right)2x_k\right]\cdot[c\rho\omega]\cdot h^{\gamma}[\tau-\frac{2x_k}{v}]^{\gamma} \qquad (7.21)$$

The basic description of these parameters is given in Table 7.2. The table identifies data sources for each parameter in order to estimate their empirical values. Some of the parameters of the BM model are obtained directly from the database, while the others need to be derived from basic definitions of the parameters. Detailed development of such parameters is given in the succeeding paragraphs (cross-referenced in Table 7.2).

Table 7.2 BM model estimation procedure

Model Parameters	Description	Data source	Further Details
m	Monetary travel cost per km	Activity data	N.A
α	Value of travel time coefficient	Published data	7.3.1
I	Household income	Household data	N.A
v	Speed of travel in km/hr	Activity data	N.A
x	Distance to the location in km	Activity data	N.A
ρ	Level of activity parameter	Village data	7.3.2
ω	Attraction characteristics of the activity	Activity data	7.3.3
c	Model calibration parameter	Village data	7.3.4
h	Measure of utility per unit time	Activity data	7.3.5
γ	Marginal utility of time	Activity data	7.3.6
τ	Total time budget	Activity data	N.A

7.3.1 Value of travel time coefficient

A detailed study must be carried out to obtain a true estimate of the value of travel time coefficient α . Considering the scope of this research, use was made of published research to determine the value of α to be used in BM. Whittington et al (1990) estimated the value of time for water collection to be 25% of household income. Hine, et al (1998) recommended that the value of time must be different for work and non-work activities.

On the basis of the above consideration, it may be argued that the value of travel time must be a factor of household income, and that it must be different for work (earning) and non-work (non-earning) activities. The following values are, therefore, assumed for the value of time parameter α (Gwilliam 1997):

α = 1.33; for compulsory activities, i.e. Work and Health

α = 0.33; for non-compulsory activities, i.e. School, Market, and Leisure

7.3.2 Level of activity

The level of activity parameter ρ considers the effect of availability of an activity. Odoki (1998) defined a number of measures to be used in the functional form for ρ. The relevant measures are used for each activity as defined in village level data and summarised in Table 7.3. These measures are defined by means of variable '*s*' for the relevant activity.

Table 7.3 Derivation of level of activity parameter ρ

ACTIVITY	MEASURE	CLUSTERS				
	s	C1	C2	C3	C4	C5
Work	No. of jobs	388	100	216	500	250
Market	No. of shops	36	30	9	10	10
School	No. of places	73	350	243	136	200
Health	Distance-nearest	2	10	10	15	20
Social	No. of households	231	400	291	155	300
	EXPRESSION	C1	C2	C3	C4	C5
Work	1-1/exp(s)^0.01	0.979	0.632	0.885	0.993	0.918
Market	1-1/exp(s)^0.1	0.973	0.950	0.593	0.632	0.632
School	1-1/exp(s)^0.1	0.999	1.000	1.000	1.000	1.000
Health	1-1/exp(s)^0.1	0.819	0.368	0.368	0.223	0.135
Social	1-exp(s)^-0.02	0.990	1.000	0.997	0.955	0.998

The mathematical form for each activity utilises the relevant measure. Each of the expressions yields the maximum value as unity. The unit value is considered as a reference datum. The rationale of development of the expression for each activity was to bring them to a common datum. The coefficients are adjusted to take account of the actual range in the data.

7.3.3 Attraction characteristics of the activity

The parameter ω represents the relevance of an activity to an individual type and considers how the individual would perceive the activity within the household context. The households were asked to rate the importance of each activity for their household. This variable was called 'scale' in the household questionnaire. In addition to this, each household was also asked to identify the individual responsible for carrying out the activity. These two measures provided the basis for the development of empirical values of the parameter ω, to define attraction of an activity for each individual. The expression used was:

$$\omega_j^i = \frac{D_j^i}{scale_j} \tag{7.22}$$

where

ω_j^i = attraction parameter for activity j for the individual i

D_j^i = a dummy variable which is equal to 1 if activity *j* is relevant to individual *i*; zero otherwise

$scale_j$ = the scale (a number between 1 and 5), for the activity *j* reported by the household for non-work activities; equal to 1 for work/school

The values of D_j^i are obtained from the individual-activity relevance matrix as given in Table 7.4.

Table 7.4 Individual activity-relevance matrix

IDTYPE		WORK				SCHOOL				MARKET				HEALTH				LEISURE			
		LCS1	LCS2	LCS3	LCS4	LCS1	LCS2	LCS3	LCS4	LCS1	LCS2	LCS3	LCS4	LCS1	LCS2	LCS3	LCS4	LCS1	LCS2	LCS3	LCS4
HEAD	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
PARTNER	2	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
CHILD>15	3	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
CHILD<15	4	0	0	0	0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

7.3.4 Model calibration parameter

The BM model calibration parameter *c* accounts for the levels of each activity within the maximum levels planned or achievable in the policy context (Odoki 1998). The value of *c* may be found as a ratio of the current levels of activity and possible maximum levels achieved. From the rural household data, it was possible to derive empirical values of the parameter *c* for each activity. The results are summarised in Table 7.5.

Table 7.5 Values of model calibration parameter

ACTIVITY	MEASURE and EXPRESSION	CLUSTERS				
		C1	C2	C3	C4	C5
Work	No. of Jobs/2*HH	0.420	0.125	0.371	0.968	0.417
Market	1/exp(dist)	0.050	1.000	0.077	1.000	1.000
School	1/exp(dist)	0.378	0.743	0.017	0.500	0.500
Health	1/exp(dist)	1.000	0.250	0.368	0.154	0.111
Social	1/exp(no. of loc.)	1.000	0.800	0.600	0.400	0.200

7.3.5 Measure of utility parameter

The parameter *h* is a scale parameter used as a measure of utility per unit of time that the person is engaged in the activity. Odoki (1999) suggested that the value of *h* for the activities Work, School and Health may be taken as unity. This notion is incorporated in the development of the mathematical form for the value of the parameter *h*. The expression used for the parameter *h* for each activity *j* is:

$$h_j = \begin{cases} 1; \text{if } \ \mathrm{j} = \text{Work, School, Health} \\ \dfrac{T_j}{T_H}; \text{if } \ \mathrm{j} = \text{Market, Leisure} \end{cases} \tag{7.23}$$

where

h_j = measure of utility parameter for activity *j*

T_j = actual duration for activity *j*

T_H = actual duration for activity Health

7.3.6 Marginal utility of time parameter

The marginal utility of time parameter γ is related to the activity type and individual type (Odoki 1998). With the help of case studies, Odoki (1998a) argued that participation in earning activities gives the relative weighting of the value of γ for work as well as other activities. The functional form developed for the marginal utility of time parameter γ incorporates these notions, i.e.:

$$\gamma_j^i = \left[1.5 - \frac{1}{\exp(a_j^i)^{0.15}}\right] * D_j^i \qquad (7.24)$$

where

γ_j^i = value of time parameter for activity *j* and individual *i*

a_j^i = amount of time available for the activity participation

such that

$$a_j^i = \begin{cases} \tau - 2 * t_W \text{; if } j = \text{work} \\ \tau - T_w - 2 * t_W \text{; if } j \neq \text{work} \end{cases} \qquad (7.25)$$

τ = total daily time budget; from rural household survey this value is set to be equal to 14 hours.

t_W = travel time spend in activity Work

T_w = actual duration of work

D_j^i = dummy variable representing relevance of activity *j* for individual *i* such that

$$D_j^i = \begin{cases} 1 \text{ if activity } j \text{ is relevant to the individual } i \\ 0 \text{ otherwise} \end{cases}$$

The coefficient (0.15) used in equation (7.24) was derived from the household data, such that the maximum value of γ_j^i be equal to unity.

7.3.7 Behavioural analysis of BM values

The BM parameters derived above were used to obtain BM arrays for each individual. The array contains BM for various activities relevant to the household and individual types. A behavioural analysis of the resulting BM values was carried out. The purpose of this analysis was to establish the relevance of using BM as a proxy to the utility function, in the development of probabilistic choice models. Table 7.6 contains the average BM values classified on the basis of individual type and activity type. These values were obtained by combining all clusters.

Table 7.6 Average BM and activity participation by individual and activity types

TYPE	ACTIVITY	AVERGAE BM	% CHOOSING ACTIVITY
ALL INDIVIDUALS	WORK/SCHOOL	12.763	48.26%
	MARKET	3.555	2.68%
	HEALTH	1.900	0.27%
	LEISURE	9.168	48.79%
HOUSEHOLD HEADS	WORK	10.203	75.00%
	MARKET	3.989	9.00%
	HEALTH	1.670	1.00%
	LEISURE	3.361	15.00%
PARTNER	WORK	16.396	5.00%
	MARKET	3.989	
	HEALTH	4.000	
	LEISURE	15.906	95.00%
CHILD>15	SCHOOL	5.955	77.27%
	MARKET	0.000	
	HEALTH	2.000	
	LEISURE	0.850	22.73%
CHILD<15	SCHOOL	13.044	54.97%
	MARKET	3.499	0.66%
	HEALTH	0.600	
	LEISURE	9.763	44.37%

It may be seen in Table 7.6 that the BM value for Work is highest of all the activities. It may be recalled that the BM accounts for utility of the activity for the individual concerned. The higher value of value of time coefficient α for Work results in higher values for BM-Work. Furthermore, the main reason for a lower BM for Market and Health is their high average travel distances. The BM for Leisure activities has a high value because of the short travel distances for people involved in these activities. It should be noted that the activity Leisure contains all forms of social and recreational involvement of individuals.

In order to understand the behavioural basis of using BM as a proxy utility function, the effect of BM on the choice of activities was analysed using data from Table 7.6. Figure 7.1 illustrates the variation of observed percentage of individuals choosing activities in relation to the BM of the activity. Due to the wide variation in data, the exponential regression model explains less than 50% of the variation in the data.

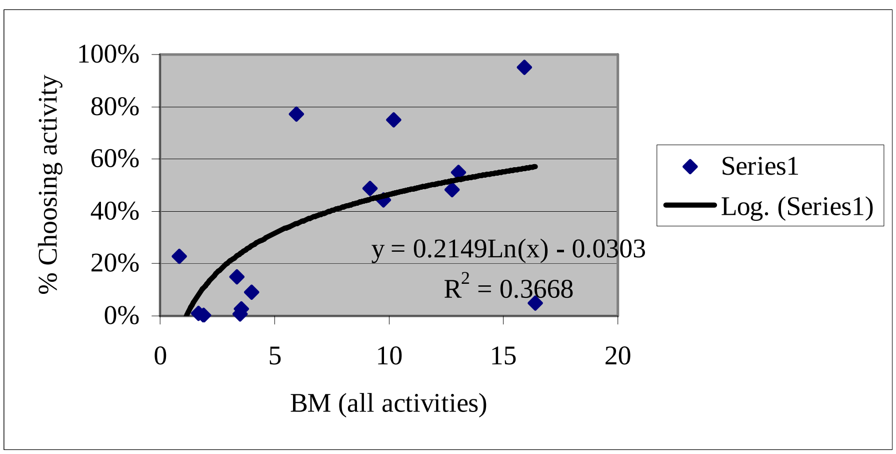


Figure 7.1 Behavioural analysis of BM values (all individuals)

Further analysis of the data in Table 7.6 and Figure 7.1 revealed two outliers; the Work trips by Partner, and Leisure trips by Child>15. It may be argued that the exclusion of these points would not make a serious impact on the overall analysis for the following reasons:

a) Generally in Pakistan Work trips by housewives constitutes a very low proportion in rural areas due to cultural reasons, as evident in the data from Hala and Khuzdar.
b) The Leisure trips, by Child>15 is the result of the disproportionately low number of data points for this individual type. The household data for Hala (from which Table 7.6 was formed) contains 22 individuals of type Child>15; as compared to 100 Household Heads, 100 Housewives and 151 Child<15 years. The exclusion of the individual type, Child>15 would, therefore, not undermine the overall travel demand estimation process conceptualised in this research.

Excluding the two points (Work trips by Partner and trips for Leisure by Child>15years) gave the set of values plotted in Figure 7.2.

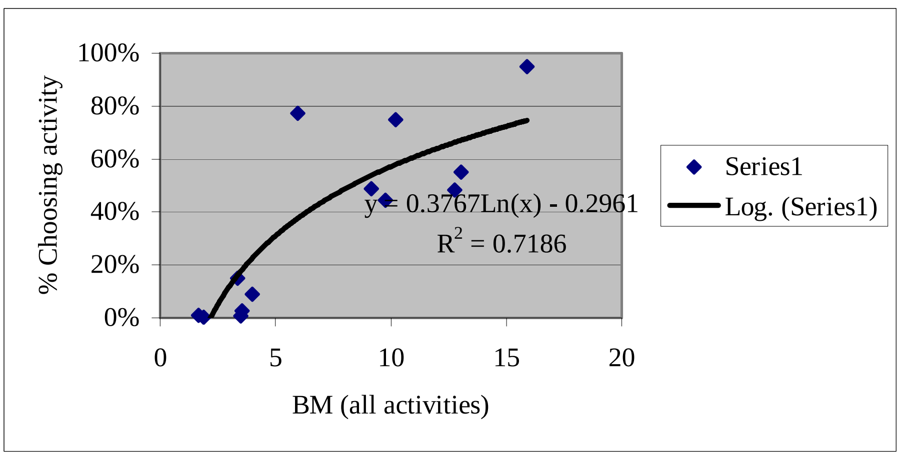


Figure 7.2 Effect of excluding Work trips by Partner and Leisure trips by Child>15

The analysis of the regression model in Figure 7.2 leads to the following conclusions:

a) The overall trend is exponential with regression explaining about 70% of the variation in the data, which means that the conceptual basis of application of logistic regression models can be considered valid for the data in consideration

b) The work trips by Partners and Leisure trips by Child>15, have a different trend compared to the overall population, and the resulting regression model is improved by excluding the direct effect of this variation.

A further analysis was carried out by excluding the two individual types, i.e. Partner and Child >15. In Figure 7.3 the regression explains more than 80% of the variation in data. It may be noted, however, that these individual types are included in the 'all individuals' category.

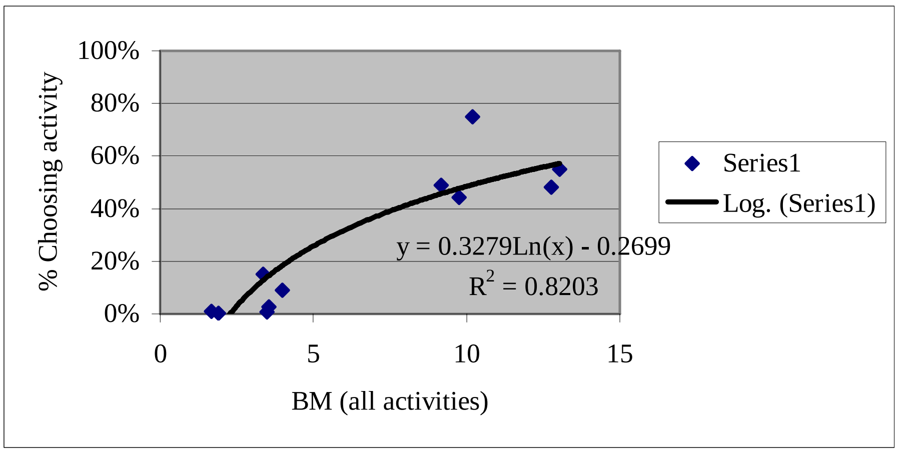


Figure 7.3 Behavioural analysis of BM values (excluding Partner and Child>15)

The above analysis leads to the following conclusions:

1. The accessibility benefits model BM is justified for its use as a utility index to model individual behaviour. This is based on the premise that the choice of an activity increases as the accessibility benefit of the activity increases. The increase, however, tends to reach a maximum value beyond which further increase in the utility of the activity would not result in an increase in the aggregate choice. Therefore, this supports the concept of reduced incremental benefits of any increase in the available time for activity participation (as discussed in the development of the discrete choice approach).

2. The concepts of logistic regression may be applied to the data as the proportion of a population choosing an activity vary exponentially with the increase in the explanatory variable BM. This generalisation was, however, obtained by recognising the difference in travel pattern by housewives and Child>15. This point can be addressed by development of travel demand models for each individual type and for each activity type.

On the basis of this analysis, it seems appropriate to use BM as a proxy to the utility function in the specification of discrete choice models. Further, the probability density function used in equation (7.8) ranges between 0 and 1, while BM may range between 0 and ∞, (although usually it is some finite number). The models were developed for each activity type and each individual type, as explained in section 7.5.

7.4 OBSERVED VECTOR

The development of discrete choice models requires identification of the observed choice made by the sample studied. Interpretation of the outcome is based on the definition of the dependent variable for which actual observations are carried out. This research defined the observed choice as participation in non-home activities. The one-way non-home-based travel for an activity was defined as the travel demand in the concepts developed in this research. The choice of an out-of-home activity, therefore, becomes the observed choice for the model estimation and predictions. Data was collected at an individual level about their daily involvement in the activities Work and School. Data was also collected at household level about the frequency type for activities Market, Health and Leisure. The two sources were used in the development of an observed choice vector for each individual.

7.4.1 Methodology of obtaining observed choice vectors

The activity diaries of individuals provided information about their daily involvement in non-home activities. As explained earlier, during the data processing stage, the activity diary was coded in order to place an individual in one of the three states, i.e. travel, non-home activity participation and home activity participation. This code numbering further enabled analysis of the salient change points from one stream (for example travel, 0-8) to another (for example non-home activities, 9-15). Figure 7.4 illustrates the daily activity-travel patterns of two individuals, both Household Heads.

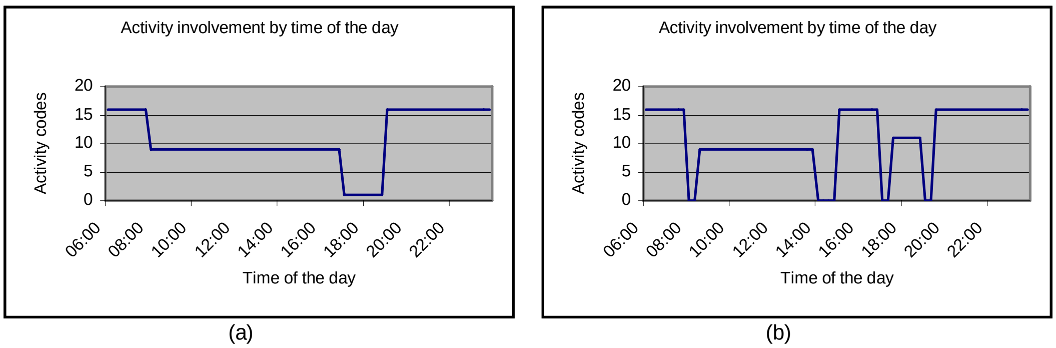


Figure 7.4 One-day activity-travel pattern of representative individuals

Both individuals chose non-home activities. For this purpose they needed to travel. The first individual (a) had a single non-home journey, while the second individual (b) made more than one non-home journey. For the purpose of travel demand modelling, the two patterns may be conceptually represented by Figure 7.5.

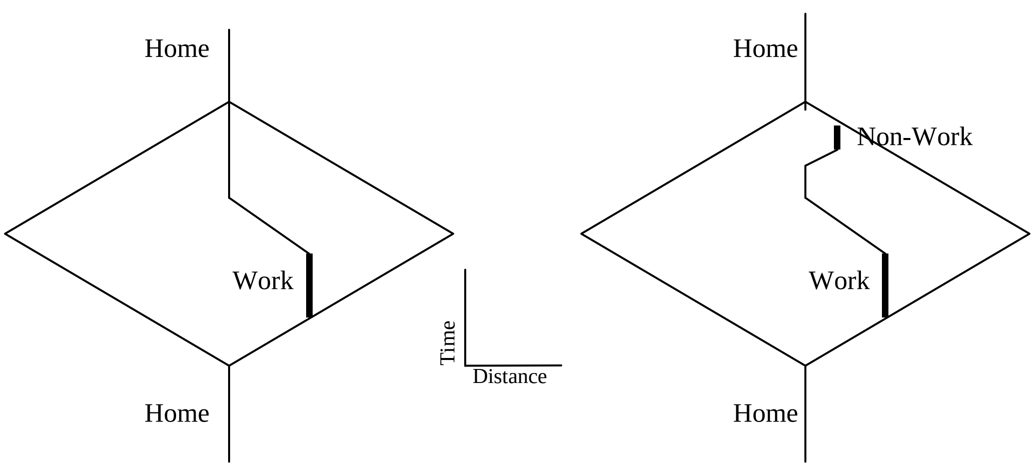


Figure 7.5 TSP Models of observed behaviour

On the basis of Figure 7.5, the travel for each non-home activity is modelled as a single non-home trip. This means that the first individual would take up a single non-home journey and the second individual would be required to take two non-home journeys. One journey constitutes two trips.

The observed vector for each individual contains four slots, represented by 0 or 1. Each of these four slots represents one activity, Work/School, Market, Health and Leisure, respectively. The slot contains 1 if the individual travelled for the activity and 0 otherwise. The observed vector for each individual contains 0 or 1 at the place of all the activities, representing non-participation and participation, respectively.

This results in a matrix for the whole sample considered. This matrix contains the observed vectors for all the sample individuals considered. Each individual vector consists of 4 slots to indicate whether or not the choice of the activity has been taken.

7.4.2 Multinomial choice and the time segments

From the analysis of the activity-travel patterns of the rural individuals it became clear that there exists a distinct behaviour within various times of the day. This means that the whole day (15 hour time duration) can be divided into time segments, the boundaries of which may be defined as the change points for a new pattern of behaviour. On the basis of the available data, five three-hour time segments may be defined as:

1. 0600-0900
2. 0900-1200
3. 1200-1500
4. 1500-1800
5. 1800-2100

Figure 7.6 presents the aggregate number of individuals (in cluster-1) involved in any activity during each of the five time segments. Clearly, the number of individuals at any 'non-home activity' was at a maximum during the second time-segment, i.e. 0900-1200. Similarly, the number of people travelling was at a maximum during the first time-segment, i.e. from 0600 to 0900.

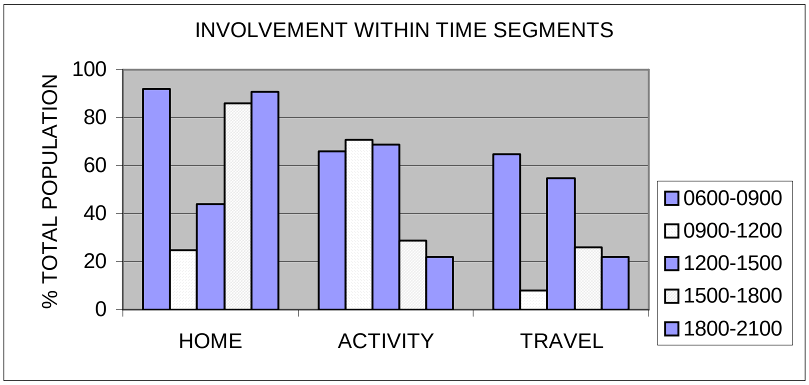


Figure 7.6 Placement of individuals at various times of the day

The above definition of time segments was used to define the multinomial choice of an activity. It considered the choice of an activity from several alternatives. As the choice in this research was defined as activity participation, the observed choice would therefore be defined as the participation of an individual in one of the four activities, i.e. Work / School, Market, Health and Leisure. For each of the five time segments, an individual will have one (and only one) choice. This conforms to an important requirement of the multinomial choice vector formulation (Ben Akiva and Lerman 1985), which is defined mathematically as:

$$\sum_{j=1}^{J} y_j^i = 1 \tag{7.26}$$

where all terms are as defined earlier (equation 7.10).

7.5 ESTIMATION OF MODEL PARAMETERS

This second stage of model verification comprises prediction of aggregate frequencies for various activities. This was carried out using alternative model forms. The conceptual and mathematical development of these model forms was presented earlier in this chapter. Data collected for this research formed the database for development of discrete choice models. The database was used for empirical estimation of the model parameters, which became the basis for the prediction of aggregate travel demand for various activities.

The individual BM vectors developed were used as explanatory variables, and individual travel for an activity was used as the observed choice for the estimation of probabilistic choice models. The models developed were used to predict individual activity choice. The aggregate travel frequencies were compared against the observed behaviour, in order to assess the performance of these models. The individual BM vectors and observed choice vectors, described earlier, comprise the input for the model estimation stage. The full database was composed of 373 individuals (combining all clusters). For the purpose of statistical estimation of model parameters, this data set was divided into two data sets. One of the data sets, called the estimation data set was used for estimation of model parameters. The second data set, called the application data set was used for application of model parameters and prediction of aggregate responses.

7.5.1 Model parameter estimation methodology

7.5.1.1 Data sets

One of the aspects of the experimental design used was to divide the study area into clusters. Clustering was made around the main market centre serving as the centre of major activities for the adjoining villages. The market centre of district Hala acted as the centre of activities and five clusters were defined on the basis of distance from Hala. One village from each cluster was selected. A summary of the distances of these clusters is given in Table 7.7.

Table 7.7 Cluster set up for Hala

CLUSTER	VILLAGE NAME	DISTANCE FROM MARKET CENTRE
1	Hala Old	<1 km
2	Khandu	5 km
3	Saeed Khan Leghari	8 km
4	Mansoora	13 km
5	Wangheri	17 km

In the development of mathematical forms for BM parameters, due consideration was given to the clustering and their effects on the accessibility of activities. In the estimation of probabilistic models, clusters were combined to provide sufficient data points needed for the model estimation. The clusters 1, 2 and 3 were combined and called data set 1 and remaining clusters, 4 and 5, were combined to give data-set 2. The first data set was used in the estimation of model parameters. This provided the model form to be used for prediction. These models were then applied to the second data set, which was not used in model estimation. This predicted the individual choice probabilities for each activity. The aggregate demand was then estimated and compared with the observed frequencies and results were formulated. Table 7.8 provides diagnostics of the data sets.

Table 7.8 Description of data-sets

DATA SETS	PERSON TYPES	ACTVITIES											
		WORK/ SCHOOL			*MARKET*			*HEALTH*			*LEISURE*		
		0	1	TOTAL	0	1	TOTAL	0	1	TOTAL	0	1	TOTAL
1	1	5	55	60	11	49	60	49	11	60	53	7	60
	2	58	2	60	60		60	49	11	60	53	7	60
	3	3	16	19	10	9	19	12	7	19	13	6	19
	4	36	81	117	114	3	117	104	13	117	108	9	117
	ALL	102	154	256	195	61	256	214	42	256	227	29	256
2	1	4	36	40	22	18	40	40		40	40		40
	2	36	4	40	40		40	40		40	40		40
	3		3	3	3		3	3		3	3		3
	4	30	4	34	34		34	34		34	34		34
	ALL	70	47	117	99	18	117	117		117	117		117

Out of the 373 individuals, the estimation data set comprised 256 individuals and the application data set comprised 117 individuals. Columns 0 and 1 for each activity indicate the observed binary choice. In order to estimate the model parameters, the estimation data set must have some data in the columns labelled 1. The data set fulfiled this requirement.

Table 7.8 indicates that in the estimation data set (data set 1), the activity work/school has observations in all the four person types. The activity Market has no observations in the person type 2 (housewife). The application data set (data set 2), on the other hand, is for the application context and the sparseness of data here does not affect the model performance.

7.5.1.2 Model specifications

Various logistic regression model forms were developed to model individual choice behaviour. The modelling system uses three alternative modelling approaches. Model specifications were developed on the conceptual basis of the accessibility approach. The database provided the source data for estimation of the model parameters.

Multinomial logit model

The multinomial logit (MNL) model defines the probability of selection of an activity by an individual, considering all the activities in the choice set. The general form of the MNL model used was:

$$P_j^i = \frac{\exp(A_j)}{\sum_{m \in C} \exp(A_m)} \tag{7.27}$$

where

$$A_m = \sum_{m \in C} (\beta_m)^j BM_m^i \tag{7.28}$$

j = the activity for which model is being estimated

m = all activities comprising the choice set of individual i

$\{\beta\}^j$ = the vector of model parameters for j^{th} activity

BM_m^i = utility index for the individual i for each activity m in his choice set C, and

$$A_j = (\beta_j)^j BM_j^i$$

Equation (7.26) means that the estimation of probabilities of each activity will require a set of model parameters $(\beta)_m^j$ specific for the activity *j* with coefficients for each activity *m* entered into the model. Similarly, there would be a set of model parameters $\{\beta\}^j$ for each activity analysed.

Binary logit model

The Binary logit (BNL) model is a reduced form of the MNL model. It predicts the probability of the choice of a single activity. It considers binary choice of one activity as a multivariate problem. It therefore uses a modified form of equation (7.27), i.e.

$$P_j^i = \frac{\exp(A)}{1 + \exp(A)} \qquad (7.29)$$

where

$$A = \beta^j BM_j^i \qquad (7.30)$$

where:

j	=	the activity for which model is being estimated
$\{\beta^j\}$	=	the vector of model parameters for activity *j*
BM_j^i	=	utility index for the individual i for each activity j for which the model is being estimated

7.5.1.3 Model selection criteria

Model parameters were estimated for each of the activities Work/School, Market, Health and Leisure. Estimation of model parameters was carried out using data set 1. The statistical package SPSS (version 10, 2000) was used for this purpose. The model statistics helped in drawing inferences about the validity of the model to be used for prediction purposes. Two test statistics were used for assessing model validity; the

Likelihood ratio (LR) for the whole model and the Wald statistic for each parameter. The conceptual basis for application of these test statistics is defined in subsequent paragraphs.

The Likelihood ratio test

The likelihood ratio test determines the deviation of the logistic regression model (Hosmer and Lemeshow 1989). The LR value is χ^2 distributed with k degrees of freedom, where k is equal to the number of parameters in the model (Ortuzar 1994). It accounts for all model parameters. This test statistic provides the basis of checking level of significance for the model as a whole. Further, higher values of LR are desirable in order that the model be statistically significant. The form of the testable statistic is:

$$LR = -2 \left\{ \log L(0) - \log L(\hat{\beta}) \right\} \tag{7.31}$$

where

LR = the likelihood ratio

$\ln(\hat{\beta})$ = log of likelihood function using the values of β which maximise the likelihood function.

$\ln L(0)$ = log of likelihood function at $\beta = 0$

The model for each activity describes the choice of the activity based on the effects of the accessibility benefit of all the activities available to the individual. Each model comprises the coefficients $\{\beta\}^j$ specific for the activity. The basis of model validity would be the significance level of χ^2 estimated from LR and degrees of freedom (total number of independent variables). A significance level of 90% was desirable for the model selection.

Wald statistic

The Wald statistic provided the significance of each coefficient on the basis of the estimated value of the coefficient in comparison to its standard error (Hosmer and Lameshow 1989). Its use in logistic regression may therefore be regarded as similar to the use of t-statistic in linear regression. The value of Wald statistic of ≥ 2 (or significance level of 90% or above) were considered appropriate for deciding upon statistical significance of a coefficient to be included in the model. This process, however, was achieved automatically by using 'backward elimination' option available in the statistical package SPSS. The use of backward elimination provided the final model composed of statistically significant coefficients (after eliminating all the variables not explaining the data).

All the models reported in the following sections were the final models obtained using the above methodology.

Grouped regression models

The grouped regression approach first classifies the explanatory variable into groups. It then develops logarithmic regression models on the basis of observed choice within the classes of the explanatory variable. For this reason, it can only handle one activity at a time. Data from the estimation data set was grouped for the BM of each activity. The parameters in the grouped regression equation (7.20) can be estimated using linear regression methodology. The linear regression test statistics (R^2, F and t) become guidelines for model selection, i.e. R^2 and F statistic for the selection of model as a whole and t statistic for the selection of individual coefficients β_1 and β_2.

7.5.2 Development of multinomial logit models

Multinomial logit models were developed for daily activities performed by rural individuals. As explained earlier, data for the observed choice was processed on the basis of time segments that the whole day is divided into. The model for each time segment predicts individual probability of choosing one of the four activities within the time segment. The four activities considered were: Work/School, Market, Health and Leisure. These models are summarised in Table 7.9. The variables BMWS, BMMAR, BMHLT and BMLEI, represented the accessibility benefit of participation in activities Work/School, Market, Health and Leisure, respectively.

Table 7.9 Multinomial logit models (all individuals)

TIME SEGMENT	INDIVIDUAL TYPE	CHOICE[1]	PARAMETER ESTIMATES[2]					MODEL STATISTICS[3]		
			Constant	BMWS	BMMAR	BMHLT	BMLEI	*LR*	*df*	*p value*
1 (0600-0900)	HEAD	1		0.120	0.128			81	8	0.000
		2			0.131	-0.744				
	PARTNER	1	-3.668	-0.070				213	16	0.000
	CHILD>15	1	1.468	-0.070						
	CHILD<15	1	1.433	-0.070						
2 (0900-1200)	HEAD	1		0.220	0.092			43	4	0.000
	PARTNER	1	-3.508	-0.071				169	8	0.000
	CHILD>15	1	1.431	-0.071						
	CHILD<15	1	1.475	-0.071						
3 (1200-1500)	HEAD	1		0.256	0.117			47	4	0.000
	PARTNER	1	-3.477	-0.066				180	8	0.000
	CHILD>15	1	1.450	-0.066						
	CHILD<15	1	1.475	-0.066						
4 (1500-1800)	HEAD	1		0.109	0.104			67	8	0.000
	PARTNER	1	-4.005					168	24	0.000
	CHILD>15	1	-0.815							
	CHILD<15	1	-2.536							
5 (1800-2100)	HEAD	1		-0.082			0.100	119	12	0.000
		2			-0.177					
	PARTNER	(NO MODELS POSSIBLE)						166	24	0.000
	CHILD>15	1	-1.248							
	CHILD<15	1	-3.674							

Notes:

1 Choice codes: 1=WORK; 2=MARKET; 3=HEALTH; 4=LEISURE

2 Parameter estimates are reported for the parameter coefficients found to be at or above 90% significance level.

3 Model statistics refer to the overall model providing the parameter estimates, the degree of freedom (df) refers to this overall model. The p-value is the significance level of the Chi- Square test statistic, given as a probability value; a zero indicates very low value

All models reported in Table 7.9 have each parameter at significance level of 90% or above. This was possible using the concept of Wald statistic, as described earlier. The statistics related to the model as a whole are the likelihood ratio and its chi-square level of significance, based on the degrees of freedom of the model (the number of coefficients considered in the full model).

All the multinomial logit models reported in Table 7.9 conform to equation (7.26). Each model in the table predicts the probability of selection of a particular activity on the basis of the estimated model parameters. For example, in time segment-1, models for Work and Market (choice 1 and 2, respectively) for Household Head were used to estimate probability of selection of Work and Market, respectively. The probability of the remaining activities, Health and Leisure were found using the basic probability concepts (total probability must sum to unity).

It must be stressed here that the BM of any activity defines the utility of the activity participation for the individual. On this basis it may be argued that increased accessibility benefit of activity Work would increase the travel demand of the Household Heads. The travel demand for the housewives (Partner) would be unaffected by any increase in accessibility benefit of activity Work. Furthermore, the increased accessibility benefit to School would increase the travel demand of both Child types because of positive constants in the models.

7.5.3 Development of binary logit models

Binary logit models were formulated for all activities, for all individual types. Final models obtained on the basis of statistical justifications are presented in Table 7.10. Individual BM's act as the explanatory variables in each model. The symbol used for each of these variables is according to the effects they are representing. The models given in shaded blocks define the base models developed by considering individual type as an explanatory variable in the model. These models are interpreted in the form of a modified equation (7.29) as:

$$P_j^i = \exp(\lambda)\frac{\exp(A)}{1+\exp(A)} \tag{7.32}$$

where

λ = a coefficient defined as indicator

all other parameters are same as equation (7.29)

All the models based on this concept contain a base model (shaded blocks in Table 7.10) and a coefficient (λ). All shaded blocks in a given activity choice share the same base model. One of these base model has λ=0, indicating the individual type to be the base individual. It may be readily seen that with λ=0 the equation (7.32) would result in a base probability value. For the other individual types sharing the base model this base probability is modified using the relevant coefficient (λ).

On this basis, the models for activity Work for Partner, Child>15 and Child<15 share one base model (shaded blocks). The relevant value of the coefficient λ provides different probability values for each of the individual types. The value of λ for Child<15 was 0, indicating it as the base individual type.

Table 7.10 Binary logit models (all individuals)

ACTIVITY CHOICE	INDIVIDUAL TYPE		PARAMETER ESTIMATES[1]					MODEL STATISTICS[2]		
		Indicator[1a]	Constant	BMWS	BMMAR	BMHLT	BMLEI	*LR*	*df*	*p-value*
WORK/ SCHOOL	HEAD			0.225	0.135			40	4	0.000
	PARTNER	-3.319				0.178	0.088	192	6	0.000
	CHILD>15	1.285				0.178	0.088			
	CHILD<15					0.178	0.088			
MARKET	HEAD				0.150	0.091		49	4	0.000
	PARTNER	-9.189		-0.069		-0.198	-0.164	162	7	0.000
	CHILD>15	1.435		-0.069		-0.198	-0.164			
	CHILD<15			-0.069		-0.198	-0.164	56	4	0.000
HEALTH	HEAD	3.486	-3.431		-1.388			105	7	0.000
	PARTNER	0.875	-3.431		-1.388					
	CHILD>15	1.674	-3.431		-1.388					
	CHILD<15		-3.431		-1.388					
LEISURE	HEAD	0.513	-1.878	-0.180				125	7	0.000
	PARTNER	-0.327	-1.878	-0.180						
	CHILD>15	0.961	-1.878	-0.180						
	CHILD<15					-0.672		31	4	0.000

Notes:

1 Parameter estimates are reported for the parameter coefficients found to be at or above 90% significance level.

1a Indicator variable adjusts the base model (shaded) to account for the effect of the individual type.

2 Model statistics refer to the overall model providing the parameter estimates, the degree of freedom (df) refers to this overall model. The p-value is the significance level of the Chi- Square test statistic, given as a probability value; a zero indicates very low value

In the model for activity Work, for Household Head, the probability of choosing Work is directly proportional to accessibility benefit of Work and Market. The model for work for Partner, for example, showed a joint effect of the utility of participation in Health and Leisure activities to be the cause for reported work trips. The negative value of constant in the model decreases the overall likelihood of participation in the activity Work for the Partner. The opposite was true in the case of Child types, i.e. a positive constant increases the likelihood of travel for School.

7.5.4 Grouped regression models

Using the estimation data-set, BM for each activity was classified into groups. The formation of the groups was carried out using SPSS statistical software on the basis of statistical clustering of the BM values. The resulting groups are given in Table 7.11.

Table 7.11 Average BM for each class (Household Head)

CLASS	WORK	MARKET	HEALTH	LEISURE
1	12.885	0.289	1.129	1.001
2	0.534	7.748	3.965	0.000
3	12.140	0.392	10.433	0.000
4	1.802	0.944	1.536	0.410

The total number of individuals belonging to each group, and the observed choice distribution for each activity, is given in Table 7.12.

Table 7.12 Observed choice within each group

CLASS	CLASS TOTAL	ACTIVITY SELECTION COUNTS				
		WORK	*MARKET*	*HEALTH*	*LEISURE*	*NONWRK*
1	19	18	19	5	3	19
2	13	11	12	0	0	12
3	4	3	4	1	0	4
4	24	23	20	5	4	20

Grouped regression models were estimated for activities Work and Market. This was achieved by the estimation of model parameters β_1 and β_2. Other activities and other individuals did not provide sufficient groupings (at least 5 observations in each group), an important requirement of grouped regression models (see section 7.2.5).

Table 7.13 Grouped regression models for Household Heads

ACTIVITY	MODEL STATISTICS			VARIABLE INFERENCES			
	R^2	F	p	*Parameter*	*Coefficient*	*Standard Error*	t
WORK	0.959	23.267	0.041	BETA1	1.471	0.502	2.930
				BETA2	0.041	0.022	1.864
MARKET	0.957	22.299	0.043	BETA1	1.536	0.367	4.186
				BETA2	0.121	0.100	1.214

In order to analyse the behaviour of the parameters β_1 and β_2, it is necessary to understand their function in the grouped regression model. In the transformed linear regression function L_q^* (equation 7.20), the parameters β_1 and β_2 express the linear component of the exponential behaviour of the probability of choice. The parameter β_1 accounts for observed choice (considered as relative frequency) and the parameter β_2 accounts for the explanatory variable (BM in this case). In this way, higher values for the parameter β_1 indicate that the actual choice plays an important role in models developed on the grouped regression approach. On the basis of this exposition, the grouped regression models have a behavioural basis which can be utilised for modelling individual behaviour in a simplistic framework.

7.6 AGGREGATE TRAVEL DEMAND PREDICTION

Travel demand prediction was carried out by application of the models developed. The models were used to predict individual choice probabilities, where choice is defined as travel to access an activity location. Aggregation of individual choice probabilities provided modelled travel demand for the sample. The modelled aggregate demand was compared against observed aggregate frequencies in order to test the model performance.

The data set used for prediction purposes must not have been used in estimation of the model parameters. For this reason, two data sets were created from the full database, as defined earlier. One of the data sets was used for estimation of model parameters and the other for prediction of choice probabilities (the application). The following paragraphs explain the model application methodology and the results are discussed afterwards.

The final models, presented in Table 7.9, Table 7.10, and Table 7.13, were applied to the application data set and individual choice probabilities were then estimated. The value of individual probabilities (P_j^i) were estimated using the relevant equations, i.e.:

- equation (7.27) for multinomial logit model application
- equation (7.29) for binary logit model application, and
- equation (7.20) for grouped regression model application

The aggregate demand was found using the following relationship:

$$T_j = \sum_{i=1}^{I} Exp(P_j^i) \qquad (7.33)$$

where

$Exp(P_j^i)$ = expected value that individual *i* will choose activity *j*

T_j = aggregate travel demand for the activity *j*

(I∈N) represents the total number of individuals in the sample (or sub sample), for example Household Heads.

The cut-off point for determining the expected value $Exp(P_j^i)$ was taken as 0.5. This means that any value of P_j^i greater than 0.5 would be treated as unity (an activity is chosen); values at 0.5 and below would therefore result in no choice. It is emphasised here that travel demand in the above equation represents one non-home based trip for the activity. This was possible under the development of the observed choice vector. The observed choice vector of any activity was formed on the basis of an individual's choice of participation in a non-home based activity, which requires travel.

7.6.1 Application of multinomial logit models

It was possible to determine the probability of choosing one activity from the alternative activities available to the individual. Multinomial logit models developed earlier (as given in Table 7.9) were used for this purpose. These models were applied to data set 2 and individual choice probabilities were estimated. Aggregation of these choice probabilities gave the population travel demand for various activities. The results are summarised in Table 7.14.

In Table 7.14 the aggregate demand is classified over each of the four activities, namely, Work/School, Market, Health and Leisure, and each of the four individual types, namely, Head, Partner, Child>15 and Child<15. Prediction results for activity Work show the lowest variation. This variation varies with the segment as well as the individual types, showing the importance of addressing difference in individual travel patterns.

On aggregate, models for activity Work have the least deviation for the Head of households. The bottom row of the table summarises the all day aggregates for each individual type. The percentage deviation in this row varies between 0 to 20%. This means that models are able to predict the aggregate travel demand of each individual type. This was achieved by including individual type as a factor in model development.

Table 7.14 Aggregate travel demand prediction using Multinomial logit models

TIME SEGMENT	ACTIVITY TYPE	INDIVIDUAL TYPE														
		HEAD			PARTNER			CHILD>15			CHILD<15			ALL INDIVIDUALS		
		O	M	D	O	M	D	O	M	D	O	M	D	O	M	D
1 (0600-0900)	WORK/SCH	29	34	17%	3	0	-100%	3	0	-100%	4	1	-75%	39	35	-10%
	MARKET	6	0	-100%	0	40	**	0	3	**	1	33	3200%	7	76	986%
	HEALTH	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LEISURE	5	0	-100%	37	0	-100%	0	0	0%	29	0	-100%	71	0	-100%
2 (0900-1200)	WORK/SCH	35	35	0%	4	0	-100%	3	0	-100%	4	1	-75%	46	36	-22%
	MARKET	2	5	150%	0	40	**	0	3	**	1	33	3200%	3	81	2600%
	HEALTH	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LEISURE	3	0	-100%	36	0	-100%	0	0	0%	29	0	-100%	68	0	-100%
3 (1200-1500)	WORK/SCH	34	35	3%	4	0	-100%	3	0	-100%	3	1	-67%	44	36	-18%
	MARKET	3	5	67%	0	40	**	0	3	**	1	33	3200%	4	81	1925%
	HEALTH	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LEISURE	3	0	-100%	36	0	-100%	0	0	0%	30	0	-100%	69	0	-100%
4 (1500-1800)	WORK/SCH	22	33	50%	0	0	0%	0	0	0%	0	1	**	22	34	55%
	MARKET	1	7	600%	0	40	**	0	3	**	1	33	3200%	2	83	4050%
	HEALTH	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LEISURE	7	0	-100%	40	0	-100%	3	0	-100%	33	0	-100%	83	0	-100%
5 (1800-2100)	WORK/SCH	7	7	0%	0	*	*	0	0	0%	0	1	**	7	8	14%
	MARKET	2	0	-100%	0	*	*	0	3	**	1	33	3200%	3	36	1100%
	HEALTH	0	3	**	0	*	*	0	0	0%	0	0	0%	0	3	**
	LEISURE	31	0	-100%	40	*	*	3	0	-100%	33	0	-100%	107	0	-100%
ALL ACTIVITIES ALL DAY		190	164	-14%	200	160	-20%	15	15	0%	170	170	0%	575	509	-11%

Abbreviations and symbols used: WORK/SCH=Work or School (as relevant); O=Observed Trips; M=Modelled Trips; D=% Difference; **=Divided by zero; *= Model not available

7.6.2 Application of Binary logit models

The Binary logit models described in Table 7.10 were used to predict the probability of choice for various activities for each individual type. The aggregate frequencies were compared to the observed frequencies and the results were summarised in Table 7.15. The deviation of modelled frequencies from the observed frequencies is indicated by percent difference.

Table 7.15 Binary logit model application

INDIVIDUAL TYPE	ACTIVITY TYPE	AGGREGATE DEMAND		
		OBSERVED	MODELLED	DIFFERENCE
HEAD	WORK/SCH	36	40	11%
	MARKET	4	7	75%
	HEALTH	2	3	50%
	LEISURE	21	34	62%
PARTNER	WORK/SCH	14	40	186%
	MARKET	0	0	0%
	HEALTH	0	0	0%
	LEISURE	7	0	-100%
CHILD>15	WORK/SCH	6	30	400%
	MARKET	0	0	0%
	HEALTH	2	0	-100%
	LEISURE	5	0	-100%
CHILD<15	WORK/SCH	2	0	-100%
	MARKET	0	0	0%
	HEALTH	0	0	0%
	LEISURE	2	0	-100%
AGGREGATE DEMAND		101	154	52%

The model for Household Heads predicted travel demand for Work with the least deviation from the observed demand. Other activities experienced higher deviations (50% to 75%). The reason for this was the non-daily nature of these activities. The model for Partner has high deviations for Work and Leisure but zero deviation for Market and Health. It may be considered an important result in the light that both activities (Work and Leisure) are not the important activities for Housewives. A similar argument is true for Child<15. In the case of Child>15 the high deviation may be contributed to a low amount of data available for model development (19 individuals as per Table 7.8).

7.6.3 Application of Grouped regression models

Grouped regression models for Household Heads were developed for activities Work and Market (Table 7.13). Use of the model parameters in the application data set gives the predicted frequencies for the two activities, as presented in Table 7.16.

Table 7.16 Grouped regression results for Household Heads

AGGREGATE FREQUENCY	AGGREGATE FREQUENCY	
	WORK	*MARKET*
OBSERVED	36	18
MODELLED	33.97	33.18
%DIFFERENCE	-5.6%	84.3%

The percentage difference for activity Work is roughly under 6% and that for Market is around 85%. The main reason for the high deviation in the case of the Market activity is the grouping procedure. The resulting classes from which the model was developed do not have compatibility with the classes in the application context. The high deviation was attributable to the grouping of BM values. It is logical that the application data set must have similar grouping in order for good results from the group regression models. The high variability of Market attributes causes large difference between the two data sets.

7.6.4 Discussion on prediction results

Two model forms (i.e. multinomial logit and binary logit forms) have been used to develop models for all activities and all individual types. Among these two model forms, the predicted aggregate demand using multinomial logit procedure was found to be lower as well as containing a logical sense. It takes into account the way people choose one activity within their choice set.

The grouped regression procedure was applied to predict household Work and Market trips by Household Head. The prediction results for Work were the most promising. This procedure, however, deals with one activity at a time and is further bounded by classification of the data on the basis of an explanatory variable. The procedure may be recommended for modelling travel demand being a simplistic approach.

The travel demand for activity Work by Household Head was predicted closely. There seems to be the following reasons for this trend:

a) Work being a regular activity, the respondents (mostly Household Heads) provide accurate information of the Work trips while the responses for other activities may be in the form of rough estimates
b) the households put more emphasis on activity participation/travel by the Household Heads and thus any kind of information regarding other household members may not be reported as accurately

The reasons for high deviations in the results need to be explained. The overall results may be divided into person type and activity type. The results may be explained on two grounds; namely, the statistical basis and the behavioural basis. The statistical basis of high deviation may be explained using Table 7.6 and Figure 7.1. The wide variation of activity choice around BM values was the main cause of the statistical problems of model fitting.

The behavioural basis of the results can be explained using the basic concepts of the development of BM models. The accessibility benefits model (BM) considered how people assign weighting to various activities within their daily time budget. This weighting was derived on the basis of activity Work, using the parameter γ (equation 7.24). In the case of a non-work activity the parameters defining the economic basis become key variables. For example, in the case of Market, the utility of time for activity participation is defined on the basis of time spent in travel to and from work. This notion assigns high weighting to Work (earning activities). The issues related to individuals who do not participate in the activity Work (i.e. Partner, Child>15 and Child<15), therefore may not be addressed in this approach. A more direct approach to assign the time utilisation for various non-earning activities should be able to improve this area of model performance. This effort was considered beyond the scope of this research.

In the development of BM models, two important levels of household decision-making were addressed, namely:

i) Life cycle stage (LCS), which considers how the household needs are formulated

ii) Individual type, which considers how activities are transformed as individual responsibilities

This may be improved by the development of an assignment model in order to assign the household level activities to the household individuals on a more economic basis.

7.6.5 Modelling frequency choice for non-daily activities

In the development of accessibility-activity concepts, the actual time utilisation for various activities was considered to be dependent upon a time threshold reached for the activity. The models may perform better when all the time horizons may be addressed in a single model, such that daily activity-travel decisions may become a part of long term activity participation decisions. In order to demonstrate this point, two additional models were developed. These models predicted the choice of frequency for a non-work activity by an individual. The activities considered were Market and Health, and the individual type considered is Household Head. Table 7.17 summarises these models. Two models are presented in Table 7.17, both for Household Heads. Each of the models predicts the choice of frequency type for a particular activity. The model for activity Market predicts the probability of an individual choosing the daily frequency of market. Other frequency types (monthly and occasional) may be found using basic concepts of probability. Two explanatory variables were used in the models. The first variable was BM for Market.

The other variable was a compound variable formed by multiplication of BM for Market and the household storage capacity.

Table 7.17 Activity frequency models for Household Heads

ACTIVITY FREQUENCY	MODEL STATISTICS *LR*	*df*	*p*	VARIABLE INFERENCES *Variable*	*Coefficient*	*Stdd Error*
Activity Market:						
DAILY	27.567	2	0.000	BMMAR	10.266	4.447
				BMMAR * STORAGE	-0.349	0.147
Activity Health:						
DAILY	123.096	3	0.000	BMHLT	-0.043	0.063
WEEKLY				BMHLT	-0.040	0.062
MONTHLY				BMHLT	-0.727	0.301

The model for activity Health predicted the probability of choosing frequency type for the activity on the basis of its BM. The frequency types covered were daily, weekly and monthly. The other frequency type, occasional, can be found using the probability summation concept.

Table 7.18 Model results for choice of frequency type

ACTIVITY FREQUENCY	AGGREGATE FREQUENCY *OBSERVED*	*MODELLED*	*DIFFERENCE*
Activity Market:			
DAILY	4	4	0%
WEEKLY	5	7	40%
Activity Health:			
DAILY	0	0	-
WEEKLY	0	0	-
MONTHLY	0	0	-
OCCASIONAL	40	40	0%

The models developed were used to predict the activity choice for the two activities and results are summarised in Table 7.18. The model for activity Market predicted better results for daily frequency. The model for Health predicted better results for occasional frequency. These results show the model capability of incorporating trip threshold in activity participation decisions.

7.6.6 Comparison of Multinomial and Binary logit models

The aggregate demand predicted by the two model forms, namely, Multinomial logit models and Binary logit models, (Table 7.14 and Table 7.15) was compared, in order to comment on the use of any particular model. The comparison was carried out on the basis of two types of groupings. In Table 7.19, the aggregate demand for various activities for all individuals was the first grouping and the aggregate demand for all activities over each individual type was the second grouping. In the activity-wise grouping the activity Work has the least variation in Multinomial logit models and the activity Leisure has the least variation in the Binary logit models. This means that the choice for activity Work conforms to the concept of multinomial choice while the binary choice is more relevant to activity Leisure.

Table 7.19 Comparison of Multinomial and Binary logit models

GROUPING		MNL	BNL
ACTIVITY WISE	WORK/SCH	-6%	90%
	MARKET	1779%	75%
	HEALTH	**	-25%
	LEISURE	-100%	-3%
INDIVIDUAL WISE	HEAD	-14%	33%
	PARTNER	-20%	90%
	CHILD>15	0%	131%
	CHILD<15	0%	-100%
AGGREGATE DEMAND		-11%	52%

In the individual-wise grouping the modelled demand for both types of children had the least deviation in case of Multinomial logit form. In the case of Binary logit model the modelled demand for Household Heads had the least deviation. This means that Binary logit models are able to better address the choice situations of Household Heads. The overall aggregate demand (all activities and all individual types) gave lesser deviation in the case of Multinomial logit form.

On the basis of this comparison, it may be seen that, overall, Multinomial logit models showed better behavioural basis for modelling travel demand in a household activity-based framework. They are able to address the combination of activities forming individual choice sets and prediction of travel demand for each activity.

7.7 WORKED EXAMPLE

This worked example explains the use of the database developed in this research (Appendix-D) to estimate and apply a Binary logit model. The development of database and model forms has been explained earlier in the chapter. The worked example was developed with the following objectives:

a) to demonstrate the steps carried out in the development of the model and its application
b) to guide any attempt to automate the model development process, in the form of development of executable work sheets and in an input-process-output format.

Before explaining the steps involved in model estimation and application, it was found appropriate to study the modelling system from the outset. Section 7.7.1 explains the flow of the procedures to be carried at the two levels, i.e. model development and model application. Section 7.7.2 takes a portion of data from the full database developed in this research and demonstrates the execution of both the levels of model development.

7.7.1 Summary of modelling system execution procedures

The main tasks involved in modelling travel demand are:

Task 1: to prepare model inputs

Task 2: to estimate model parameters

Task 3: to predict aggregate demand

The summary of modelling system execution procedures is given in Figure 7.7. This contains three basic procedures; namely, *General*, *Model development*, and *Model application*. The procedure named *General* prepares the inputs to be used for the next procedures. The procedure named *Model development* estimates model parameters and results in models for each individual type and each activity relevant to the individual types. The procedure named *Model application* applies the model for each individual and also predicts aggregate travel demand. The detailed steps carried out within each of the procedures are described in Figure 7.8, with reference to one individual type and one activity (i.e. one '*ij*' pair). The following paragraphs explain the overall working of the modelling system.

GENERAL

This stage collects the information needed to formulate BM and Observed vectors for each individual. The information is utilised from three levels:

- Village level
- Household level
- Individual level

BM_{hij}

The village level data, common to all population of the village, is classified according to the activity *j*. The loop starts for the first household in the village. The Household level data uses LCS type to classify the household into household type *h*. The loop then starts for each individual type. The model selects only one type of individual at a time. The individual type *i* is used for this purpose. Each activity the individual needs to perform belongs to an activity *j*. The modelling system then uses the three indices '*ijk*' to call for the procedure BM_{hij} in order to calculate the BM for the individual.

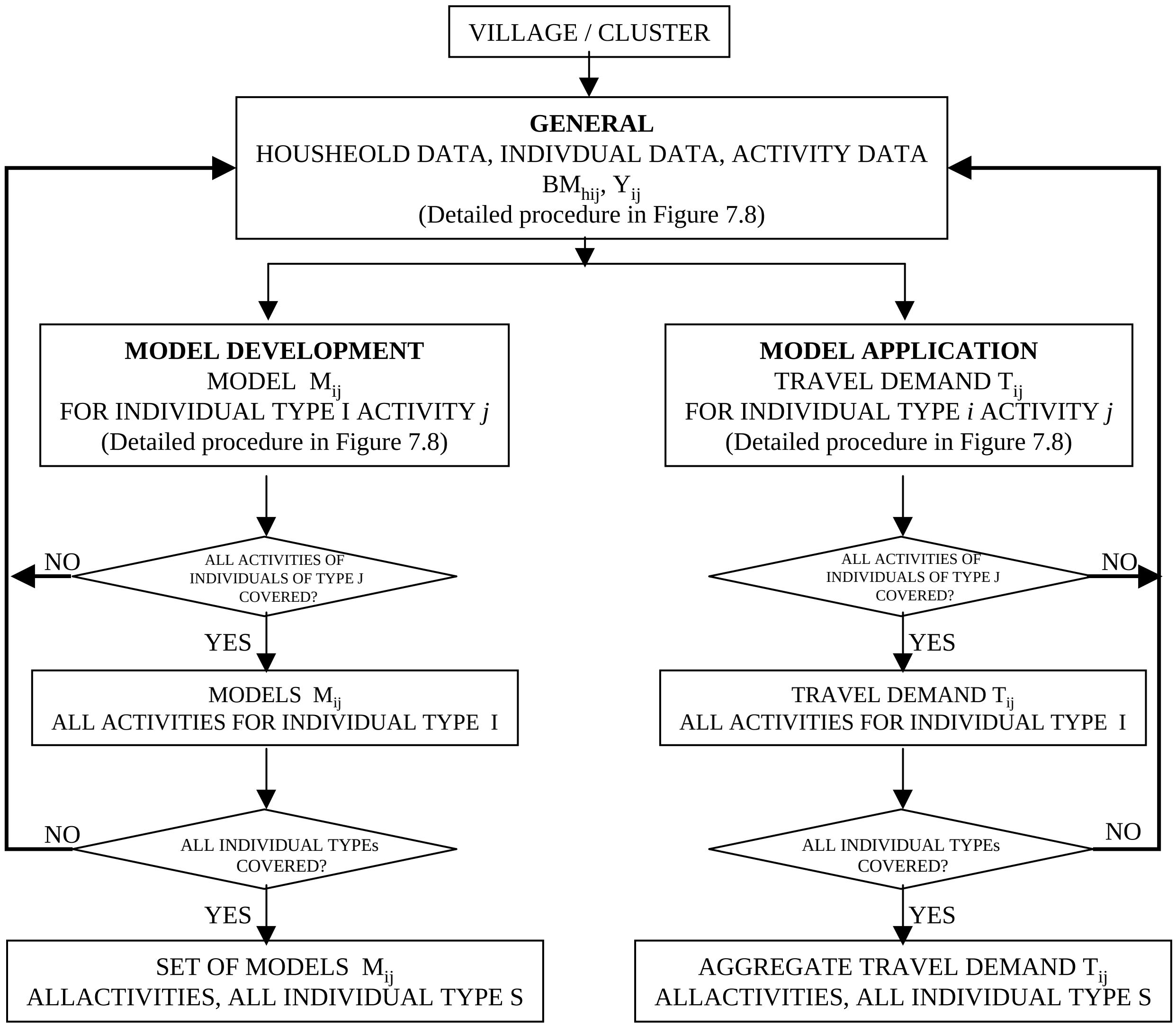


Figure 7.7 Working of modelling system

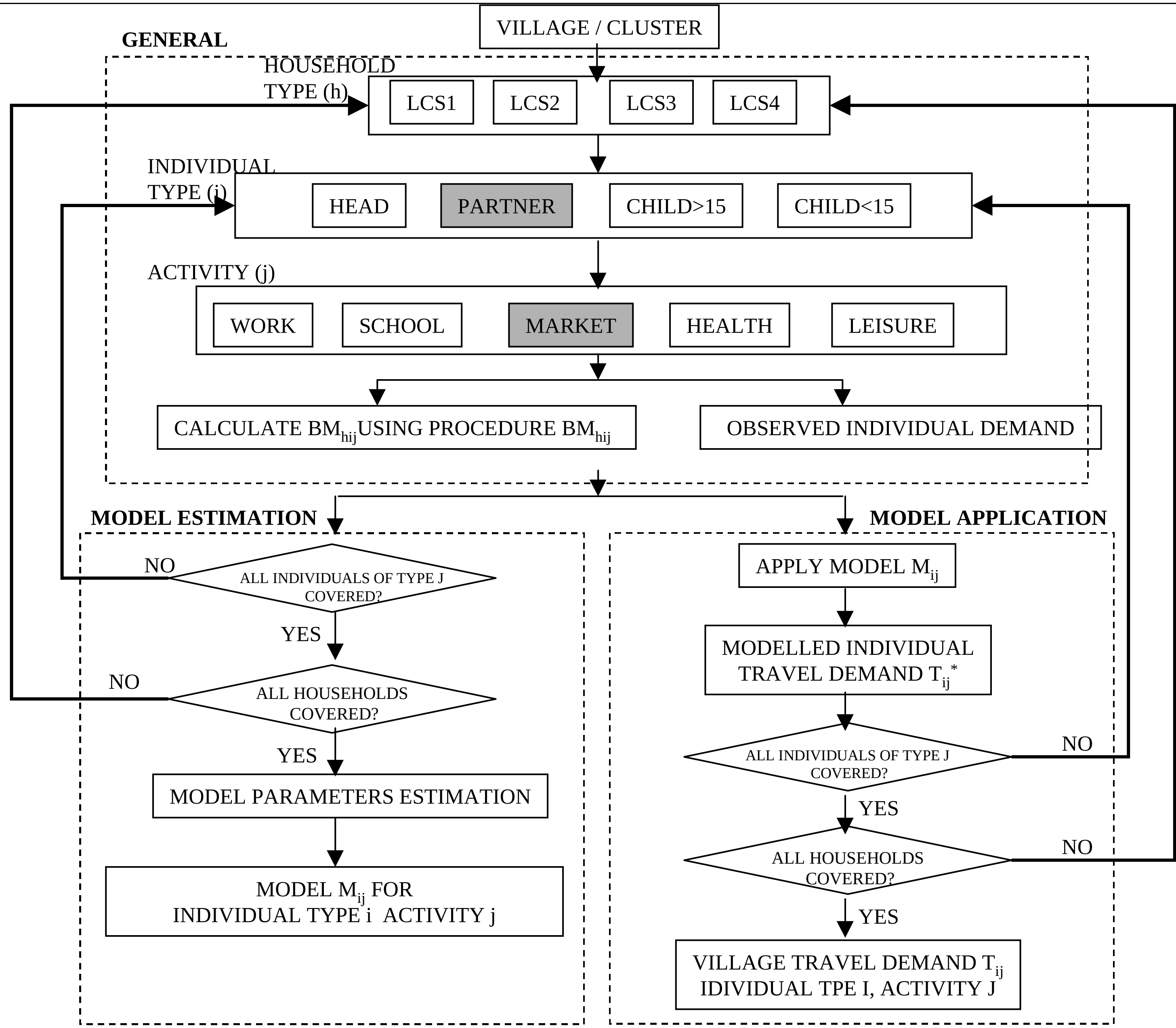


Figure 7.8 Working of modelling system for one '*ij*' pair

Observed demand

For the given individual, the modelling system stores the observed demand obtained directly from the database.

MODEL DEVELOPMENT

Modelling system develops the models for each activity for each individual type. It needs the accumulated information for all individuals within the population in order to proceed with the parameter estimation using any statistical procedures, as explained earlier (section 7.5). This accumulation is achieved by continuing the loop for the individual type (*i*) within the household, and then for all the households within the area (Figure 7.8).

At the end of this accumulation stage, two vectors are formed; BM_{ij} and Y_{ij}. The vectors contain the accessibility index value and the observed travel demand, respectively, for activity *j* by the individual type *i* for the whole area. Model parameters are then estimated for model M_{ij}. The loop is then set for all activity types for the given individual type.

After one individual type is completed, the loop is set afresh for the next individual type. The procedure continues till all individual types are completed. The output of this procedure is the model parameters for M_{ij} (i.e. for activity *j* for individual type *i*).

A repetition of this procedure first for each activity type will give model parameters for all activities relevant to the individual type (Figure 7.7). The whole procedure is repeated for all individual types. This results in 16 models to be developed covering all individual types and all activities (i=1,4; j=1,4).

MODEL APPLICATION

The model application uses the models M_{ij} to estimate the probability P_{ij} for each individual type *i* for selection of activity *j*. It uses the accessibility index value BM_{hij}. The probability value is then converted into the expected value T_{ij}^* (using an indifference threshold value of 0.5, as explained earlier in section 7.4). T_{ij}^* is the modelled travel demand for the individual in the form of 0 or 1.

Table 7.20 Working of the modelling system

EXPLANATION OF LEGENDS AND VALUES USED

IDENTIFICATION		ACTIVITY DATA		DERIVED PARAMETERS		BM COMPONENTS	
IDNUM	Individual ID (Global)	ID	Individual responsible	m	Cost per km	BM1	Transporation component
CLUST	Cluster Number	FRQ	Frequency	RELE	Activity relevance (0,1)	BM2	Spatial component
HHN	Household Number	DST	Distance (one way)	ALPHAI	Value of time parameter	BM3	Temporal component
LCS	Life Cycle Stage	TTI	Travel time (one way)	RHO	Level of activity parameter	BM	Accessibility benefits measure
HHINC	Household Income	MOD	Travel mode	c	Model calibration parameter		
ID2.1	Household Individual ID	CST	Travel cost	omega	Activity attraction parameter		
AGE	Age	ATI	Activity duration	h	Temporal utility measure		
SEX	Sex	SCA	Scale	GAMMA	Marginal utility of time		
type	Individual Type	LOC	Number of locations				

(Extract From TABLE D-1 BM DEVELOPMENT FOR ALL INDIVIDUALS IN HALA) [Activity: Market]

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHAI	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
257	4	61	2	3655	1	38	1	1	1	3	12	42	7	24	60	4	1	2	1	6.03	0.63	1	0.25	0.5	1.3489	0	0.16	12	0
265	4	63	2	3000	1	32	1	1	1	2	12	40	7	24	180	0	0	2	1	4.95	0.63	1	1	1.5	1.3504	0	0.63	53.3	0
274	4	65	2	2400	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	3.96	0.63	1	1	0	1.3775	1	0.63	0	0
282	4	67	4	4000	1	40	1	1	1	2	12	40	7	20	60	0	1	1.67	1	6.6	0.63	1	1	0.5	1.3504	0	0.63	12.1	0
292	4	69	2	4000	1	25	1	1	1	1	0.5	10	0	0	20	0	1	0	1	6.6	0.63	1	1	0.33	1.3713	0.72	0.63	8	3.62
299	4	71	2	3858	1	32	1	1	1	3	12	40	7	30	120	0	0	2.5	1	6.37	0.63	1	1	2	1.3504	0	0.63	78.6	0
304	4	73	2	3000	1	25	1	1	1	1	0.5	10	0	0	20	0	1	0	1	4.95	0.63	1	1	0.33	1.3713	0.72	0.63	8	3.62
310	4	75	1	3000	1	26	1	1	1	2	12	40	7	30	180	0	0	2.5	1	4.95	0.63	1	1	3	1.3504	0	0.63	136	0
315	4	77	2	4500	1	28	1	1	1	2	12	40	7	30	60	0	1	2.5	1	7.43	0.63	1	1	1	1.3504	0	0.63	30.8	0
322	4	79	2	6000	1	23	1	1	1	2	12	15	4	33	60	0	0	2.75	1	9.9	0.63	1	1	0.5	1.368	0	0.63	13.6	0.01
262	4	62	2	3300	1	25	1	1	1	1	12	40	7	24	60	0	0	2	1	5.45	0.63	1	1	2	1.3504	0	0.63	78.6	0
268	4	64	4	3000	1	60	1	1	1	1	12	20	4	33	120	0	0	2.75	1	4.95	0.63	1	1	1	1.3647	0	0.63	34.3	0
279	4	66	2	1500	1	38	1	1	1	1	0.5	5	0	0	10	0	1	0	1	2.48	0.63	1	1	0.33	1.3744	0.85	0.63	8.17	4.37
288	4	68	2	3600	1	30	1	1	1	2	12	40	7	24	60	0	0	2	1	5.94	0.63	1	1	0.5	1.3504	0	0.63	12.1	0
295	4	70	2	3750	1	22	1	1	1	1	0.5	10	0	0	30	0	1	0	1	6.19	0.63	1	1	0.5	1.3713	0.72	0.63	13.9	6.32
302	4	72	1	2500	1	25	1	1	0	0	0	0	0	0	0	0	0	0	1	4.13	0.63	1	1	0	1.3775	1	0.63	0	0
307	4	74	2	3500	1	23	1	1	1	1	0.5	10	0	0	20	0	1	0	1	5.78	0.63	1	1	0.33	1.3713	0.72	0.63	8	3.62
312	4	76	2	3000	1	25	1	1	1	2	12	40	7	30	60	0	1	2.5	1	4.95	0.63	1	1	1	1.3504	0	0.63	30.8	0
319	4	78	2	3600	1	27	1	1	1	3	12	40	7	12	60	0	1	1	1	5.94	0.63	1	1	0.5	1.3504	0	0.63	12.1	0.04
325	4	80	1	9000	1	40	1	1	0	0	0	0	0	0	0	0	0	0	1	14.9	0.63	1	1	0	1.3775	1	0.63	0	0

The loop for all individuals of type *j* continues within the household and then to all the households of the area (Figure 7.8). At the end of this loop total travel demand for activity *j* by individual type *i* is summed up as T_{ij}.

After one individual type is completed, the loop is reset for the next individual type. The procedure continues till all individual types are completed. This results in 16 model applications covering all individual types and all activities (*i*=1,4; *j*=1,4). The result is travel demand for each of the 16 categories. Aggregate travel demand is formulated by simple summation (Figure 7.7).

7.7.2 Database for worked example

In order to explain all the stages in the modelling system, a portion of data is selected. This forms the database for the worked example. This database was obtained by selecting Household Heads of cluster-4. The data for BM-Market for these individuals was extracted from Table D-1 of Appendix D. The extracted database is given in Table 7.20. It must be noted that Table 7.20 has two divisions. The Heads of odd numbered households formed the data set for model development and the Heads of the even numbered households formed the data set for application purpose.

Table 7.20 demonstrates how the BM for a household level activity (Market in this case) is developed from data at various household levels. The parameters of individual BM are estimated using the procedures as explained earlier in this chapter (section 7.3).

After obtaining BM's for each individual, the next stage in model development is to formulate the observed choice vector. This was obtained from Table D-3 (Appendix-D) for the relevant individuals (all Household Heads in cluster-4).

Estimation of model parameters

The form of the model used in parameter estimation stage is:

$$P_j^i = \frac{\exp(A)}{1+\exp(A)} \tag{7.34}$$

such that

$$A = (\beta_o)^j + \sum_{m \in C} (\beta_m)^j BM_m^i \tag{7.35}$$

where:

j = the activity for which model is being estimated

m = all activities comprising the choice set of individual i

$\{\beta\}^j$ = the vector of model parameters for j^{th} activity

BM_m^i = utility index for the individual i for each activity m in his choice set C

The estimation of probabilities for each activity requires a set of model parameters (β) specific for the activity j and applicable for the whole sample.

Table 7.21 presents the input for the model development in the form of two values for each individual, i.e. BM-Market as explanatory variable and Observed Market as the dependent variable. Using this data in SPSS (or any standard statistical package) would provide the following model (Table 7.21):

$$(\Pr_i)_{Market}^k = \frac{\exp(-1.102 + 2.343 \cdot BMMARKET)}{1+\exp(-1.102 + 2.343 \cdot BMMARKET)} \tag{7.36}$$

where

$(\Pr_i)_{Market}^k$ = probability that individual i will chose activity j at location k

BMMARKET = accessibility benefit for the individual i for activity Market at a given location k

Table 7.21 Example calculations for model development

ID NUMBER	BM MARKET	OBSERVED MARKET	MODEL FORM
257	0.00016	1	$(\Pr_i)^k_{Market} = \frac{\exp(-1.102 + 2.343 \cdot BMMARKET)}{1 + \exp(-1.102 + 2.343 \cdot BMMARKET)}$
265	0.00055	0	
274	0.00000	1	
282	0.00470	0	
292	3.62301	1	
7299	0.00106	0	
304	3.62301	1	
310	0.00012	0	
315	0.00159	0	
322	0.00665	0	

Model application

At the model application stage, equation (7.36) was used to obtain travel demand for each individual included in the application data set for the worked example (Table 7.22). It may be seen in the table that the column $(\Pr_i)^k_{Market}$ contains a range of values between 0 and 1. These probability values are converted to individual travel demand $(T_i)^k_{Market}$ using the 0.5 as the threshold value. All probability values above 0.5 give the modelled travel demand as 1, probability values ≤ 0.5 would render no travel demand ($(T_i)^k_{Market}$ =0). The aggregate travel demand is the summation of all 1's in this column.

Goodness of fit

The main test of the goodness of fit for the model is to compare the predicted frequencies with the observed frequencies. In the worked example the observed frequency was 6 and the modelled frequency is equal to 3 trips per day (Table 7.22). The model therefore was capable of predicting travel demand for Market with an accuracy of 50% against the observed travel demand.

Table 7.22 Example calculations for model application

MODEL FORM	$(\Pr_i)^k_{Market} = \dfrac{\exp(-1.102 + 2.343 \cdot BMMARKET)}{1 + \exp(-1.102 + 2.343 \cdot BMMARKET)}$			
ID NUMBER	BM MARKET	$(\Pr_i)^k_{Market}$	$(T_i)^k_{Market}$	OBSERVED MARKET
262	0.00194	0.250219	0	1
268	0.00002	0.249373	0	1
279	4.37301	0.999893	1	1
288	0.00062	0.249639	0	0
295	6.31739	0.999999	1	1
302	0.00000	0.249365	0	0
307	3.62301	0.999381	1	1
312	0.00003	0.249378	0	0
319	0.03545	0.265232	0	0
325	0.00000	0.249365	0	1
		AGGREGATE DEMAND:	3	6
		GOODNESS OF FIT:	(3-6)/6=-50%	

7.7.3 Conclusions from the worked example

1) The worked example demonstrated the procedures involved at the model development and application stages. A small representative sample was selected from the main database in order to demonstrate each step carried out from model inputs to the prediction of aggregate travel demand.
2) The worked example can be used as a guide to develop executable worksheets which use the input-process-output formats defined at the model development stages.

7.8 SUMMARY

The development of a rural travel demand modelling system has been explained in this chapter. The chapter has been divided into two main parts. The first part (section 7.2) dealt with conceptual development of model forms. Individual discrete choice behaviour has been modelled using three modelling approaches; namely, multinomial logit model, binary logit model and grouped regression model.

The second part of this chapter (sections 7.3-7.6) dealt with model development. It consisted of development of model inputs, estimation of model parameters and prediction of travel demand. In the accessibility-activity approach, the accessibility benefits model (BM) is applied as the proxy to individual utility functions. Development of mathematical forms of various parameters of the BM function was first carried out. Basic definition of each of the model parameters was used in development of their mathematical forms. Data collected from household surveys were used to develop and validate BM for various activities and individual types. Individual activity diaries formed the basis for development of choice vectors. The observed choice for an activity was defined as travel for the out-of-home activity, while the actual activity duration provided the data for utility function of the activity.

Estimation of model parameters was required to develop the models to be used for prediction of individual choice probabilities. Statistical analysis of model parameters was carried out to study their significance in modelling the choice scenario. Suitable model forms were used at the application level to predict choice probabilities. The modelled frequencies were compared with the observed frequencies to ascertain model strengths and weaknesses.

Finally, a worked example has been included to illustrate various steps used in modelling travel demand. The worked example used a representative part of the database (cluster-4 Household Heads) and explained the development of input vectors, estimation of model parameters and prediction of individual and aggregate frequencies.

CHAPTER 8

MODEL VERIFICATION AND SENSITIVITY ANALYSIS

8.1 INTRODUCTION

New models need to be verified using field data and the results compared against similar models. Verification of the travel demand model developed in this research was carried out using field data collected from other rural areas of Pakistan. The development of the travel demand modelling system was explained in the previous chapter. The models were developed from household data collected from Hala, Pakistan. This chapter attempts to apply these models to data collected from Khuzdar, Pakistan. The aim of this exercise is to study model transferability. Household data from Khuzdar was used to develop individual BM vectors. These vectors were then used to predict individual travel demand, using the models developed earlier.

This chapter also studies the sensitivity of prediction results to key parameters of the accessibility benefits model (BM). The two variables of the BM model studied were the value of time coefficient α and the level of activity parameter ρ. The sensitivity analysis consists of systematically varying these parameters around original values adopted in the development of the models. The resulting trends reveal the levels of sensitivity of the modelling system to these parameters.

8.2 CASE STUDY

This case study was intended to assess the performance of the models developed by applying them to predict travel demand from a totally unrelated database. The specific objectives of the case study were as follows:

a) to summarise the model application procedures for the application of the model in a new situation
b) to demonstrate various types of input data needed and the formulation of inputs at various stages of the travel demand model
c) to assess the model performance with reference to model transferability and the behavioural basis of model development.

Section 8.2.1 provides an overview of the various steps carried out in the application of the model to any given situation. Sections 8.2.2 to 8.2.4 define model input and apply the procedures (detailed in 8.2.1) to data collected from Khuzdar, Pakistan. (The database developed from Khuzdar data is presented in Tables D-2 and D-4 of Appendix-D). Aggregate travel demand was estimated for all activities and all individual types. Sections 8.2.5 to 8.2.7 discuss model performance and verify the concepts developed at the model development stages. Section 8.2.8 outlines the conclusions of the case study.

8.2.1 Model application procedure

The application of the models developed in this research to any new area requires four steps:

Step-1: Estimation of individual BMs
Step-2: Estimation of individual probabilities
Step-3: Estimation of individual travel demand
Step-4: Estimation of aggregate travel demand

The following paragraphs explain all the inputs required for each step as well as the flow of the procedures involved. The procedures are summarised in Table 8.1 and Table 8.2.

Table 8.1 Summary of model execution procedures (Step-1)

STEP-1: *ESTIMATION OF INDIVIDUAL BMs*		**WORK**	**SCHOOL**	**MARKET**	**HEALTH**	**LEISURE**
Source	*General*[1]	*BM-Work*	*BM-School*	*BM-Market*	*BM-Health*	*BM-Leisure*
Village Data	*HH*=Number of households	$\rho = 1 - \exp(s_W)^{-0.01}$	$\rho = 1 - \exp(s_S)^{-0.1}$	$\rho = 1 - \exp(s_M)^{-0.1}$	$\rho = 1 - \exp(s_H)^{-0.1}$	$\rho = 1 - \exp(s_L)^{-0.02}$
		$c = \frac{s_W}{2 \cdot s_W}$	$c = \frac{s_S}{2 \cdot s_S}$	$c = \frac{1}{NT - DM}$ (c_{max}=1.0)	$c = \frac{1}{NT - S_H}$ (c_{max}=1.0)	$c = \frac{1}{NT - S_L}$ (c_{max}=1.0)
		s_W =Number of jobs	s_S =Number of school places	s_M =Number of shops DM=Dist. to Market NT= National target	s_H =Distance to nearest healthcare centre NT= National target	s_L= Number of locations NT= National target
Household Data	*I*= Household income *LCS*= Life cycle stage	α=1.33	α=0.33	α=0.33	α=1.33	α=0.33
Individual Data	*Age* *Sex* *Type* D_j^i = 0 or 1	$\omega_W^i = D_W^i$	$\omega_S^i = D_S^i$	$\omega_M^i = \frac{D_j^i}{scale_M}$	$\omega_H^i = \frac{D_j^i}{scale_H}$	$\omega_L^i = \frac{D_j^i}{scale_L}$
Activity Data	*m= Travel cost* *x= Travel distance* *t= Travel time* *v= x/t* T_j*= Activity duration* τ *= Daily time budget*	$h_W = 1$	$h_S = 1$	$h_M = \frac{T_M}{T_H}$	$h_H = 1$	$h_L = \frac{T_L}{T_H}$
		$\gamma_W^i = \left[1.5 - \frac{1}{\exp(A)}\right] \cdot D_W^i$ $A = [\tau - 2 \cdot t_W]$	$\gamma_S^i = \left[1.5 - \frac{1}{\exp(A)}\right] \cdot D_S^i$ $A = [\tau - T_S]$	$\gamma_M^i = \left[1.5 - \frac{1}{\exp(A)}\right] \cdot D_M^i$ $A = [\tau - T_M - 2 \cdot t_W]$	$\gamma_H^i = \left[1.5 - \frac{1}{\exp(A)}\right] \cdot D_H^i$ $A = [\tau - T_H - 2 \cdot t_W]$	$\gamma_L^i = \left[1.5 - \frac{1}{\exp(A)}\right] \cdot D_L^i$ $A = [\tau - T_L - 2 \cdot t_L]$
BM Vector	Each individual *i* Each location *k*	$(BM_i)_W^k$	$(BM_i)_S^k$	$(BM_i)_M^k$	$(BM_i)_H^k$	$(BM_i)_L^k$

[1] Variables common to all activity types

Table 8.2 Summary of model execution procedures (Steps-2,3,4)

ACTIVITY	**WORK / SCHOOL**	**MARKET**	**HEALTH**	**LEISURE**
STEP-2: *INDIVIDUAL PROBABILITIES*	(W=BM-Work, S=BM-School, M=Bm-Market, H=BM-Health, L=BM-Leisure)			
HEAD	$\frac{\exp(0.225*W+0.135*M)}{1+\exp(0.225*W+0.135*M)}$	$\frac{\exp(0.150*M+0.091*H)}{1+\exp(0.150*M+0.091*H)}$	$\exp(3.486)\frac{\exp(-3.341-1.388*M)}{1+\exp(-3.341-1.388*M)}$	$\exp(0.513)\frac{\exp(-1.878-0.180*W)}{1+\exp(-1.878-0.180*W)}$
PARTNER	$\exp(-3.319)\frac{\exp(0.178*H+0.088*L)}{1+\exp(0.178*H+0.088*L)}$	$\exp(-9.189)\frac{\exp(-0.069*W-0.198*H-0.164*L)}{1+\exp(-0.069*W-0.198*H-0.164*L)}$	$\exp(0.875)\frac{\exp(-3.341-1.388*M)}{1+\exp(-3.341-1.388*M)}$	$\exp(-0.327)\frac{\exp(-1.878-0.180*W)}{1+\exp(-1.878-0.180*W)}$
CHILD>15	$\exp(1.285)\frac{\exp(0.178*H+0.088*L)}{1+\exp(0.178*H+0.088*L)}$	$\exp(1.435)\frac{\exp(-0.069*S-0.198*H-0.164*L)}{1+\exp(-0.069*S-0.198*H-0.164*L)}$	$\exp(1.674)\frac{\exp(-3.341-1.388*M)}{1+\exp(-3.341-1.388*M)}$	$\exp(0.921)\frac{\exp(-1.878-0.180*S)}{1+\exp(-1.878-0.180*S)}$
CHILD<15	$\frac{\exp(0.178*H+0.088*L)}{1+\exp(0.178*H+0.088*L)}$	$\frac{\exp(-0.069*S-0.198*H-0.164*L)}{1+\exp(-0.069*S-0.198*H-0.164*L)}$	$\frac{\exp(-3.341-1.388*M)}{1+\exp(-3.341-1.388*M)}$	$\frac{\exp(-1.878-0.180*S)}{1+\exp(-1.878-0.180*S)}$
Probability Density	$(\Pr_i)_W / (\Pr_i)_S$	$(\Pr_i)_M$	$(\Pr_i)_H$	$(\Pr_i)_L$
STEP-3: *INDIVIDUAL TRAVEL DEMAND*	(All individual types)			
Expected Value	$(T_i)^k_{W,S} = \begin{cases} 1 \text{ if } (\Pr_i)^k_{W,S} > 0.5 \\ 0 \text{ otherwise} \end{cases}$	$(T_i)^k_M = \begin{cases} 1 \text{ if } (\Pr_i)^k_M > 0.5 \\ 0 \text{ otherwise} \end{cases}$	$(T_i)^k_H = \begin{cases} 1 \text{ if } (\Pr_i)^k_H > 0.5 \\ 0 \text{ otherwise} \end{cases}$	$(T_i)^k_L = \begin{cases} 1 \text{ if } (\Pr_i)^k_L > 0.5 \\ 0 \text{ otherwise} \end{cases}$
STEP-4: *AGGREGATE TRAVEL DEMAND*	(All individuals, all locations)			
Aggregate Demand	$(T)_{W,S} = \sum_{k=1}^{K}\sum_{i=1}^{I}(T_i)^k_{W,S}$	$(T)_M = \sum_{k=1}^{K}\sum_{i=1}^{I}(T_i)^k_M$	$(T)_H = \sum_{k=1}^{K}\sum_{i=1}^{I}(T_i)^k_H$	$(T)_L = \sum_{k=1}^{K}\sum_{i=1}^{I}(T_i)^k_L$

Step-1: Estimation of individual BMs

This step comprises the collection of data and the estimation of individual BMs. This process involves four types of data, namely; Village data, Household data, Individual data, and Activity data. The details of the procedures are summarised in Table 8.1.

The village data provides the inputs for the activity attraction parameter ρ and model calibration parameter c. In this step various policy options can be tested. For example, the effect of an increase in number of jobs on travel demand for Work can be evaluated.

The Household data provides information on household income and household structure. The household structure in turn is used to assign life cycle stage (LCS) for a given household. The other parameter required at this level is the value of time coefficient 'α'. This is dependent on the activity type.

The individual data provide information on the age, sex and type of individual. The information on individual type, along with the household LCS, is used to evaluate the relevance of an activity for a given individual type denoted by ω.

The activity data, finally, provides the parameters for travel to an activity-location, as well as the data on actual participation in the activity.

The procedures explained in Table 8.1 were used to develop worksheets. These worksheets take inputs to perform the detailed procedures involved. Appendix-D contains the worksheets developed after carrying out these procedures. These worksheets can be used with any new data to formulate individual BMs. The output from Step-1 is in the form of accessibility benefit indices (BM) for each activity and each individual type. These are then used for the estimation of individual probabilities of selection of activities using the logistic regression models developed in this research.

Step-2: Estimation of individual probabilities

The logistic regression model forms (developed in Chapter 7) were used to estimate the probability that an individual with given values of accessibility benefit indices would select an activity. The first part of Table 8.2 summarises the model forms to be used for this purpose. In total there are sixteen model forms covering four activity types and four individual types. The output of this step is probability values for each activity type and each individual type.

Step-3: Estimation of individual travel demand

The binary logistic models covered in Table 8.2 provide the probability values between 0 and 1. The threshold value of 0.5 is used to convert this probability into expected value (i.e. 0 or 1). A value equal to 1 for the individual travel demand function $(T_i)_j^k$ therefore represents that a trip has been made by the individual *i* for the activity *j* at the location *k*.

Step-4: Estimation of aggregate travel demand

The aggregation of individual travel demand can be carried out at two levels. The aggregation over all individual types results in the travel demand for a given activity type (for example aggregate travel demand for Market). The aggregation of travel demand by all individual types for all activity types provides the travel demand for the whole population.

8.2.2 Khuzdar household data: BM model parameters

In order to apply the models developed, the following individual level information was needed:

1. Accessibility benefit indices for the various activities (BM vectors)
2. Observed travel demand (in order to assess model performance)

In the development of BM vectors for household individuals, information was also required at household and village levels, as explained in 8.2.1. For this purpose, Khuzdar household data has been selected for the case study.

A detailed household survey was carried out in Khuzdar. This data comprises four clusters, and 62 households in total. The full data set contained 395 individuals. The analysis of this data was presented in Chapter 6. The following sub-sections describe the development of model inputs, and the prediction of travel demand using the models developed.

A detailed description of the key parameters of the accessibility benefits model (BM) was given in Chapter 7. These parameters may be divided into two categories; those which are derived using village level accessibility indicators, and those which are derived on the basis of household interaction and activity participation. The list below places BM parameters into their respective categories:

a) BM parameters derived from village accessibility information:

level of activity (for example number of jobs)	(ρ)
the model calibration parameter	(c)

b) BM parameters derived from household interaction and activity participation:

monetary travel cost per km	(m)
value of travel time per hour based on household income I	(αI)
the speed of travel in km/hr	(v)
distance to the location in km	(x)
perceived importance of the activity	(ω)
measure of utility per unit time	(h)
marginal utility of time available for activity participation	(γ)
total time budget in hrs.	(τ)

Mathematical formulation of the second set would be the same for any data set used as it was developed on the basis of household interaction. The first set, on the other hand, would need to be defined on the basis of available village level information. This is explained in the following paragraphs.

8.2.2.1 Activity attributes

In order to obtain either of the two parameters (ρ and c) for an activity, the attributes relevant to the activity must be specified. Table 8.3 provides a summary definition of these attributes along with their values in Khuzdar.

In the case of the activity School, for example, two types of attributes were used. As all of the villages have primary schools, the attribute representing their level is current places. For the secondary school, on the other hand, the parameter affecting level of activity and accessibility is the distance to the nearest secondary school. This is required as the accessibility measure in case of non-availability of secondary schools in the area.

Table 8.3 Definitions and values of activity attributes

ACTIVITIES	ATTRIBUTES	CLUSTERS			
		C1	*C2*	*C3*	*C4*
Work	In-village employment	0	0	60	0
School (primary)	Current places	40	40	70	40
School (secondary)	Distance to nearest	8	15	3	10
Market	Distance to nearest	8	15	0	10
Health	Distance to nearest	6	6.5	3	4.5
Social	Number of households	21	40	50	25

These attributes were used to define the mathematical formulation of parameters ρ and c, as described in the following paragraphs.

8.2.2.2 Level of activity parameter ρ

Empirical values of the level of activity parameter ρ were obtained using the activity attributes given in Table 8.3. These parameters are used in mathematical forms of ρ for various activities, as summarised in Table 8.4. The mathematical formulation for activity Work, for example, considers percentage of population travelling to Khuzdar for work as the evidence of the level of the activity.

Table 8.4 Empirical values of ρ

ACTIVITIES	ATTRIBUTES	CLUSTERS			
		C1	*C2*	*C3*	*C4*
Work	%Travelling Khuzdar	0.44	0.25	0.94	0.35
School-pri	(exp^{places})^0.01-1	0.49	0.49	1.01	0.49
School-sec	$1/(exp^{Distance})$^0.2	0.20	0.05	0.55	0.14
Market	$1/(exp^{Distance})$^0.2	0.20	0.05	1.00	0.14
Health	$1/(exp^{Distance})$^0.2	0.30	0.26	0.56	0.41
Social	$1-(exp^{Households})$^-0.05	0.65	0.86	0.92	0.71

8.2.2.3 Model calibration parameter c

The model calibration parameter *c* accounts for the current levels of activities in comparison to certain desired levels. It may be obtained as a percentage of the national targets to be achieved to improve accessibility of the activities. The formulation of the parameter *c* therefore requires two inputs, i.e. the current levels of activities and the desired targets. The current levels of activities in the case of Khuzdar were defined in Table 8.3. The national targets are defined for each of the activities and the resulting empirical values of *c* are obtained, as summarised in Table 8.5. In the absence of detailed/published information, the national targets were assumed in this research.

In Table 8.5 values of *c* for secondary school, for example, use the desired level of activity that a secondary school must be available within 2 km of each village. The value of *c* is therefore the highest for cluster-3, where the school was within 3 km. This methodology identifies the flexibility of using the policy inputs in the travel demand models developed.

Table 8.5 Empirical values of *c*

ACTIVITIES	TARGET	CLUSTERS			
		C1	*C2*	*C3*	*C4*
Work	Double current employment	0.50	0.50	0.50	0.50
School (primary)	Double current places	0.50	0.50	0.50	0.50
School (secondary)	Within 2km	0.25	0.13	0.67	0.20
Market	Within 2km	0.25	0.13	1.00	0.20
Health	Within 2km	0.33	0.29	0.68	0.45
Social	One for 50 households	0.42	0.80	1.00	0.50

The individual BM provides input vectors for prediction of travel demand. In the case study, BM vectors were formed for all individuals using empirical values of the model parameters derived from the household-individual level data collected from Khuzdar. Prediction of individual choice probabilities was carried out using travel demand models developed earlier. In addition, a new set of models was also developed using full data from Hala. The former set of models is hereafter called Models-1 and the later is called Models-2.

8.2.3 Application of binary logit models

Binary logit models were developed for the four activities (Work/School, Market, Health and Leisure) for all individual types. These models were used to predict individual travel demand. Table 8.6 summarises aggregate demand for various activities in Khuzdar. The modelled and observed aggregate demand using each of the model sets is compared.

In general, the modelled trips for activities Work and Health (for Household Head) showed least deviation from the observed data.

The prediction results from the two models were in agreement with each other in most of the activity and individual types. Major differences between the two model results were found in the activity Health for all individual types. Apparently, the main cause of the difference was the larger number of data points for the development of Models-2. In statistical sense, Models-2 would be considered better models.

Table 8.6 Binary logit model application

INDIVIDUAL TYPE	ACTIVITY TYPE	AGGREGATE DEMAND				
		OBSERVED	Models-1[1]		Models-2[2]	
			MODELLED	DIFFERENCE	MODELLED	DIFFERENCE
HEAD	WORK/SCH[3]	51	62	22%	62	22%
	MARKET	30	62	107%	62	107%
	HEALTH	33	33	0%	47	42%
	LEISURE	44	0	-100%	0	-100%
PARTNER	WORK/SCH	4	0	-100%	0	-100%
	MARKET	1	0	-100%	0	-100%
	HEALTH	3	0	-100%	9	200%
	LEISURE	4	0	-100%	0	-100%
CHILD>15	WORK/SCH	49	127	159%	127	159%
	MARKET	6	99	1550%	27	350%
	HEALTH	18	0	-100%	6	-67%
	LEISURE	24	0	-100%	0	-100%
CHILD<15	WORK/SCH	43	144	235%	132	207%
	MARKET	3	80	2567%	0	-100%
	HEALTH	9	0	-100%	9	0%
	LEISURE	12	84	600%	0	-100%
AGGREGATE DEMAND		334	691	107%	481	44%

Notes:
1. Models developed using partial data-base (clusters 1-3)
2. Models developed using full data-base (all clusters)
3. WORK/SCH=Work or School (as relevant)

8.2.4 Multinomial logit model applications

The Multinomial logit models developed in this research (chapter 7), along with Models-2, were applied to the Khuzdar data in order to ascertain model transferability. The MNL models predicted the choice of an activity from the choice set of the individual. The model application results are summarised in Table 8.7 and Table 8.8.

Table 8.7 Frequency of various activities as a multinomial choice

TIME SEGMENT	ACTIVITY TYPE	INDIVIDUAL TYPE														
		HEAD			PARTNER			CHILD>15			CHILD<15			ALL INDIVIDUALS		
		O	M	D	O	M	D	O	M	D	O	M	D	O	M	D
1 (0600-0900)	WORK/SCH	18	6	-67%	1	0	-100%	17	39	129%	5	38	660%	41	83	102%
	MARKET	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	HEALTH	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LEISURE	2	0	-100%	19	0	-100%	22	0	-100%	33	0	-100%	76	0	-100%
2 (0900-1200)	WORK/SCH	19	8	-58%	1	0	-100%	20	39	95%	5	38	660%	45	85	89%
	MARKET	0	0	0%	0	0	0%	0	0	0%	1	0	-100%	1	0	-100%
	HEALTH	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LEISURE	1	0	-100%	19	0	-100%	19	0	-100%	32	0	-100%	71	0	-100%
3 (1200-1500)	WORK/SCH	19	8	-58%	1	0	-100%	19	39	105%	5	38	660%	44	85	93%
	MARKET	0	0	0%	0	0	0%	0	0	0%	1	0	-100%	1	0	-100%
	HEALTH	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LEISURE	1	0	-100%	19	0	-100%	20	0	-100%	34	0	-100%	74	0	-100%
4 (1500-1800)	WORK/SCH	11	4	-64%	0	0	0%	7	0	-100%	3	0	-100%	21	4	-81%
	MARKET	1	0	-100%	0	0	0%	0	0	0%	1	0	-100%	2	0	-100%
	HEALTH	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LEISURE	8	0	-100%	20	0	-100%	32	0	-100%	38	0	-100%	98	0	-100%
5 (1800-2100)	WORK/SCH	1	0	-100%	0	*	*	4	0	-100%	0	0	0%	5	0	-100%
	MARKET	1	0	-100%	0	*	*	0	0	0%	0	0	0%	1	0	-100%
	HEALTH	0	1	**	0	*	*	0	0	0%	0	0	0%	0	1	**
	LEISURE	18	0	-100%	20	*	*	35	0	-100%	38	0	-100%	111	0	-100%
ALL ACTIVITIES ALL DAY		100	27	-73%	100	0	-100%	195	117	-40%	196	114	-42%	591	258	-56%

Abbreviations and symbols used: WORK/SCH=Work or School (as relevant); O=Observed Trips; M=Modelled Trips; D=% Difference; **=Divided by zero; *= Model not available

Table 8.8 Multinomial logit model application (Models developed using full Hala data)

TIME SEGMENT	ACTIVITY TYPE	INDIVIDUAL TYPE														
		HEAD			PARTNER			CHILD>15			CHILD<15			ALL INDIVIDUALS		
		O	M	D	O	M	D	O	M	D	O	M	D	O	M	D
1 (0600-0900)	WORK/SCH	18	6	-67%	1	0	-100%	17	39	129%	5	38	660%	41	83	102%
	MARKET	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	HEALTH	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LEISURE	2	0	-100%	19	0	-100%	22	0	-100%	33	0	-100%	76	0	-100%
2 (0900-1200)	WORK/SCH	19	6	-68%	1	0	-100%	20	39	95%	5	15	200%	45	60	33%
	MARKET	0	0	0%	0	0	0%	0	0	0%	1	0	-100%	1	0	-100%
	HEALTH	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LEISURE	1	0	-100%	19	0	-100%	19	0	-100%	32	0	-100%	71	0	-100%
3 (1200-1500)	WORK/SCH	19	5	-74%	1	0	-100%	19	39	105%	5	15	200%	44	59	34%
	MARKET	0	0	0%	0	0	0%	0	0	0%	1	0	-100%	1	0	-100%
	HEALTH	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LEISURE	1	0	-100%	19	0	-100%	20	0	-100%	34	0	-100%	74	0	-100%
4 (1500-1800)	WORK/SCH	11	1	-91%	0	0	0%	7	0	-100%	3	0	-100%	21	1	-95%
	MARKET	1	0	-100%	0	0	0%	0	0	0%	1	0	-100%	2	0	-100%
	HEALTH	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LEISURE	8	0	-100%	20	0	-100%	32	0	-100%	38	38	0%	98	38	-61%
5 (1800-2100)	WORK/SCH	1	0	-100%	0	0	0%	4	0	-100%	0	0	0%	5	0	-100%
	MARKET	1	0	-100%	0	0	0%	0	0	0%	0	0	0%	1	0	-100%
	HEALTH	0	0	0%	0	1	**	0	39	**	0	0	0%	0	40	**
	LEISURE	18	0	-100%	20	0	-100%	35	0	-100%	38	39	3%	111	39	-65%
ALL ACTIVITIES ALL DAY		100	18	-82%	100	1	-99%	195	156	-20%	196	145	-26%	591	320	-46%

Abbreviations and symbols used: WORK/SCH=Work or School (as relevant); O=Observed Trips; M=Modelled Trips; D=% Difference; **=Divided by zero; *= Model not available

The model performance can be studied on the basis of variation within the activity type and the individual type, over the time segments. The deviation for activity Work for the Household Head varied between 60-90% in the first four time segments. The least variation was in time segments 2 and 3 (0900-1500). This was the time period where most work trips were carried out. The models were also found to predict more accurately some of the daily trips by Partners (housewives). Market and Health trips are examples of these activity types.

Comparing the two models (Table 8.7 and Table 8.8) it may be seen that the overall model performance improved when models were developed using a larger database. Table 8.8 therefore has improved results especially for the 'all activities' class.

8.2.5 Discussion on model application results

For the purpose of drawing further conclusions regarding the factors affecting model performance, the difference between average values of BM for Hala and Khuzdar was analysed. This analysis can provide insight into how the locational differences in BM would affect the predicted frequencies. This may lead to an assessment of model transferability.

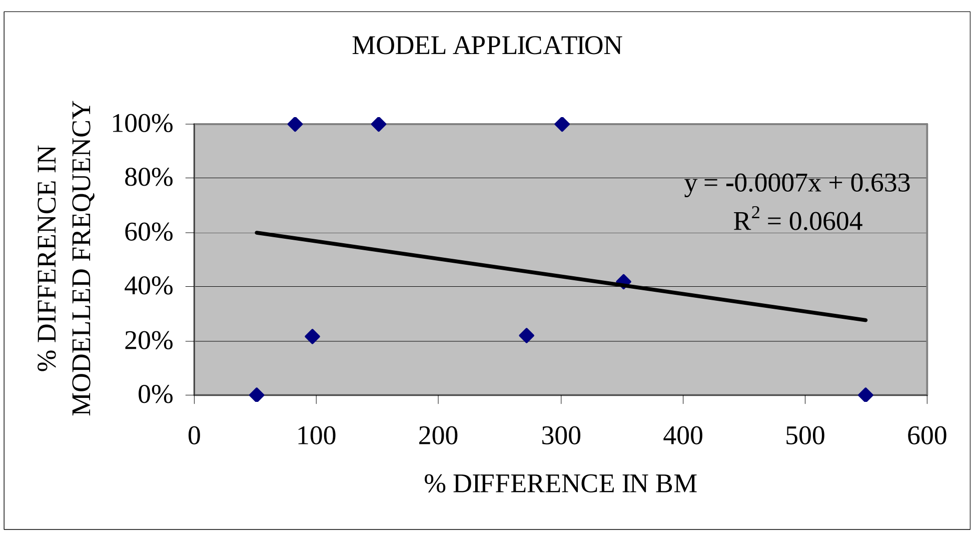


Figure 8.1 Effect of locational differences in BM on modelled results

For this analysis, first the differences between the average BM of the two locations (Khuzdar and Hala) were computed for each activity type. This was compared to the percentage difference in the observed frequency using the relevant binary logit models developed. Figure 8.1 illustrates the effect of change in the BM value on the predicted frequencies. On the basis of the regression model, the general conclusion drawn from the analysis was that the locational differences do not effect the model performance.

8.2.6 Trip threshold for non-daily activities

It was concluded earlier (chapter 7) that while modelling travel demand for non-daily activities, various time thresholds must be addressed simultaneously. It may be recalled that in Chapter 7, models were developed to predict the choice of frequency for a non-work activity by an individual (please refer to Table 7.17 in Chapter 7).

Table 8.9 Choice of frequency type

ACTIVITY FREQUENCY	AGGREGATE FREQUENCY		
	OBSERVED	*MODELLED*	*DIFFERENCE*
Activity Market:			
DAILY	41	26	-37%
WEEKLY	6	19	217%
Activity Health:			
DAILY	1	0	-100%
WEEKLY	0	0	0%
MONTHLY	0	0	0%
OCCASIONAL	48	62	29%

The activities considered were Market and Health, and the individual type considered was Household Head. Applying these models to Khuzdar data, the choice of activity frequency was predicted for the two activities.

For the activity Market, model results were improved from the binary logit models (Table 8.6). This indicates that the decision to participate in activity Market does not follow a binary choice pattern. Model results, however were not improved from the models applied considering choice of these activities as multinomial choice (Table 8.7 and Table 8.8). This indicates that, as far as data from Khuzdar is concerned, travel to Market may be best modelled as a daily activity within a multinomial choice context. This point may be explained by re-considering the data analysis reported in chapter 6. It may be seen in Table 6.6 (chapter 6) that in the case of Hala, the daily frequency dominates for the activity Market (78%). This means that households do recognise the time threshold for the activity Health. In the case of Khuzdar however, the activity Market showed a distribution of frequency types (54% for daily). This indicates that the household activity-travel pattern does not reveal a particular non-daily threshold for the activity. In conclusion, the multinomial choice model for the activity Market may be considered as a suitable tool for modelling travel demand for activity Market. In the case of activity Heath, the deviation of 29% in frequency type 'occasional' confirms that participation in the activity follows a non-daily threshold. This result indicates that the models predicting frequency type may be applied to identify the trip threshold for the activity Health.

8.2.7 Analysis of model results on the basis of household type and income levels

In order to obtain further insight into the application of the model in a new situation, an analysis of the travel demand of Household Heads was conducted. All households in Khuzdar were classified on the basis of two variables; namely, life cycle stage (LCS) and household income. For the purpose of this analysis the household income was grouped into three classes. This grouping was obtained using the SPSS statistical package, which divides the population into classes on the basis of clustering of data around certain values. The income levels formed were:

Low income	< Rs.5000
Medium income	Rs.5000 to Rs. 9500
High income	> Rs. 9500

The observed and modelled travel demand was classified on the basis of the above variables. The results are presented in Table 8.10

Table 8.10 Analysis of travel demand by Household Heads

ACTIVITY	LCS	INCOME LEVELS									ALL INCOME LEVELS		
		LOW			MEDIUM			HIGH					
		O	M	D	O	M	D	O	M	D	O	M	D
WORK	LCS1	3	3	0%	1	2	100%	N/A	N/A	N/A	4	5	25%
	LCS2	16	21	31%	5	5	0%	1	1	0%	22	27	23%
	LCS3	7	7	0%	1	1	0%	1	1	0%	9	9	0%
	LCS4	11	13	18%	4	7	75%	1	1	0%	16	21	31%
	ALL LCS	37	44	19%	11	15	36%	3	3	0%	51	62	22%
MARKET	LCS1	2	3	50%	0	2	100%	N/A	N/A	N/A	2	5	150%
	LCS2	12	21	75%	3	5	67%	0	1	**	15	27	80%
	LCS3	3	7	133%	0	1	**	1	1	0%	4	9	125%
	LCS4	6	13	117%	3	7	133%	0	1	**	9	21	133%
	ALL LCS	23	44	91%	6	15	150%	1	3	200%	30	62	107%
HEALTH	LCS1	3	2	-33%	1	2	100%	N/A	N/A	N/A	4	4	0%
	LCS2	12	11	-8%	0	3	**	0	0	0%	12	14	17%
	LCS3	3	4	33%	0	1	**	0	0	0%	3	5	67%
	LCS4	5	7	40%	0	3	**	1	0	-100%	6	10	67%
	ALL LCS	23	24	4%	1	9	800%	1	0	-100%	25	33	32%
LEISURE	LCS1	0	0	0%	2	0	-100%	N/A	N/A	N/A	2	0	-100%
	LCS2	3	0	-100%	0	0	0%	0	0	0%	3	0	-100%
	LCS3	0	0	0%	0	0	0%	0	0	0%	0	0	0%
	LCS4	0	0	0%	1	0	-100%	0	0	0%	1	0	-100%
	ALL LCS	3	0	-100%	3	0	-100%	0	0	0%	6	0	-100%
ALL ACTIVITIES		86	112	30%	21	39	86%	5	6	20%	112	157	40%

Abbreviations and symbols used: O=Observed Trips; M=Modelled Trips; D=% Difference

**=Divided by zero; N/A=Data does not exist

The variation of model results for each activity was analysed on the basis of two considerations, namely; role allocation and the resulting time (coupling) constraints. The role allocation results in the responsibility (or flexibility) of the Household Head to perform various activities pertinent to their household. The time utilisation would be the result of various constraints binding upon the Household Heads in terms of their role as well as the daily time budget. The coupling constraints refer to the requirement of being present at a certain location at a certain time. The following paragraphs discuss modelled travel demand with reference to the above considerations, i.e. role allocation and time utilisation, for each household type.

For LCS1 households (households without children) it may be argued that the Household Heads have a fixed role in terms of lesser number of persons but, at the same time, have a flexibility of time utilisation in terms of coupling constraints. This resulted in higher deviation for Market and Leisure (discretionary activities) and comparatively lower deviations for Work and Health.

The LCS2 households (households with pre-school children only) imposed greater constraints on Household Heads as the Partners may not share activities like Market. This resulted in more fixed times for the activity Market and the model results in lower deviation as compared to the other LCS types. The deviation for Health was higher than LCS1 indicating sharing of the burden by Partners. The deviation for Work and Leisure was similar to the LCS1.

The Household Heads for LCS3 households (households with elder children only) have more flexibility of the role allocation as well as their time utilisation, as elder children may share the responsibilities for the activity Market. This resulted in higher deviation for Market, Health and Leisure. The lower deviation for Work was a result of more fixed involvement in earning activities due to economic reasons (large household size and high responsibility).

The Household Heads for LCS4 households (with both pre-school and elder children) have more flexible role allocation as well as higher coupling constraints. This results in varying utilisation of time budget by the Household Heads for various activities. The deviations of modelled results were also higher for the same reasons.

Considering totals for each income level, model predictions showed lower deviations for low and high income levels (all activities row in Table 8.10). This showed that the model was able to capture the activity participation for the two extremes of income levels.

The above discussion showed that model results were sensitive to both the household type and the income level of the households. Lower deviations may be expected for LCS1 and LCS3 and for low and high levels of income.

8.2.8 Conclusions from the case study

The following are the results and conclusions for the case study presented:

1) A summary of procedures was developed which served as the guide for the application of the travel demand model in any given situation.
2) The survey requirement for the formulation of data at various stages of model was identified. This can serve as a guide for any data collection needs. The model was applied to predict travel demand for Work, School, Market, Health, and Leisure activities. The individual types considered were Household Heads, Partners, Children under- and over15 years.
3) It was found that in general the model verified the conceptual basis of its assumptions within the household travel behaviour. The model was also found to be addressing the concept of threshold frequencies for Market and Health, being non-daily activities.

8.3 MODEL SENSITIVITY TO KEY BM PARAMETERS

It may be recalled that the accessibility benefits index BM is used as a proxy to individual utility in the development of discrete choice models. The BM index consists of a number of parameters. Empirical values of these parameters were obtained using household data collected for this research. It is appropriate to analyse the sensitivity of model performance to these parameters. The outcome would validate the travel demand results obtained. It would also identify the parameters which play a key role in modelling individual travel demand.

8.3.1 Sensitivity analysis methodology

Sensitivity analysis of the travel demand model was carried out on the basis of two parameters. These parameters are the value of time coefficient α, and the level of activity parameter ρ. In the development of individual BM vectors, these parameters have been assigned certain values. The sensitivity analysis consisted of varying these parameters about the base values assumed. The range for percentage change was taken as ±90% of the values adopted. This gives a set of BM model parameter values. Each of these values was used to form an array containing the BM for all individuals. This provided input for the estimation of model parameters. This procedure gives a set of new models corresponding to each of the new parameter values. The models thus obtained were used to predict individual choice probabilities and aggregate travel demand. Analysis of the results identified model sensitivity to each of these parameters. The following paragraphs explain the detailed procedure and model results for each of these parameters.

8.3.2 Value of time coefficient

To reiterate, the accessibility benefits index BM contained the term αI which is defined as the opportunity cost value of time. In this term, I represents the income and α represents the value of time (VOT) coefficient. In the empirical formulation of the BM model, I was considered as household income and α was given the following values:

α = 1.33; for compulsory activities, i.e. Work and Health
α = 0.33; for non-compulsory activities, i.e. School, Market, and Leisure

In the sensitivity analysis, these values were varied in a systematic order and individual BM's were computed for each of the values obtained. The resulting average values of BM for activities Work and Market are summarised in Table 8.11. The pattern of variation in BM values is given in Figure 8.2.

Table 8.11 Average BM for activities Work and Market

%CHANGE	AVERAGE BM		%CHANGE	AVERAGE BM	
	WORK	*MARKET*		*WORK*	*MARKET*
-90%	7.662	1.502	10%	7.870	1.542
-80%	7.687	1.502	20%	7.882	1.549
-70%	7.714	1.503	30%	7.894	1.556
-60%	7.741	1.504	40%	7.905	1.563
-50%	7.765	1.507	50%	7.915	1.570
-40%	7.787	1.511	60%	7.924	1.577
-30%	7.807	1.516	70%	7.932	1.583
-20%	7.825	1.521	80%	7.940	1.590
-10%	7.841	1.528	90%	7.948	1.597
0%	7.856	1.535			

The BM values for the two activities (Work and Market) experience different effects. While BM-Work shows a convex exponential trend, BM-Market shows a concave exponential trend.

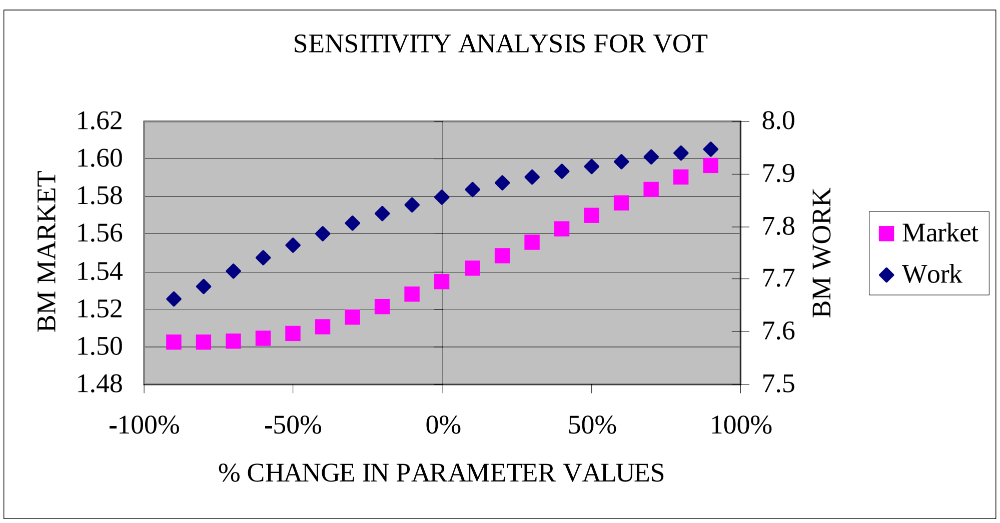


Figure 8.2 Variation in BM values with change in α

The values of BM-Work were found more sensitive for lower values of α (between –90% to 0%) and less sensitive beyond this. The opposite was true for the BM-Market. The reason for the opposite trend is the numerical values adopted for the two activities. The higher value of α (1.33) for Work makes it less sensitive beyond the value assumed. The lower value of α (0.33) for Market gives room for higher values to be adopted. The equilibrium, therefore, would possibly be achieved by lowering the value of α for Work and increasing the value of α for non-work activities.

Each of the nineteen cases provided a set of model inputs in the form of arrays for individual BM. Each set was used in the development of multinomial logit models. Models were developed for activity Work for Household Heads. The general model form used for the model parameter estimation stage was:

$$P^i_{WORK} = \frac{\exp(\beta_{WORK} * BM^i{}_{WORK} + \beta_{MARKET} * BM^i{}_{MARKET})}{1 + \exp(\beta_{WORK} * BM^i{}_{WORK} + \beta_{MARKET} * BM^i{}_{MARKET})} \qquad (8.1)$$

where

P^i_{WORK} = probability that individual *i* selects the activity *Work*

BM^i_m = utility index for individual *i* for each activity *m* in his choice set *C*

β_j= estimable model parameters, accounting for accessibility of activity *j*

Table 8.12 Aggregate forecasts and LR values for VOT experiment

%CHANGE	MODEL RESULTS		%CHANGE	MODEL RESULTS	
	%DIFF	*LR*		*%DIFF*	*LR*
-90%	-2.84%	48.666	10%	2.50%	44.312
-80%	-1.75%	48.393	20%	2.74%	44.054
-70%	-0.85%	47.857	30%	2.94%	43.822
-60%	-0.20%	47.256	40%	3.14%	43.611
-50%	0.34%	46.681	50%	3.30%	43.420
-40%	0.81%	46.160	60%	3.43%	43.244
-30%	1.23%	45.696	70%	3.57%	43.083
-20%	1.62%	45.286	80%	3.70%	42.935
-10%	1.94%	44.923	90%	3.83%	42.797
0%	2.26%	44.600			

Models obtained for each of the eleven cases were applied to predict aggregate travel demand for activity Work. The observed aggregate frequency for activity Work was compared to the modelled frequencies, and the percentage difference for each of the result was obtained. The effect of change in values of parameter α on model output was studied. Table 8.12 contains the results of this analysis. Two types of variation were summarised in the table. The model results are represented by percentage difference between predicted and observed aggregate frequencies. The statistical strength of the models obtained is represented by a test statistic, the likelihood ratio (LR).

From Table 8.12 it can be seen that the modelled frequency is sensitive to the value of time parameter α. The level of sensitivity on the other hand, was higher between -90% and -50%, and lower between -50% to +90%. From the values of LR it may be deduced that very low values of α would result in under-estimation of observed demand, while very high values would tend to over-estimate. The rate of change of LR was initially higher, and later becomes flatter. This effect is illustrated in Figure 8.3. The above absolute values of the two functions (%difference and LR) were converted into percentage change from the base value. The base value was defined as the value of the respective variable at 0% change of α.

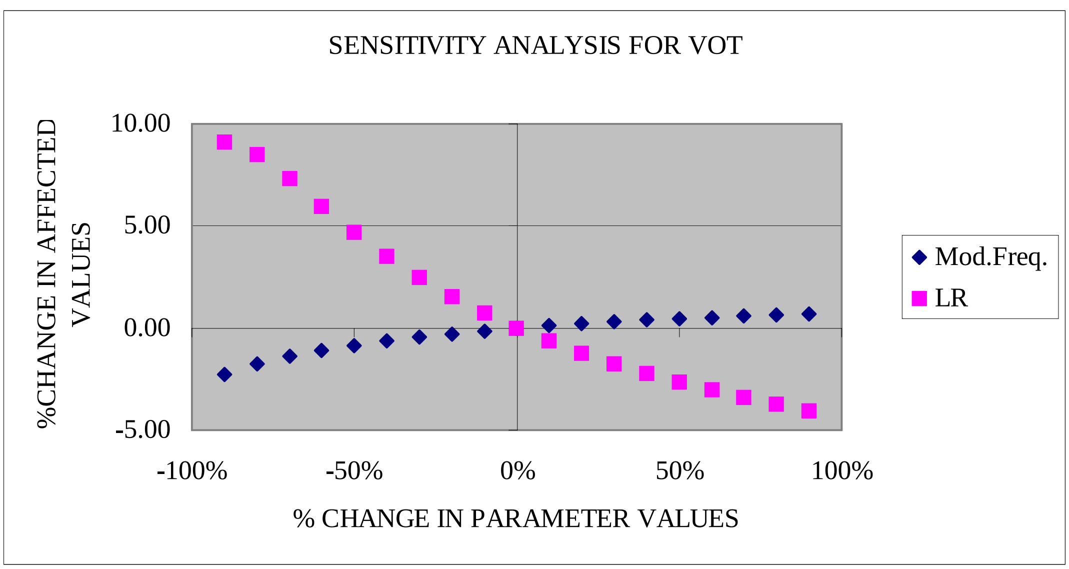


Figure 8.3 Sensitivity of aggregate demand prediction to VOT estimation

Figure 8.3 illustrates the variation of the model statistic LR in comparison to the percentage difference of modelled frequency. The curve for LR may be seen to vary inversely to that of the percentage difference curve. It is understood from the basic concepts of logistic regression modelling that higher LR values reflect better fit to the observed data. With this premise, it may be argued that the accuracy of the model varies inversely with the empirical value of the parameter α.

On the basis of the above analysis, it may be concluded that the value of time parameter plays an important role in the accessibility-based analysis of individual travel behaviour. The numerical values of this parameter assumed for the purpose of this research proved to be adequate.

8.3.3 Level of activity parameter

In the accessibility-based approach, the level of activity parameter plays an important role in the choice of a given activity. The parameter ρ accounts for the level of activity in the accessibility benefits model (BM). The mathematical formulation of parameter ρ was explained in chapter 7, i.e.:

$$\rho_j = 1 - \frac{1}{\{\exp(s)\}^a} \tag{8.2}$$

where

ρ_j = level of activity *j*

s = attribute accounted for representing level of activity

a = model calibration parameter

In the development of the mathematical form for the two activities Work and Market, the following attributes and values were adopted, based on data collected:

	WORK	MARKET
s	Number of jobs	Number of shops
a	0.01	0.1

The RHO sensitivity analysis

The sensitivity analysis of parameter ρ consisted of changing the value of the model calibration parameter a around the values assumed. Individual BM's for activities Work and Market were calculated using the mathematical form obtained as a result of change in values of a (in equation 8.2). The resulting average values of BM for activities Work and Market are summarised in Table 8.13. The pattern of variation in BM values is given in Figure 8.4.

Table 8.13 Average BM for activities Work and Market

%CHANGE	AVERAGE BM		%CHANGE	AVERAGE BM	
	WORK	*MARKET*		*WORK*	*MARKET*
-90%	2.726	0.473	10%	7.940	1.655
-80%	4.411	0.797	20%	8.005	1.672
-70%	5.514	1.033	30%	8.056	1.685
-60%	6.261	1.208	40%	8.097	1.694
-50%	6.778	1.338	50%	8.129	1.702
-40%	7.144	1.435	60%	8.155	1.707
-30%	7.408	1.507	70%	8.176	1.711
-20%	7.602	1.561	80%	8.193	1.715
-10%	7.747	1.602	90%	8.208	1.717
0%	7.856	1.632			

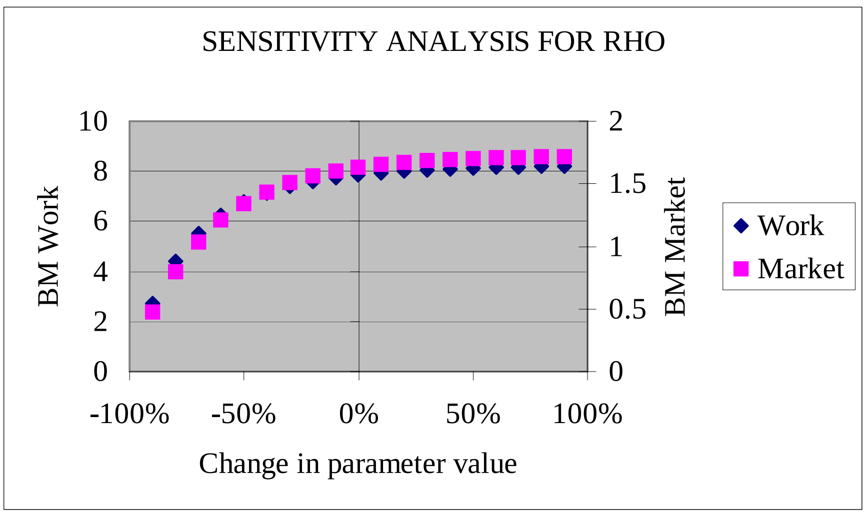


Figure 8.4 Effect of change in RHO

Analysis of Table 8.13 and Figure 8.4 shows that BM values for both the activities were affected similarly. BM values are highly sensitive in the lower part of the curves (-90% to -50%) and less sensitive beyond.

Input vectors developed for all the cases were used to model individual choice probabilities and aggregate frequency for activity Work. Table 8.14 summarises model results for the entire range of percent change in parameter *a*.

Table 8.14 Aggregate forecasts and LR values for ρ parameter sensitivity

%CHANGE	MODEL RESULTS		%CHANGE	MODEL RESULTS	
	%DIFF	*LR*		*%DIFF*	*LR*
-90%	1.89%	44.724	10%	2.29%	44.594
-80%	2.05%	44.664	20%	2.29%	44.588
-70%	2.14%	44.636	30%	2.27%	44.58
-60%	2.20%	44.621	40%	2.28%	44.571
-50%	2.22%	44.613	50%	2.27%	44.562
-40%	2.26%	44.609	60%	2.27%	44.552
-30%	2.26%	44.607	70%	2.29%	44.542
-20%	2.27%	44.605	80%	2.28%	44.532
-10%	2.28%	44.603	90%	2.29%	44.522
0%	2.26%	44.599			

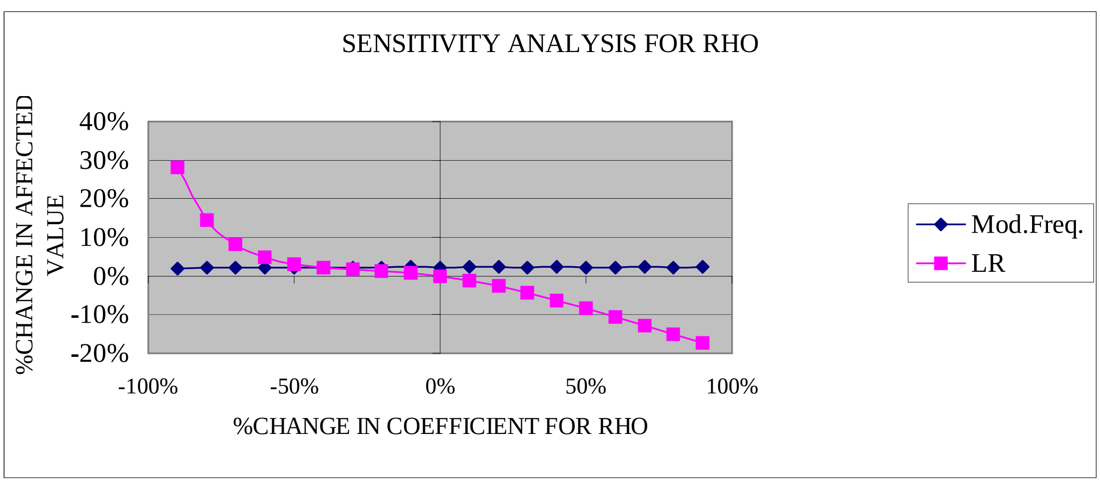


Figure 8.5 Sensitivity of aggregate demand prediction to value of ρ

According to Table 8.14 the model accuracy increases as the value of parameter a is decreased. But this property is only relevant in very low values of *a*. The range in which the model is highly sensitive is around -90% to -70%.

Figure 8.5 shows variation of the test statistic ‘likelihood ratio’ (LR). The trend of LR suggests that the model becomes more accurate as the value of *a* is reduced. The combined effect of the two curves therefore suggests that values of *a* near the lower extreme would provide the best model. The accuracy would reduce as the value of *a* is further increased.

The results of this sensitivity analysis indicate that the values assumed for *a* would need to be lowered to about -80% in order to achieve any improvement in model results.

8.3.4 Sensitivity of other BM parameters

It is worth mentioning that the sensitivity analysis covered only two parameters, namely, α and ρ. The other key parameters were not considered because of either of the following two reasons:

a) the data collected provides variation such that the model application for various situations covers this variation
b) the parameter is based on activity types, such that it would only change if a totally different definition of activity types is used

The parameters in the category (a) are household income (I), speed of travel, (v), distance to activities (x), and measure of utility per unit time (h). The parameters in the category (b) are activity attraction parameter (ω), and marginal utility of time (γ).

8.4 SUMMARY

This chapter demonstrated the application of the rural travel demand modelling system. Data collected from rural areas of Pakistan formed the case study for empirical verification of the modelling system. The models developed for data collected from Hala have been used to predict travel demand for Khuzdar. Individual BM's were obtained using household data collected from Khuzdar. The modelled frequencies for activity Work for Household Heads were closer to the observed values. The models gave varying deviations in prediction of travel demand for activities Market, Health and Leisure.

The activities exhibiting high deviation were non-daily activities and the individual type Partners. It was concluded that the main reason for this deviation was that the model did not address how the household perceives the frequency type for these activities and this individual type. An important point worth noting was that the main transport burden did not come on the Housewives. The model weakness in this area would not undermine the overall applicability of the concepts developed.

A sensitivity analysis was also carried out in order to ascertain model dependency on assumed values of the parameters. The sensitivity of key parameters (i.e. value of time coefficient α, and level of activity parameter ρ) was studied. The results showed that both parameters were sensitive to lower values than those adopted in this research. The model statistics suggest however, that lowering their values would not improve the accuracy of model results.

CHAPTER 9

CONCLUSIONS

9.1 GENERAL

A system for modelling rural travel demand for developing countries has been developed, based on a household activity approach. The subsequent analysis considered the concepts of household activity-travel behaviour analysis to model travel behaviour. The system integrates household access needs and individual time-space constraints in an accessibility-activity approach.

Rural household data were collected from Pakistan and stored in a database. The analysis of rural activity-travel behaviour provided insight into the factors affecting household travel decision-making. Logistic regression models were formulated and subsequently validated by using the collected data.

9.2 STUDY OBJECTIVES

This work had five objectives:

Objective-1: To develop a conceptual framework for studying rural needs and travel to access the activities generated by these needs.

To meet this objective, a rural travel demand-modelling framework was developed which considered travel as a derived demand. It viewed travel for activities as the result of the desire to fulfil needs. The framework considered the household as the basis of needs formation and the individual as the decision-maker to carry out the activities. The mathematical formulation considered accessibility of activities on the basis of the time and space constraints binding upon individuals.

Objective-2: To analyse rural travel demand considering accessibility of activities.

Household data collected from rural areas in Pakistan served as the basis of analysing rural activity-travel behaviour. Various factors affecting household needs and individual participation decision were studied.

Objective-3: To incorporate cultural and gender effects in the rural accessibility-activity framework.

With the household as the basic unit of analysis, the travel demand framework was able to address the cultural and gender issues in the formulation of needs and the distribution of responsibilities for activity participation. The accessibility measures considered how the households perceive an activity within the culture and gender bounds.

Objective-4: To study factors governing the economics of household decision making.

The accessibility-activity approach recognised the economic dimensions of individual activity participation decisions. Perceived value of time for an out-of-home activity and the associated travel has been an important factor in shaping household activity-travel pattern.

Objective-5: To develop a comprehensive modelling system for rural travel demand analysis.

This was the ultimate objective of this work. To this end, the database developed from rural household surveys carried out in Pakistan in 1999, enabled the development of a system for modelling disaggregate travel demand. The specification and testing of various components of the modelling framework were carried out. Validation of the behavioural hypotheses considered in the development of the conceptual framework was the final stage of the research.

9.3 RESEARCH CONCLUSIONS

The main conclusions drawn from the research reported in this thesis may be summarised as follows:

Modelling framework

The conceptual framework was developed to integrate household access needs and individual activity participation. The framework starts at household level thus recognising the household as the unit of needs formulation. From this, the need identification stage considers household interactions that determine individual level responsibilities and the resulting need for activity participation by each individual. The household role allocation transforms these needs to household individuals in order to develop individual activity agendas. The individual activity participation was the basis of defining individual travel demand for the activity concerned. The time-space geography concept was utilised to define the accessibility of activities for any individual as a household member. Due consideration was given to the activity type and the (generalised) cost constraints faced by rural individuals. A utilitarian approach was incorporated to define the travel behaviour as a result of participation in the activity rendering the highest utility to the individual.

Household data collection

Detailed household data collection was carried out from representative rural locations in Pakistan. The survey covered five villages from Hala in Sindh province and four villages from Khuzdar in Balochistan province. This provided activity-travel information for 164 households containing 769 individuals in total.

Rural activity-travel analysis

The analysis of activity-travel behaviour revealed that household type and its location relative to the transportation infrastructure plays an important role in shaping population travel demand. The household type was defined through life cycle stages, which consider the presence of various individual types within the household. The activities found to be important were Work, Education, Market, Health and Leisure. It was found that the Household Head was responsible for carrying out most out-of-home activities. Travel to work dominated the activity participation decisions of Household Heads. Non-work activities like Market, Health and Leisure depicted a definite trend on a longer time horizon. While Market was reported as predominantly a daily to weekly activity, Health and Leisure are reported as occasional activities. The results from the analysis verified the hypothesis that needs are initiated at the household level subsequently transformed to individual's activity on the basis of the role of the individual within the household.

Model development and validation

A system for modelling rural travel demand was developed as the main deliverable of the research reported in this thesis. The household surveys provided data for the development of the modelling system. Empirical values of various key parameters of the individual accessibility benefit were developed using the basic concepts. Logistic regression concepts have been utilised to model individual activity participation decisions. The prediction models for the activity Work gave results which are in good agreement with the observed data. The models for Market and Health were found to be satisfactory when the time horizon decision was included in the models. It was concluded that time horizon factor affects the validity of models for Market and Health and may significantly enhance model applications.

Model application and case study

A case study was formulated using data collected from Khuzdar, Pakistan. The case study aimed to test application of model for new situations. It was found in general that model verified the conceptual basis of its assumptions regarding household travel behaviour. Detailed analysis of model prediction results was carried out on the basis of Life Cycle Stage (LCS) and household income. It was concluded that model results were sensitive to both the variables, i.e. LCS and the income level of the household. Model prediction results showed lower deviations from observed data for LCS1 and LCS3 and for low income level and high income level.

9.4 FUTURE RESEARCH

Model enhancements may be achieved with the following:

- A comprehensive value of time study is required to improve value of time inputs in the accessibility benefits model.
- A participatory approach for household survey should be adopted in order to develop empirical values of accessibility parameters related to perceived importance of the fulfilment of household access needs.
- Time threshold should be introduced in the development of accessibility benefits for non-daily activities.
- The model capability to address household role allocation could be enhanced by incorporating an inter-personal linkage model considering joint presence of two or more individuals at a given location.
- Frequency of public transport should be considered as an additional constraint binding upon an individual in order to address dependence of trips on public transportation, a common problem scenario in most developing countries.
- As the rural individuals have to walk long distances to catch public transport, a modal-interchange model should be developed to address these situations
- Individual time-space analysis could be enhanced by giving probabilistic treatment to activity duration.

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APPENDIX A.

MAPS

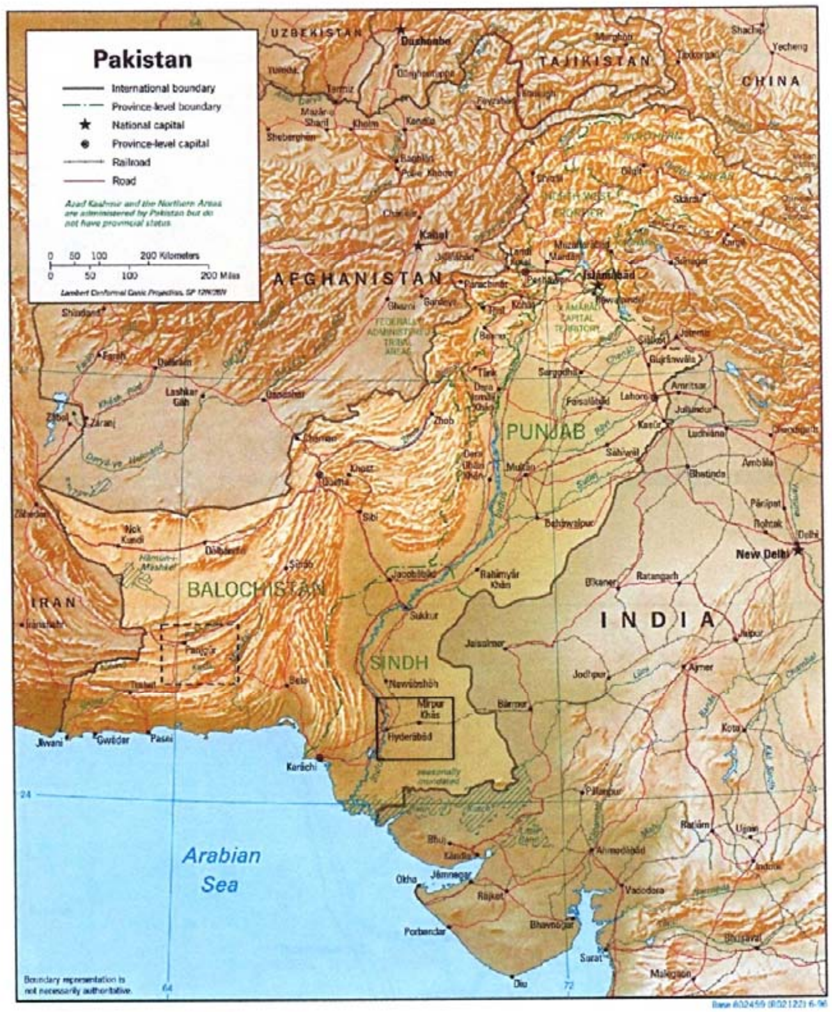
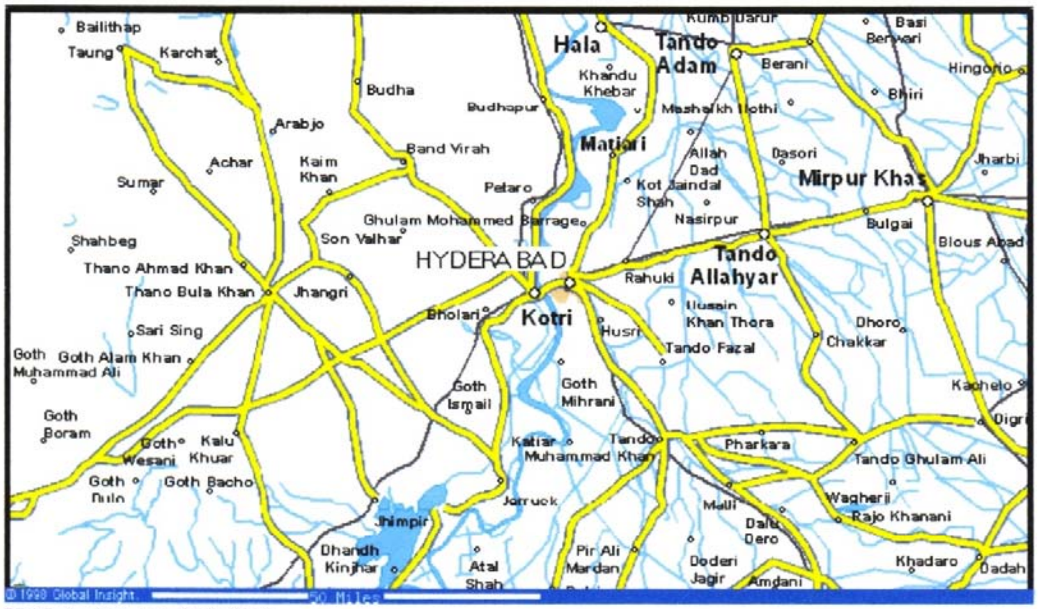


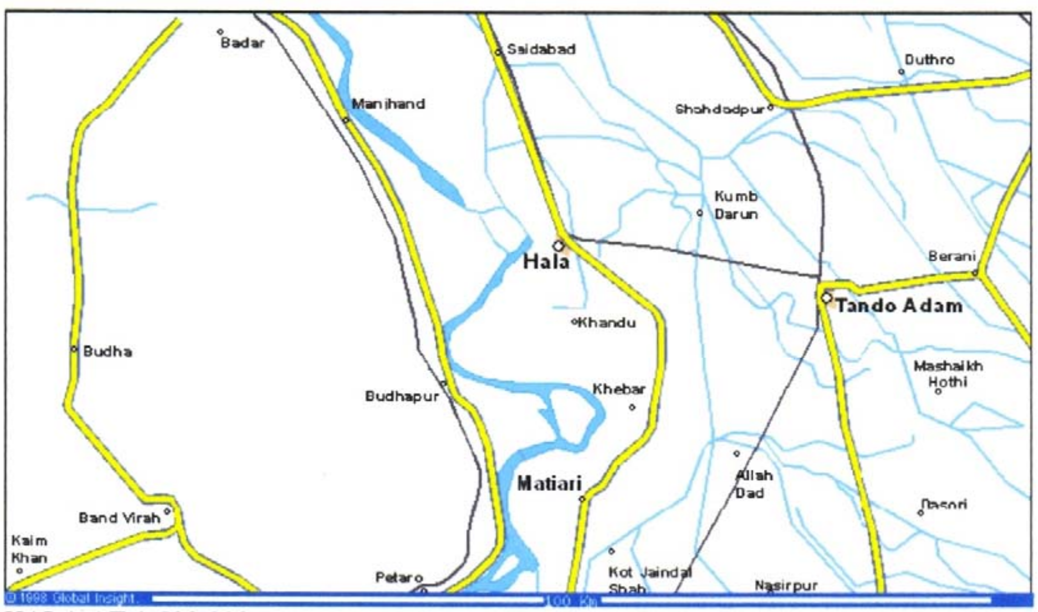
Figure A.1 Map of Pakistan

See blown-up maps of Hala, Sindh in Figures A-2 and A-3

See blown-up maps of Khuzdar, Balochistan in Figures A-4 and A-5

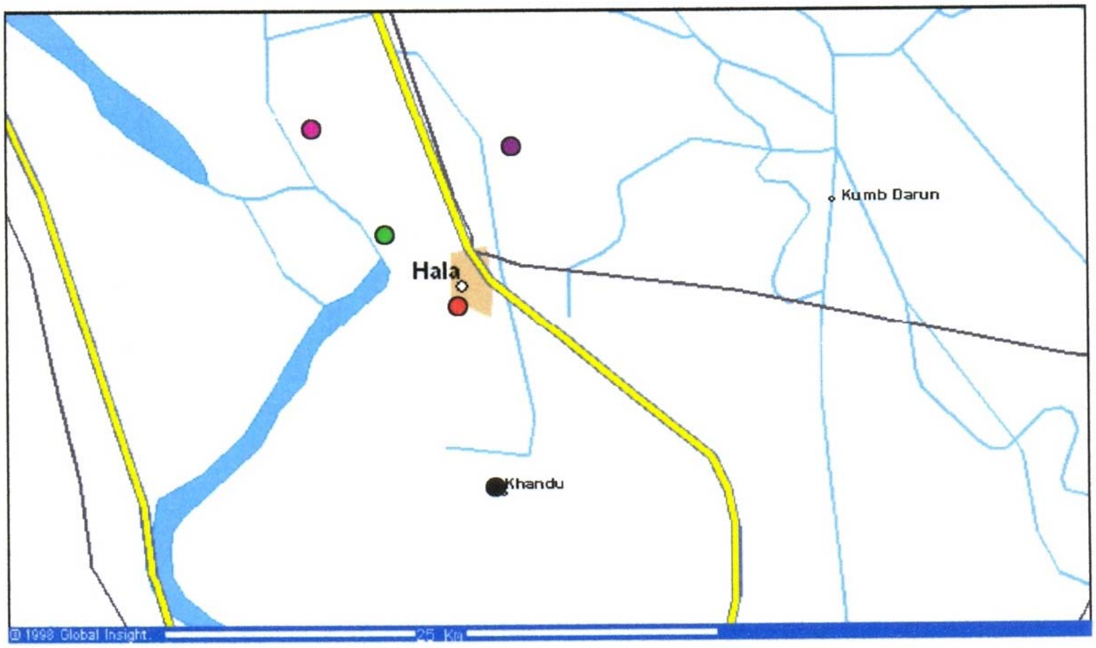


HALA AT 1:1,000,000



HALA AT 1:500,000

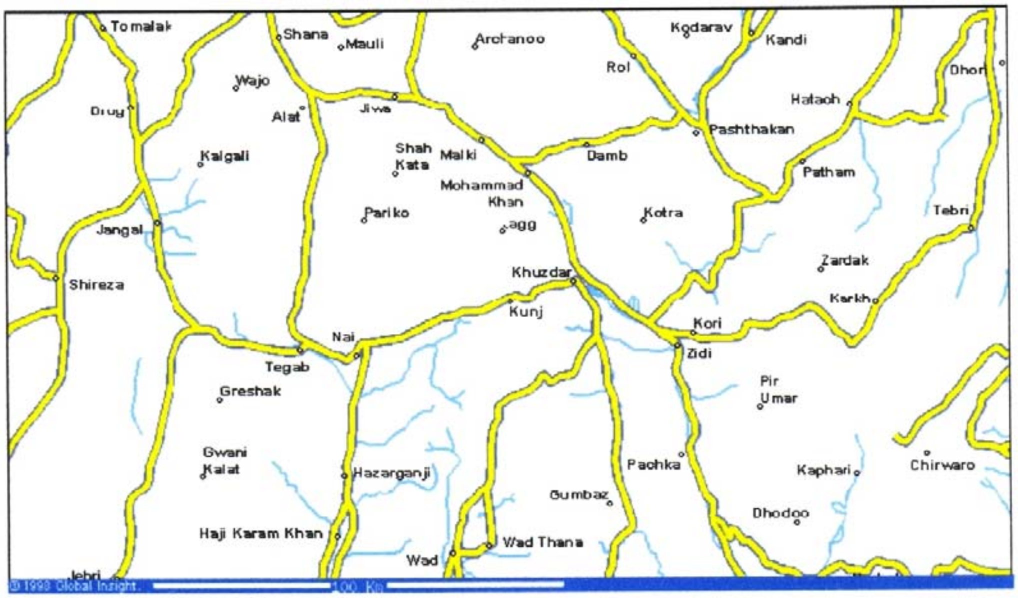
Figure A.2 Maps of Hala, Sindh



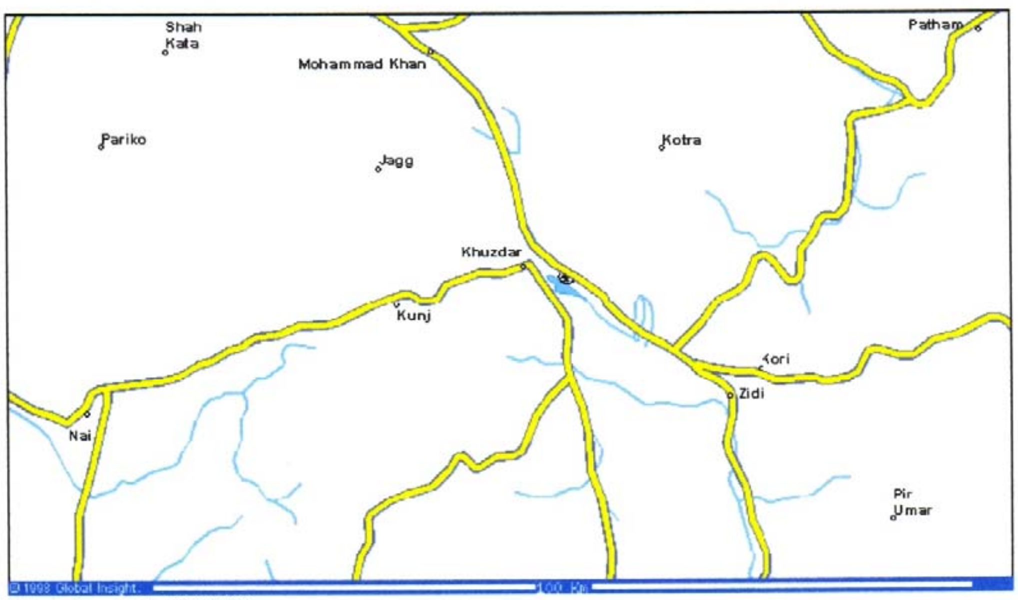
HALA AT 1:200,000

COLOUR CODES FOR SURVEY VILLAGES MARKED AS●
Hala Old
Khandu
Saeed Khan Leghari
Mansoora
Wangheri

Figure A.3 Locations of villages selected around Hala, Sindh



Khuzdar at 1:1,000,000



Khuzdar at 1:500:000

Figure A.4 Maps of Khuzdar, Balochistan

Khuzdar at 1:200,000

COLOUR CODES FOR SURVEY VILLAGES MARKED AS●
Jafarabad
Kanak
Sunni
Khairawah

Figure A.5 Locations of villages selected around Khuzdar, Balochistan

Source: http://uk2.multimap.com/map/browse.cgi

APPENDIX B.

KHUZDAR CASE STUDY DATA

TABLE B-1 KHUZDAR TRIP BASED HOUSEHOLD DATA (CASE STUDY)

AREA	INCOME (Rs.)	HOUSEHOLD SIZE	PURPOSE	DISTANCE (km)	MODE	TIME (hrs)	TRIPS (per day)
1	10000	10	S	2	P	0.5	2
1	4000	10	C	10	P	2	4
1	14000	10	S	6	M	5	2
1	5000	7	O	2	J	0.33	2
1	5000	12	O	10	J	5	2
1	10000		O	4	P	0.4	2
1	10000		F	6	T	3	4
1	10000	9	O	7	C	0.6	2
1	10000	9	F	20	C	3	4
1	10000	5	O	5	J	0.6	2
1	10000	5	M	6	J	2.5	4
1	10000	5	M	10	V	5	2
1	10000	14	S	2	M	0.3	2
1	10000	8	O	3	M	0.45	2
1	40000	11	O	2	C	0.45	2
1	40000	11	M	3	C	2	2
1	40000	11	O	2	C	0.5	2
2	5500	10	W	2	M	0.5	2
2	5500	10	F	2	M	0.5	2
2	6000	15	F	10	T	0.75	2
2	4000	12	O	2	M		2
2	4000	12	M	3	M		2
2	13000	14	O	2	V	0.4	4
2	13000	14	M	20	V	3.5	4
2	13000	14	O	2	M	0.4	2
2	13000	14	M	6	M	3	2
2	10000	14	W	9	M	7	4
2	10000	14	M	6	M	2	4
2	6500	8	O	3	M	0.5	2
2	6500	8	M	6	M	3	2
2	15000	25	W	8	T	5	2
2	15000	25	M	9	M	7	2
2	2500	10	W	3	M	7	2

AREA	INCOME (Rs.)	HOUSEHOLD SIZE	PURPOSE	DISTANCE (km)	MODE	TIME (hrs)	TRIPS (per day)
2	2500	10	W	2	M	7	2
2	5000	8	O	10	M	2	2
2	4000	20	O	30	M	4	2
2	4000	20	M	4	M	2	2
2	8000	12	W	6	M	0.5	4
2	8000	12	M	4	M	2	4
2	4000	10	O	6	M	0.6	2
2	4000	10	M	4	M	2	2
2	4000	25	W	6	J	0.6	4
2	4000	25	M	4	J	2	4
2	5000	28	W	4	M	7	2
3	5000	4	O	20	V	3	2
3	5000	4	M	10	V	3	2
3	3000	6	C	4	M	3	2
3	4000	14	W	4	M	0.4	2
3	4000	14	M	3	M	2	2
3	3000	7	O	4	M	0.4	4
3	3000	7	M	3	M	3	4
3	7000	12	W	4	M	0.4	2
3	3000	3	W	4	M	0.5	2
3	3000	10	W	40	C	6	2
3	3000	10	W	4	M	0.5	2
3	3000	9	W	4	M	0.5	2
3	3000	12	O	4	M	0.5	2
3	3000	12	M	5	M	2	2
3	2500	12	M	25	M	7	2
3	3000	7	W	4	M	0.4	2
3	3000	4	W	90	D	7	2
3	4000	11	W	30	M	3	2
3	3500	13	O	5	M	0.5	2
3	12000	8	W	45	C	5.5	2
3	8000	10	W	30	P	5	2
3	4200	10	O	6	M	0.5	2
3	8000	5	O	10	M	2	2
3	8000	5	M	6	M	3	2

AREA	INCOME (Rs.)	HOUSEHOLD SIZE	PURPOSE	DISTANCE (km)	MODE	TIME (hrs)	TRIPS (per day)
3	10000	7	W	3	M	0.5	4
3	10000	7	W	6	M	2	4
4	4500	16	O	4	M	0.4	2
4	4500	16	M	3	M	1	2
4	12000	10	W	30	P	12	4
4	12000	10	M	5	P	0.5	4
4	5800	12	D	60	T	24	2
4	7000	11	O	6	P	0.5	2
4	15000	16	W	6	C	0.4	4
4	15000	16	O	4	M	0.5	4
4	10000	7	D	25	TT	12	2
4	4000	12	W	5	M	0.3	2
4	4500	7	W	2.5	M	15	2
4	6500	12	W	2	M	0.25	4
4	6500	12	M	3	M	0.4	4
4	3500	8	O	3	M	0.3	2
4	3500	8	M	3	M	0.7	2
4	6000	12	W	30	V	2	2
4	4500	15	W	2	M	0.3	2
4	4500	15	M	3	M	0.7	2
4	8000	20	W	3	V	0.3	4
4	8000	20	W	20	V	5	4
4	5000	18	D	60	T	16	2
4	7000	10	W	3	C	0.3	4
4	7000	10	M	7	C	2	4
4	12000	12	W	3	C	0.3	2
4	12000	12	C	4	C	1	2
4	3000	6	W	3	M	0.5	4
4	3000	6	C	4	M	1.5	4
4	3800	10	O	4	M	0.3	2
4	9000	18	W	4	M	0.5	4
4	9000	18	O	4	M	0.4	4
4	2500	7	M	3	M	1	2
5	4200	8	O	2	V	0.5	4
5	4200	8	W	24	P	8	4

AREA	INCOME (Rs.)	HOUSEHOLD SIZE	PURPOSE	DISTANCE (km)	MODE	TIME (hrs)	TRIPS (per day)
5	4000	6	O	2	M	0.3	2
5	4000	6	M	6	M	2	2
5	7000	8	O	3	C	0.4	4
5	7000	8	M	4	C	2	4
5	12000	14	W	4	J	0.5	2
5	12000	14	W	2	J	0.5	2
5	10000	10	W	2	C	0.5	4
5	10000	10	W	6	C	0.75	4
5	3000	6	O	2	M	0.3	2
5	3000	6	F	12	M	5	2
5	6000	8	O	10	M	3	4
5	6000	8	M	6	M	2	4
5	4000	9	O	3	M	0.4	2
5	4000	9	M	4	M	2	2
5	12000	6	C	3	M	0.4	4
5	12000	6	M	4	M	2	4
5	10000	7	O	6	J	2	2
5	10000	7	M	4	J	3	2
5	12000	22	M	50	M	12	2
5	10000	25	W	4	C	0.5	2
5	10000	25	M	6	C	3	2
5	25000	30	F	60	P	6	4
5	25000	30	M	16	P	4	4
5	4000	6	O	3	M	0.4	2
5	4000	6	M	4	M	2	2
5	8000	6	W	15	M	3	2
5	9500	11	O	10	M	0.6	2
5	9500	11	M	6	M	2	2
5	6000	7	M	30	P	2	4
5	6000	7	M	6	P	2	4
5	16000	16	M	60	M	12	2
5	12000	20	M	30	P	6	4
5	12000	20	O	6	M	0.6	4
5	12000	20	M	6	M	3	4
5	4000	6	O	4	M	0.5	2

AREA	INCOME (Rs.)	HOUSEHOLD SIZE	PURPOSE	DISTANCE (km)	MODE	TIME (hrs)	TRIPS (per day)
5	4000	6	M	3	M	3	2
LETTERS USED FOR TRIP PURPOSES:							
C	TAKING CHILD TO AND FROM SCHOOL						
D	DRIVING						
F	FARM						
M	MARKET						
O	OFFICE						
S	SHOP						
W	WORK						
LETTERS USED FOR TRAVEL MODES:							
C	CAR						
J	JEEP						
M	MOTORCYCLE						
P	PICKUP						
T	TAXI						
TT	TRUCK						
V	VAN						

APPENDIX C.

QUESTIONNAIRE

RURAL ACCESSIBILITY SURVEY

Day: ______________Date: ________________ Name of Interviewer: ________________________

Household ID number: Cluster: [ ] Village: [ ] House: [ ]

PART-1: HOUSEHOLD INFORMATION

(To be collected from Household Head)

Q.1 Please tell us about number of persons in your house?

1.1 How many male adults (over 20 year) reside in this house?	[ ]	Male Adults
1.2 How many female adults (over 20 year) reside in this house?	[ ]	Female Adults
1.3 How many children over 15 years reside in this house?	[ ]	Children over 15 years
1.4 How many children under 15 years of age reside in this house?	[ ]	Children under 15 years
Total Number of Individuals	[ ]	S

Q.2 Please give details of all individuals in your household, starting from Household Head

2.1 IMMEDIATE FAMILY OF THE HEAD

ID	RELATION TO HEAD	NAME (optional)	AGE	SEX
2.1.1	Household Head		[ ]	M/F
2.1.2			[ ]	M/F
2.1.3			[ ]	M/F
2.1.4			[ ]	M/F
2.1.5			[ ]	M/F
2.1.6			[ ]	M/F
2.1.7			[ ]	M/F

2.2 EXTENDED FAMILY / UNRELATED INDIVIDUALS

ID	RELATION TO HEAD	NAME (optional)	AGE	SEX
2.2.1			[ ]	M/F
2.2.2			[ ]	M/F
2.2.3			[ ]	M/F
2.2.4			[ ]	M/F
2.2.5			[ ]	M/F

Q.3 What transport vehicle do you own in your household?

[0] None	[1] Animal cart	[2] Bicycle	[3] Tractor trailer
[4] Motor cycle	[5] Car/Jeep	[6] Other (specify)	

Q.4 Please give some information about HOUSEHOLD STORAGE AND HABITS

4.1 Does your household have WATER SUPPLY?	[Yes] [No]	IF YES GOTO 4.2
4.1.1 For how long do you store WATER	[ ]	*days*
4.1.2 What is the storage capacity for WATER	[ ]	*days*
4.2 Does your household have GAS SUPPLY?	[Yes] [No]	
4.3 For how long do you store GENERAL CONSUMABLES (Rice etc.)	[ ]	*days*

Q.5 Please give information about the activities required to fulfil household needs.

ACTIVITIES: (ONE TO BE COVERED AT A TIME) CHECK LIST: (TICK WHEN COVERED)

ACTIVITIES	CHECK LIST
5.1 OUT OF HOME WATER COLLECTION	5.1
5.2 FIREWOOD COLLECTION	5.2
5.3 GOING TO MARKET FOR SELLING GOODS	5.3
5.4 GOING TO MARKET FOR SHOPPING	5.4
5.5 ESCORTING CHILD TO SCHOOL	5.5
5.6 GOING TO HOSPITAL / CLINIC	5.6
5.7 SOCIAL ACTIVITIES: LEISURE / SPORTS	5.7
5.8 SOCIAL ACTIVITIES: MARRIAGES / GATHERINGS	5.8
5.9 OTHER (SPECIFY)	5.9

	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9
Does your household perform this activity? YES/NO IF NO GOTO NEXT ACTIVITY	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
5a *Who performs this activity (*ID NUMBERS)? 2.1.1; 2.1.2;…………….. 2.2.1; 2.2.3,……………..									
5b *How often do you need to travel for this activity?* 1 Daily; 2 Weekly; 3 Monthly; 4 Other (specify)									
5c *What is the average (one way) distance for the activity (km)?*									
5d *What average time (one way) you spend in travelling for the activity (minutes)?*									
5e *What transport mode do you generally take to travel for this activity?* 0 Walk; 1 Animal cart; 2 Bicycle 3 Tractor Trailer; 4 Motor cycle; 5 Private Car/Jeep 6 Hired Car/Jeep; 7 Bus; 8 Other (specify)									
5f *What average cost do you spend in travelling for the activity(Rs.)?*									
5g *What average time do you spend in the activity (minutes)?*									
5h *On a 1-5 scale what importance does your household gives to this activity?* Very Important 1 2 3 4 5 Very unimportant									
5i *How many locations are available for this activity within the village?*									

PART-2: INDIVIDUAL INFORMATION

To be collected from / for each Individual. (Total Number=S, as Q.1)

Identify Individual (Same as Q.2) TICK RELEVANT BOX

2.1.1 2.1.2 2.1.3 2.1.4 2.1.5 2.1.6 2.1.7 2.1.8 2.1.9 2.1.10 2.1.11 2.1.12

2.2.1 2.2.2 2.2.3 2.2.4 2.2.5 2.2.6 2.2.7

Q.6. Do you make any sort of earning? Yes No IF NO GOTO Q.8

Which of the following activities do you perform for your earning?

	TICK RELEVANT BOX	MAJOR SOURCE OF INCOME	MONTHLY INOME FROM THIS SOURCE
6.1 Waged Agricultural Labour	Yes No	Yes No	Rs.
6.2 Own Farm Agricultural Labour	Yes No	Yes No	Rs.
6.3 Waged Non- Agricultural Labour			
a) Office / indoor work	Yes No	Yes No	Rs.
b) Outdoor / field work	Yes No	Yes No	Rs.
6.4 Self Employed Non- Agricultural works			
a) Office / indoor work	Yes No	Yes No	Rs.
b) Outdoor / field work	Yes No	Yes No	Rs.
6.5 Other (specify)		Yes No	Rs.

Q.7 Some details about your Source(s) of Earning:

GUIDE:
7.1 YOUR MAJOR SOURCE(S) OF EARNING
7.2 YOUR MINOR SOURCE(S) OF EARNING

		7.1	7.1	7.2	7.2
7a	*What average daily time do you spend for the activity?(minutes)*				
7b	*Do you need to travel for this activity?* Yes/No IF NO GOTO NEXT COLUMN				
7c	*How often you need to travel for this activity?* 1 Daily; 2 Weekly; 3 Monthly; 4 Other (specify)				
7d	*What is the average (one way) distance for the activity (km)?*				
7e	*What average time (one way) you spend travelling for the activity (minutes)?*				
7f	*What transport mode do you generally take to travel for this activity?* 0 Walk 1 Animal cart 2 Bicycle 3 Tractor Trailer 4 Motor cycle 5 Private Car/Jeep 6 Hired Car/Jeep 7 Bus 8 Other (specify)				
7g	*What average cost do you spend in travelling for the activity(Rs.)?*				

EXAMPLE ACTIVITY DIARY

Start Time	**End Time**	**Activity Description**	**Activity Location**		**Travel Details**	
			Home (Tick)	**Non-Home (Describe)**	**Mode***	**Distance (km)**
6AM	7AM	Getting ready for work	3			
7 AM	7:30 AM	Going to work			5	0.5
7:30 AM	5:00 PM	Working in Office		Government Office Hala		
5:00 PM	5:30 PM	Going home			6 Bus	0.5
5:30 PM	6:00 AM	Sleep	3			

*MODES:

[0] Walk [1] Animal cart [2] Bicycle [3] Tractor Trailer
[4] Motor cycle [5] Private Car/Jeep [6] Hired Car/Jeep [7] Bus
[8] Other (specify)

Q.8 Please give details of non-earning OUT OF HOME activities do you perform on a daily basis.

GUIDE: 8.1 ATTENDING SCHOOL 8.2 ASSISTING MALE MEMBERS IN FIELD 8.3 OTHER (SPECIFY) 8.4 OTHER (SPECIFY)	8.1	8.2	8.3	8.4
Do you perform this activity?Yes/No IF NO GOTO NEXT COLUMN				
8a What average daily time do you spend for the activity?(minutes)				
*8b Do you need to travel for this activity?*Yes/No IF NO GOTO NEXT COLUMN				
8c How often do you need to travel for this activity? [1]Daily; [2]Weekly; [3]Monthly; [4]Other (specify)				
8d What is the average (one way) distance for the activity (km)?				
8e What average time (one way) do you spend travelling for the activity (minutes)?				
8f What transport mode do you generally take to travel for this activity? [0] Walk [1] Animal cart [2] Bicycle [3] Tractor Trailer [4] Motor cycle [5] Private Car/Jeep [6] Hired Car/Jeep [7] Bus [8] Other (specify)				
8g What average cost do you spend in travelling for the activity(Rs.)?				

Q.9: *Now please give detail of all ACTIVITIES you performed YESTERDAY;*
RECALL ALL ACTIVITIES WHETHER AT HOME OR OUTSIDE; START FROM GETTING UP TO GOING TO BED. MAINTAIN THE ORDER OF THE ACTIVITIES AND TRAVEL
SEE EXAMPLE ON PREVIOUS PAGE

ACTVITY DIARY (TO BE FILLED IN BY THE INTERVIEWER

Start Time	**End Time**	**Activity Description**	**Activity Location**		**Travel Details**	
			Home (Tick)	**Non-Home (Describe)**	**Mode***	**Distance (km)**

*MODES:
0 Walk
1 Animal cart
2 Bicycle
3 Tractor Trailer
4 Motor cycle
5 Private Car/Jeep
6 Hired Car/Jeep
7 Bus
8 Other (specify)

PART-3: VILLAGE OR COMMUNITY INFORMATION

(To be collected from Village Official / Any informed person)

PLEASE NOTE… FOR CROSS CHECK:
FILL ONE SET FROM AN OFFICIAL AND ONE SET FROM ANY INFORMED PERSON

A. Area and Population

A.1. What is the Total geographical area of your village? (sq.km.)	
A.2. How much is the Area under cultivation? (Hectare)	
A.3. What is the Population of this village?	
A.4. How many Households are in the village?	
A.5. Is the Village connected by All Weather Road? Yes/No IF NO: *What is the distance to the nearest All Weather Road*	km

B. Schools

GUIDE:
B.1 PRIMARY SCHOOL
B.2 SECONDARY SCHOOL FOR BOYS
B.3 SECONDARY SCHOOL FOR GIRLS

			B.1	B.2	B.3
Does your village have the facility?	YES	*How many class rooms (years) are available?*			
		What approximate number of children attend the school?			
	NO	*What is the distance to the nearest facility(km)?*			

C. Markets / Jobs

GUIDE:
C.1 MARKET
C.2 INDOOR WORKS / BUSINESSES
C.3 OUDOOR WORKS / BUSINESSES

			C.1	C.2	C.3
Does your village have the facility?	YES	*How many shops / offices / businesses?*			
		How many people can be employed?			
	NO	*What is the distance to the nearest facility(km)?*			

D. Developments Planned

Facility	Year	Level
D.1. Protected water supply		Number of locations
D.2. Primary School		Number of classes (years)
D.3. Secondary School for boys		Number of classes (years)
D.4. Secondary School for girls		Number of classes (years)
D.5. Gas supply		Number of houses connected
D.6. Electricity supply		Number of houses connected
D.7. Markets		Number of shops

APPENDIX D.

DATA-BASE

EXPLANATION OF LEGENDS AND VALUES USED

IDENTIFICATION		ACTIVITY DATA		DERIVED PARAMETERS		BM COMPONENTS	
IDNUM	Individual ID (Global)	ID	Individual responsible	m	Cost per km	BM1	Transporation component
CLUST	Cluster Number	FRQ	Frequency	RELE	Activity relevance (0,1)	BM2	Spatial component
HHN	Household Number	DST	Distance (one way)	ALPHAI	Value of time parameter	BM3	Temporal component
LCS	Life Cycle Stage	TTI	Travel time (one way)	RHO	Level of activity parameter	BM	Accessibility benefits measure
HHINC	Household Income	MOD	Travel mode	c	Model calibration parameter		
ID2.1	Household Individual ID	CST	Travel cost	omega	Activity attraction parameter		
AGE	Age	ATI	Activity duration	h	Temporal utility measure		
SEX	Sex	SCA	Scale	GAMMA	Marginal utility of time		
type	Individual Type	LOC	Number of locations				

TABLE D-1 BM DEVELOPMENT FOR ALL INDIVIDUALS (HALA)

ACTIVITY= WORK 1 <<CODE

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
1	1	1	3	4000	1	65	1	1			0	0	0	0	480			0	1	26.6	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
2	1	1	3	4000	2	55	2	2			0	0	0	0	0			0	1	26.6	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
3	1	1	3	4000	3	25	2	3			0	0	0	0	0			0	0	26.6	0.98	0.42	0	1	0	1	0	1	0
4	1	1	3	4000	4	20	2	3			0	0	0	0	0			0	0	26.6	0.98	0.42	0	1	0	1	0	1	0
5	1	2	2	4000	1	35	1	1			60	60	7	34	660			0.57	1	26.6	0.98	0.42	1	1	1.33	0.01	0.41	27.6	0.12
6	1	2	2	4000	2	32	2	2			0	0	0	0	0			0	1	26.6	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
7	1	2	2	4000	3	11	1	4			0	0	0	0	0			0	0	26.6	0.98	0.42	0	1	0	1	0	1	0
8	1	2	2	4000	4	7	1	4			0	0	0	0	0			0	0	26.6	0.98	0.42	0	1	0	1	0	1	0
9	1	3	2	3900	1	40	1	1			3	0.3	2	0	360			0	1	25.9	0.98	0.42	1	1	1.38	0.99	0.41	37.9	15.4
10	1	3	2	3900	2	37	2	2			0	0	0	0	0			0	1	25.9	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
11	1	3	2	3900	3	13	1	4			0	0	0	0	0			0	0	25.9	0.98	0.42	0	1	0	1	0	1	0
12	1	3	2	3900	4	11	1	4			0	0	0	0	0			0	0	25.9	0.98	0.42	0	1	0	1	0	1	0
13	1	4	2	7000	1	43	1	1			150	180	7	150	480			1	1	46.6	0.98	0.42	1	1	1.2	0	0.41	12.1	0
14	1	4	2	7000	2	40	2	2			0	0	0	0	0			0	1	46.6	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
15	1	4	2	7000	3	14	1	4			0	0	0	0	0			0	0	46.6	0.98	0.42	0	1	0	1	0	1	0
16	1	4	2	7000	4	10	2	4			0	0	0	0	0			0	0	46.6	0.98	0.42	0	1	0	1	0	1	0
17	1	4	2	7000	5	8	1	4			0	0	0	0	0			0	0	46.6	0.98	0.42	0	1	0	1	0	1	0
18	1	4	2	7000	6	6	2	4			0	0	0	0	0			0	0	46.6	0.98	0.42	0	1	0	1	0	1	0
19	1	5	3	4000	1	64	1	1			0.5	15	0,2	0	80			0	1	26.6	0.98	0.42	1	1	1.37	0.61	0.41	35.2	8.78
20	1	5	3	4000	2	55	2	2			0	0	0	0	0			0	1	26.6	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
21	1	5	3	4000	3	15	1	3			0	0	0	0	0			0	0	26.6	0.98	0.42	0	1	0	1	0	1	0
22	1	6	2	4000	1	47	1	1			0	0	0	0	0			0	1	26.6	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
23	1	6	2	4000	2	40	2	2			0	0	0	0	0			0	1	26.6	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
24	1	6	2	4000	3	10	1	4			0	0	0	0	0			0	0	26.6	0.98	0.42	0	1	0	1	0	1	0
25	1	7	2	4300	1	35	1	1			0	0	0	0	0.1			0	1	28.6	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
26	1	7	2	4300	2	32	2	2			0	0	0	0	0			0	1	28.6	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
27	1	7	2	4300	3	12	2	4			0	0	0	0	0			0	0	28.6	0.98	0.42	0	1	0	1	0	1	0
28	1	7	2	4300	4	11	2	4			0	0	0	0	0			0	0	28.6	0.98	0.42	0	1	0	1	0	1	0
29	1	7	2	4300	5	10	2	4			0	0	0	0	0			0	0	28.6	0.98	0.42	0	1	0	1	0	1	0
30	1	8	4	3500	1	45	1	1			1	30	0	0	480			0	1	23.3	0.98	0.42	1	1	1.36	0.37	0.41	32.5	4.92
31	1	8	4	3500	2	43	2	2			0	0	0	0	0			0	1	23.3	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
32	1	8	4	3500	3	16	1	3			0	0	0	0	0			0	0	23.3	0.98	0.42	0	1	0	1	0	1	0
33	1	8	4	3500	4	14	1	4			0	0	0	0	0			0	0	23.3	0.98	0.42	0	1	0	1	0	1	0
34	1	8	4	3500	5	12	1	4			0	0	0	0	0			0	0	23.3	0.98	0.42	0	1	0	1	0	1	0
35	1	9	4	3500	1	38	1	1			0.5	0.15	0	0	480			0	1	23.3	0.98	0.42	1	1	1.38	1	0.41	37.9	15.5
36	1	9	4	3500	2	35	2	2			0	0	0	0	0			0	1	23.3	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
37	1	9	4	3500	3	15	1	3			0	0	0	0	0			0	0	23.3	0.98	0.42	0	1	0	1	0	1	0
38	1	9	4	3500	4	13	1	4			0	0	0	0	0			0	0	23.3	0.98	0.42	0	1	0	1	0	1	0
39	1	9	4	3500	5	7	2	4			0	0	0	0	0			0	0	23.3	0.98	0.42	0	1	0	1	0	1	0
40	1	10	2	5100	1	34	1	1			0.5	15	0	0	480			0	1	33.9	0.98	0.42	1	1	1.37	0.61	0.41	35.2	8.78
41	1	10	2	5100	2	32	2	2			0	0	0	0	0			0	1	33.9	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
42	1	10	2	5100	3	10	2	4			0	0	0	0	0			0	0	33.9	0.98	0.42	0	1	0	1	0	1	0
43	1	10	2	5100	4	6	1	4			0	0	0	0	0			0	0	33.9	0.98	0.42	0	1	0	1	0	1	0
44	1	11	2	6000	1	42	1	1			5	15	4	15	330			3	1	39.9	0.98	0.42	1	1	1.37	0.29	0.41	35.2	4.14
45	1	11	2	6000	2	40	2	2			0	0	0	0	0			0	1	39.9	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
46	1	11	2	6000	3	12	2	4			0	0	0	0	0			0	0	39.9	0.98	0.42	0	1	0	1	0	1	0
47	1	11	2	6000	4	9	1	4			0	0	0	0	0			0	0	39.9	0.98	0.42	0	1	0	1	0	1	0
48	1	12	2	3600	1	30	1	1			1	30	0	0	480			0	1	23.9	0.98	0.42	1	1	1.36	0.37	0.41	32.5	4.92
49	1	12	2	3600	2	29	1	2			0	0	0	0	0			0	1	23.9	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
50	1	12	2	3600	3	14	2	4			0	0	0	0	0			0	0	23.9	0.98	0.42	0	1	0	1	0	1	0
51	1	12	2	3600	4	11	2	4			0	0	0	0	0			0	0	23.9	0.98	0.42	0	1	0	1	0	1	0
52	1	12	2	3600	5	10	1	4			0	0	0	0	0			0	0	23.9	0.98	0.42	0	1	0	1	0	1	0
53	1	12	2	3600	6	9	1	4			0	0	0	0	0			0	0	23.9	0.98	0.42	0	1	0	1	0	1	0
54	1	13	2	3600	1	45	1	1			1	30	0	0	480			0	1	23.9	0.98	0.42	1	1	1.36	0.37	0.41	32.5	4.92
55	1	13	2	3600	2	40	2	2			0	0	0	0	0			0	1	23.9	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
56	1	13	2	3600	3	13	1	4			0	0	0	0	0			0	0	23.9	0.98	0.42	0	1	0	1	0	1	0
57	1	13	2	3600	4	9	2	4			0	0	0	0	0			0	0	23.9	0.98	0.42	0	1	0	1	0	1	0
58	1	13	2	3600	5	7	2	4			0	0	0	0	0			0	0	23.9	0.98	0.42	0	1	0	1	0	1	0
59	1	14	2	3000	1	32	1	1			0.5	15	0	0	330			0	1	20	0.98	0.42	1	1	1.37	0.61	0.41	35.2	8.78
60	1	14	2	3000	2	30	2	2			0	0	0	0	0			0	1	20	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
61	1	14	2	3000	3	11	1	4			0	0	0	0	0			0	0	20	0.98	0.42	0	1	0	1	0	1	0
62	1	14	2	3000	4	10	1	4			0	0	0	0	0			0	0	20	0.98	0.42	0	1	0	1	0	1	0
63	1	14	2	3000	5	9	2	4			0	0	0	0	0			0	0	20	0.98	0.42	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
64	1	15	4	6000	1	47	1	1			0	0	0	0	600			0	1	39.9	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
65	1	15	4	6000	2	45	2	2			0	0	0	0	0			0	1	39.9	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
66	1	15	4	6000	3	19	1	3			0	0	0	0	0			0	0	39.9	0.98	0.42	0	1	0	1	0	1	0
67	1	15	4	6000	4	13	1	4			0	0	0	0	0			0	0	39.9	0.98	0.42	0	1	0	1	0	1	0
68	1	15	4	6000	5	9	2	4			0	0	0	0	0			0	0	39.9	0.98	0.42	0	1	0	1	0	1	0
69	1	16	4	3700	1	38	1	1			60	60	7	35	480			0.58	1	24.6	0.98	0.42	1	1	1.33	0.01	0.41	27.6	0.09
70	1	16	4	3700	2	38	2	2			0	0	0	0	0			0	1	24.6	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
71	1	16	4	3700	3	16	1	3			0	0	0	0	0			0	0	24.6	0.98	0.42	0	1	0	1	0	1	0
72	1	16	4	3700	4	12	2	4			0	0	0	0	0			0	0	24.6	0.98	0.42	0	1	0	1	0	1	0
73	1	16	4	3700	5	10	1	4			0	0	0	0	0			0	0	24.6	0.98	0.42	0	1	0	1	0	1	0
74	1	16	4	3700	6	9	1	4			0	0	0	0	0			0	0	24.6	0.98	0.42	0	1	0	1	0	1	0
75	1	17	2	3000	1	30	1	1			0.5	15	0	0	560			0	1	20	0.98	0.42	1	1	1.37	0.61	0.41	35.2	8.78
76	1	17	2	3000	2	28	2	2			0	0	0	0	0			0	1	20	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
77	1	17	2	3000	3	13	1	4			0	0	0	0	0			0	0	20	0.98	0.42	0	1	0	1	0	1	0
78	1	17	2	3000	4	11	1	4			0	0	0	0	0			0	0	20	0.98	0.42	0	1	0	1	0	1	0
79	1	18	4	9500	1	58	1	1			15	30	7	15	330			1	1	63.2	0.98	0.42	1	1	1.36	0.23	0.41	32.5	3.06
80	1	18	4	9500	2	45	2	2			0	0	0	0	0			0	1	63.2	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
81	1	18	4	9500	3	20	1	3			0	0	0	0	0			0	0	63.2	0.98	0.42	0	1	0	1	0	1	0
82	1	18	4	9500	4	19	1	3			0	0	0	0	0			0	0	63.2	0.98	0.42	0	1	0	1	0	1	0
83	1	18	4	9500	5	14	2	4			0	0	0	0	0			0	0	63.2	0.98	0.42	0	1	0	1	0	1	0
84	1	19	2	3000	1	35	1	1			0	0	0	0	480			0	1	20	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
85	1	19	2	3000	2	34	2	2			0	0	0	0	0			0	1	20	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
86	1	19	2	3000	3	14	2	4			0	0	0	0	0			0	0	20	0.98	0.42	0	1	0	1	0	1	0
87	1	19	2	3000	4	13	2	4			0	0	0	0	0			0	0	20	0.98	0.42	0	1	0	1	0	1	0
88	1	19	2	3000	5	12	1	4			0	0	0	0	0			0	0	20	0.98	0.42	0	1	0	1	0	1	0
89	1	19	2	3000	6	11	1	4			0	0	0	0	0			0	0	20	0.98	0.42	0	1	0	1	0	1	0
90	1	20	2	3300	1	36	1	1			3	30	5	10	330			3.33	1	21.9	0.98	0.42	1	1	1.36	0.15	0.41	32.5	1.98
91	1	20	2	3300	2	35	2	2			0	0	0	0	0			0	1	21.9	0.98	0.42	1	1	1.38	1	0.41	37.9	15.6
92	1	20	2	3300	3	6	2	4			0	0	0	0	0			0	0	21.9	0.98	0.42	0	1	0	1	0	1	0
93	1	20	2	3300	4	5	2	4			0	0	0	0	0			0	0	21.9	0.98	0.42	0	1	0	1	0	1	0
94	2	21	2	12000	1	45	1	1			8	60	6	100	600			12.5	1	79.8	0.63	0.13	1	1	1.33	0.01	0.08	27.6	0.02
95	2	21	2	12000	2	27	2	2			0	10	0	0	300			0	1	79.8	0.63	0.13	1	1	1.37	1	0.08	36.1	2.85
96	2	21	2	12000	3	8	1	4			0	0	0	0	0			0	0	79.8	0.63	0.13	0	1	0	1	0	1	0
97	2	21	2	12000	4	6	1	4			0	0	0	0	0			0	0	79.8	0.63	0.13	0	1	0	1	0	1	0
98	2	21	2	12000	5	4	1	4			0	0	0	0	0			0	0	79.8	0.63	0.13	0	1	0	1	0	1	0
99	2	22	2	2000	1	32	1	1			0	10	0	0	480			0	1	13.3	0.63	0.13	1	1	1.37	1	0.08	36.1	2.85
100	2	22	2	2000	2	28	2	2			0	0	0	0	0			0	1	13.3	0.63	0.13	1	1	1.38	1	0.08	37.9	3
101	2	22	2	2000	3	6	1	4			0	0	0	0	0			0	0	13.3	0.63	0.13	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
102	2	23	2	7000	1	35	1	1			250	240	5	300	600			1.2	1	46.6	0.63	0.13	1	1	1.09	0	0.08	7.09	0
103	2	23	2	7000	2	30	2	2			0	0	0	0	0			0	1	46.6	0.63	0.13	1	1	1.38	1	0.08	37.9	3
104	2	23	2	7000	3	6	2	4			0	0	0	0	0			0	0	46.6	0.63	0.13	0	1	0	1	0	1	0
105	2	23	2	7000	4	4	2	4			0	0	0	0	0			0	0	46.6	0.63	0.13	0	1	0	1	0	1	0
106	2	24	2	4500	1	34	1	1			8	30	7	25	600			3.13	1	29.9	0.63	0.13	1	1	1.36	0.07	0.08	32.5	0.18
107	2	24	2	4500	2	35	2	2			0	0	0	0	0			0	1	29.9	0.63	0.13	1	1	1.38	1	0.08	37.9	3
108	2	24	2	4500	3	4	2	4			0	0	0	0	0			0	0	29.9	0.63	0.13	0	1	0	1	0	1	0
109	2	24	2	4500	4	2	2	4			0	0	0	0	0			0	0	29.9	0.63	0.13	0	1	0	1	0	1	0
110	2	24	2	4500	5	1	1	4			0	0	0	0	0			0	0	29.9	0.63	0.13	0	1	0	1	0	1	0
111	2	25	2	3000	1	30	1	1			0	10	0	0	720			0	1	20	0.63	0.13	1	1	1.37	1	0.08	36.1	2.85
112	2	25	2	3000	2	23	2	2			0	0	0	0	0			0	1	20	0.63	0.13	1	1	1.38	1	0.08	37.9	3
113	2	25	2	3000	3	8	1	4			0	0	0	0	0			0	0	20	0.63	0.13	0	1	0	1	0	1	0
114	2	25	2	3000	4	6	2	4			0	0	0	0	0			0	0	20	0.63	0.13	0	1	0	1	0	1	0
115	2	26	1	4500	1	45	1	1			20	720	7	30	720			1.5	1	29.9	0.63	0.13	1	1	0	0	0.08	1	0
116	2	26	1	4500	2	30	2	2			0	0	0	0	0			0	1	29.9	0.63	0.13	1	1	1.38	1	0.08	37.9	3
117	2	27	2	2000	1	53	1	1			20	30	7	30	600			1.5	1	13.3	0.63	0.13	1	1	1.36	0	0.08	32.5	0.01
118	2	27	2	2000	2	35	2	2			0	0	0	0	0			0	1	13.3	0.63	0.13	1	1	1.38	1	0.08	37.9	3
119	2	27	2	2000	3	13	2	4			0	0	0	0	0			0	0	13.3	0.63	0.13	0	1	0	1	0	1	0
120	2	27	2	2000	4	10	1	4			0	0	0	0	0			0	0	13.3	0.63	0.13	0	1	0	1	0	1	0
121	2	28	1	2000	1	50	1	1			8	30	7	20	600			2.5	1	13.3	0.63	0.13	1	1	1.36	0.02	0.08	32.5	0.05
122	2	28	1	2000	2	35	2	2			0	0	0	0	0			0	1	13.3	0.63	0.13	1	1	1.38	1	0.08	37.9	3
123	2	29	2	5000	1	36	1	1			8	20	7	20	300			2.5	1	33.3	0.63	0.13	1	1	1.36	0.15	0.08	34.3	0.42
124	2	29	2	5000	2	25	2	2			0	0	0	0	0			0	1	33.3	0.63	0.13	1	1	1.38	1	0.08	37.9	3
125	2	29	2	5000	3	13	2	4			0	0	0	0	0			0	0	33.3	0.63	0.13	0	1	0	1	0	1	0
126	2	29	2	5000	4	5	2	4			0	0	0	0	0			0	0	33.3	0.63	0.13	0	1	0	1	0	1	0
127	2	29	2	5000	5	3	1	4			0	0	0	0	0			0	0	33.3	0.63	0.13	0	1	0	1	0	1	0
128	2	30	1	3000	1	39	1	1			8	30	7	20	600			2.5	1	20	0.63	0.13	1	1	1.36	0.05	0.08	32.5	0.13
129	2	30	1	3000	2	30	2	2			0	0	0	0	0			0	1	20	0.63	0.13	1	1	1.38	1	0.08	37.9	3
130	2	31	2	3000	1	38	1	1			8	30	7	20	600			2.5	1	20	0.63	0.13	1	1	1.36	0.05	0.08	32.5	0.13
131	2	31	2	3000	2	36	2	2			0	0	0	0	0			0	1	20	0.63	0.13	1	1	1.38	1	0.08	37.9	3
132	2	31	2	3000	3	5	1	4			0	0	0	0	0			0	0	20	0.63	0.13	0	1	0	1	0	1	0
133	2	31	2	3000	4	3	1	4			0	0	0	0	0			0	0	20	0.63	0.13	0	1	0	1	0	1	0
134	2	32	2	5000	1	34	1	1			0	5	0	0	330			0	1	33.3	0.63	0.13	1	1	1.37	1	0.08	37	2.92
135	2	32	2	5000	2	25	2	2			0	0	0	0	0			0	1	33.3	0.63	0.13	1	1	1.38	1	0.08	37.9	3
136	2	32	2	5000	3	5	2	4			0	0	0	0	0			0	0	33.3	0.63	0.13	0	1	0	1	0	1	0
137	2	32	2	5000	4	3	1	4			0	0	0	0	0			0	0	33.3	0.63	0.13	0	1	0	1	0	1	0
138	2	33	2	6000	1	39	1	1			8	30	7	20	600			2.5	1	39.9	0.63	0.13	1	1	1.36	0.13	0.08	32.5	0.35
139	2	33	2	6000	2	30	2	2			0	0	0	0	0			0	1	39.9	0.63	0.13	1	1	1.38	1	0.08	37.9	3

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
140	2	33	2	6000	3	2	2	4			0	0	0	0	0			0	0	39.9	0.63	0.13	0	1	0	1	0	1	0
141	2	33	2	6000	4	1	1	4			0	0	0	0	0			0	0	39.9	0.63	0.13	0	1	0	1	0	1	0
142	2	34	1	10000	1	34	1	1			2	30	0	0	600			0	1	66.5	0.63	0.13	1	1	1.36	0.37	0.08	32.5	0.95
143	2	34	1	10000	2	25	2	2			0	0	0	0	0			0	1	66.5	0.63	0.13	1	1	1.38	1	0.08	37.9	3
144	2	35	2	3500	1	32	1	1			12	30	7	10	600			0.83	1	23.3	0.63	0.13	1	1	1.36	0.16	0.08	32.5	0.4
145	2	35	2	3500	2	25	2	2			0	0	0	0	0			0	1	23.3	0.63	0.13	1	1	1.38	1	0.08	37.9	3
146	2	35	2	3500	3	7	2	4			0	0	0	0	0			0	0	23.3	0.63	0.13	0	1	0	1	0	1	0
147	2	36	2	10000	1	38	1	1			3	15	4	30	720			10	1	66.5	0.63	0.13	1	1	1.37	0.25	0.08	35.2	0.68
148	2	36	2	10000	2	28	2	2			0	0	0	0	0			0	1	66.5	0.63	0.13	1	1	1.38	1	0.08	37.9	3
149	2	36	2	10000	3	1	1	4			0	0	0	0	0			0	0	66.5	0.63	0.13	0	1	0	1	0	1	0
150	2	37	2	4500	1	35	1	1			0.5	15	0	0	720			0	1	29.9	0.63	0.13	1	1	1.37	0.61	0.08	35.2	1.69
151	2	37	2	4500	2	21	2	2			0	0	0	0	0			0	1	29.9	0.63	0.13	1	1	1.38	1	0.08	37.9	3
152	2	37	2	4500	3	1	2	4			0	0	0	0	0			0	0	29.9	0.63	0.13	0	1	0	1	0	1	0
153	2	38	2	4500	1	36	1	1			8	20	7	20	660			2.5	1	29.9	0.63	0.13	1	1	1.36	0.13	0.08	34.3	0.37
154	2	38	2	4500	2	27	2	2			0	0	0	0	0			0	1	29.9	0.63	0.13	1	1	1.38	1	0.08	37.9	3
155	2	38	2	4500	3	8	2	4			0	0	0	0	0			0	0	29.9	0.63	0.13	0	1	0	1	0	1	0
156	2	39	2	10000	1	38	1	1			55	90	7	35	720			0.64	1	66.5	0.63	0.13	1	1	1.31	0.02	0.08	23	0.03
157	2	39	2	10000	2	32	2	2			0	0	0	0	0			0	1	66.5	0.63	0.13	1	1	1.38	1	0.08	37.9	3
158	2	39	2	10000	3	9	2	4			0	0	0	0	0			0	0	66.5	0.63	0.13	0	1	0	1	0	1	0
159	2	39	2	10000	4	7	1	4			0	0	0	0	0			0	0	66.5	0.63	0.13	0	1	0	1	0	1	0
160	2	40	2	4500	1	36	1	1			8	20	7	20	660			2.5	1	29.9	0.63	0.13	1	1	1.36	0.13	0.08	34.3	0.37
161	2	40	2	4500	2	26	2	2			0	0	0	0	0			0	1	29.9	0.63	0.13	1	1	1.38	1	0.08	37.9	3
162	2	40	2	4500	3	4	2	4			0	0	0	0	0			0	0	29.9	0.63	0.13	0	1	0	1	0	1	0
163	3	41	2	3500	1	50	1	1			10	30	7	10	600			1	1	23.3	0.88	0.37	1	1	1.36	0.16	0.33	32.5	1.66
164	3	41	2	3500	2	47	2	2			0	0	0	0	0			0	1	23.3	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
165	3	41	2	3500	3	14	1	4			0	0	0	0	0			0	0	23.3	0.88	0.37	0	1	0	1	0	1	0
166	3	41	2	3500	4	10	1	4			0	0	0	0	0			0	0	23.3	0.88	0.37	0	1	0	1	0	1	0
167	3	42	4	4000	1	44	1	1			10	30	7	20	480			2	1	26.6	0.88	0.37	1	1	1.36	0.08	0.33	32.5	0.87
168	3	42	4	4000	2	43	2	2			0	0	0	0	0			0	1	26.6	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
169	3	42	4	4000	3	19	1	3			0	0	0	0	0			0	0	26.6	0.88	0.37	0	1	0	1	0	1	0
170	3	42	4	4000	4	16	1	3			0	0	0	0	0			0	0	26.6	0.88	0.37	0	1	0	1	0	1	0
171	3	42	4	4000	5	8	1	4			0	0	0	0	0			0	0	26.6	0.88	0.37	0	1	0	1	0	1	0
172	3	43	2	4500	1	37	1	1			10	40	7	10	600			1	1	29.9	0.88	0.37	1	1	1.35	0.14	0.33	30.8	1.37
173	3	43	2	4500	2	36	2	2			0	0	0	0	0			0	1	29.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
174	3	43	2	4500	3	11	1	4			0	0	0	0	0			0	0	29.9	0.88	0.37	0	1	0	1	0	1	0
175	3	43	2	4500	4	8	1	4			0	0	0	0	0			0	0	29.9	0.88	0.37	0	1	0	1	0	1	0
176	3	44	4	1500	1	47	1	1			2	10	4	29.5	600			14.8	1	9.98	0.88	0.37	1	1	1.37	0	0.33	36.1	0.02
177	3	44	4	1500	2	45	2	2			0	0	0	0	0			0	1	9.98	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
178	3	44	4	1500	3	21	1	3			0	0	0	0	0			0	0	9.98	0.88	0.37	0	1	0	1	0	1	0
179	3	44	4	1500	4	19	1	3			0	0	0	0	0			0	0	9.98	0.88	0.37	0	1	0	1	0	1	0
180	3	44	4	1500	5	12	1	4			0	0	0	0	0			0	0	9.98	0.88	0.37	0	1	0	1	0	1	0
181	3	45	2	4000	1	28	1	1			0	0	0	0	330			0	1	26.6	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
182	3	45	2	4000	2	25	2	2			0	0	0	0	0			0	1	26.6	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
183	3	45	2	4000	3	5	2	4			0	0	0	0	0			0	0	26.6	0.88	0.37	0	1	0	1	0	1	0
184	3	46	2	3500	1	40	1	1			0	0	0	0	330			0	1	23.3	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
185	3	46	2	3500	2	40	2	2			0	0	0	0	0			0	1	23.3	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
186	3	46	2	3500	3	12	1	4			0	0	0	0	0			0	0	23.3	0.88	0.37	0	1	0	1	0	1	0
187	3	46	2	3500	4	11	1	4			0	0	0	0	0			0	0	23.3	0.88	0.37	0	1	0	1	0	1	0
188	3	46	2	3500	5	10	2	4			0	0	0	0	0			0	0	23.3	0.88	0.37	0	1	0	1	0	1	0
189	3	46	2	3500	6	8	2	4			0	0	0	0	0			0	0	23.3	0.88	0.37	0	1	0	1	0	1	0
190	3	47	2	6000	1	38	1	1			25	45	7	30	720			1.2	1	39.9	0.88	0.37	1	1	1.35	0.05	0.33	30	0.49
191	3	47	2	6000	2	35	2	2			0	0	0	0	0			0	1	39.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
192	3	47	2	6000	3	14	1	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
193	3	47	2	6000	4	8	2	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
194	3	48	4	5000	1	35	1	1			130	180	7	125	600			0.96	1	33.3	0.88	0.37	1	1	1.2	0	0.33	12.1	0
195	3	48	4	5000	2	33	2	2			0	0	0	0	0			0	1	33.3	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
196	3	48	4	5000	3	17	1	3			0	0	0	0	0			0	0	33.3	0.88	0.37	0	1	0	1	0	1	0
197	3	48	4	5000	4	14	1	4			0	0	0	0	0			0	0	33.3	0.88	0.37	0	1	0	1	0	1	0
198	3	48	4	5000	5	9	2	4			0	0	0	0	0			0	0	33.3	0.88	0.37	0	1	0	1	0	1	0
199	3	48	4	5000	6	7	2	4			0	0	0	0	0			0	0	33.3	0.88	0.37	0	1	0	1	0	1	0
200	3	49	2	6000	1	38	1	1			0	0	0	0	720			0	1	39.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
201	3	49	2	6000	2	35	2	2			0	0	0	0	0			0	1	39.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
202	3	49	2	6000	3	12	1	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
203	3	50	2	7000	1	29	1	1			10	20	4	30	480			3	1	46.6	0.88	0.37	1	1	1.36	0.14	0.33	34.3	1.59
204	3	50	2	7000	2	25	2	2			0	0	0	0	0			0	1	46.6	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
205	3	50	2	7000	3	9	2	4			0	0	0	0	0			0	0	46.6	0.88	0.37	0	1	0	1	0	1	0
206	3	50	2	7000	4	7	1	4			0	0	0	0	0			0	0	46.6	0.88	0.37	0	1	0	1	0	1	0
207	3	51	2	15000	1	45	1	1			2	5	4	30	720			15	1	99.8	0.88	0.37	1	1	1.37	0.46	0.33	37	5.63
208	3	51	2	15000	2	45	2	2			0	0	0	0	0			0	1	99.8	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
209	3	51	2	15000	3	8	1	4			0	0	0	0	0			0	0	99.8	0.88	0.37	0	1	0	1	0	1	0
210	3	51	2	15000	4	5	1	4			0	0	0	0	0			0	0	99.8	0.88	0.37	0	1	0	1	0	1	0
211	3	52	2	3000	1	36	1	1			0	0	0	0	600			0	1	20	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
212	3	52	2	3000	2	35	2	2			0	0	0	0	0			0	1	20	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
213	3	52	2	3000	3	13	1	4			0	0	0	0	0			0	0	20	0.88	0.37	0	1	0	1	0	1	0
214	3	53	4	6000	1	45	1	1			0	0	0	0	780			0	1	39.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
215	3	53	4	6000	2	43	2	2			0	0	0	0	0			0	1	39.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
216	3	53	4	6000	3	22	1	3			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
217	3	53	4	6000	4	20	2	3			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
218	3	53	4	6000	5	18	1	3			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
219	3	53	4	6000	6	14	1	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
220	3	53	4	6000	7	13	2	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
221	3	53	4	6000	8	12	2	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
222	3	53	4	6000	9	11	2	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
223	3	53	4	6000	10	10	1	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
224	3	54	4	6000	1	55	1	1			0	0	0	0	720			0	1	39.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
225	3	54	4	6000	2	51	2	2			0	0	0	0	0			0	1	39.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
226	3	54	4	6000	3	17	2	3			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
227	3	54	4	6000	4	15	1	3			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
228	3	54	4	6000	5	14	1	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
229	3	54	4	6000	6	10	2	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
230	3	55	2	4500	1	37	1	1			0	0	0	0	480			0	1	29.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
231	3	55	2	4500	2	36	2	2			0	0	0	0	0			0	1	29.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
232	3	55	2	4500	3	7	1	4			0	0	0	0	0			0	0	29.9	0.88	0.37	0	1	0	1	0	1	0
233	3	56	2	4000	1	40	1	1			0	0	0	0	480			0	1	26.6	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
234	3	56	2	4000	2	40	2	2			0	0	0	0	0			0	1	26.6	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
235	3	56	2	4000	3	13	2	4			0	0	0	0	0			0	0	26.6	0.88	0.37	0	1	0	1	0	1	0
236	3	56	2	4000	4	12	1	4			0	0	0	0	0			0	0	26.6	0.88	0.37	0	1	0	1	0	1	0
237	3	56	2	4000	5	8	1	4			0	0	0	0	0			0	0	26.6	0.88	0.37	0	1	0	1	0	1	0
238	3	56	2	4000	6	6	2	4			0	0	0	0	0			0	0	26.6	0.88	0.37	0	1	0	1	0	1	0
239	3	57	2	4500	1	40	1	1			0	0	0	0	330			0	1	29.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
240	3	57	2	4500	2	38	2	2			0	0	0	0	0			0	1	29.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
241	3	57	2	4500	3	13	2	4			0	0	0	0	0			0	0	29.9	0.88	0.37	0	1	0	1	0	1	0
242	3	57	2	4500	4	9	1	4			0	0	0	0	0			0	0	29.9	0.88	0.37	0	1	0	1	0	1	0
243	3	58	2	450	1	50	1	1			0	0	0	0	540			0	1	2.99	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
244	3	58	2	450	2	48	2	2			0	0	0	0	0			0	1	2.99	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
245	3	58	2	450	3	14	1	4			0	0	0	0	0			0	0	2.99	0.88	0.37	0	1	0	1	0	1	0
246	3	58	2	450	4	10	2	4			0	0	0	0	0			0	0	2.99	0.88	0.37	0	1	0	1	0	1	0
247	3	59	2	6000	1	43	1	1			0	0	0	0	480			0	1	39.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
248	3	59	2	6000	2	40	2	2			0	0	0	0	0			0	1	39.9	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
249	3	59	2	6000	3	13	1	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
250	3	59	2	6000	4	10	2	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
251	3	59	2	6000	5	9	1	4			0	0	0	0	0			0	0	39.9	0.88	0.37	0	1	0	1	0	1	0
252	3	60	2	4000	1	36	1	1			0	0	0	0	600			0	1	26.6	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4
253	3	60	2	4000	2	33	2	2			0	0	0	0	0			0	1	26.6	0.88	0.37	1	1	1.38	1	0.33	37.9	12.4

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
254	3	60	2	4000	3	13	2	4			0	0	0	0	0			0	0	26.6	0.88	0.37	0	1	0	1	0	1	0
255	3	60	2	4000	4	12	2	4			0	0	0	0	0			0	0	26.6	0.88	0.37	0	1	0	1	0	1	0
256	3	60	2	4000	5	11	1	4			0	0	0	0	0			0	0	26.6	0.88	0.37	0	1	0	1	0	1	0
257	4	61	2	3655	1	38	1	1			0.5	10	0	0	300			0	1	24.3	0.99	0.97	1	1	1.37	0.72	0.96	36.1	24.9
258	4	61	2	3655	2	30	2	2			0	0	0	0	0			0	1	24.3	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
259	4	61	2	3655	3	6	1	4			0	0	0	0	0			0	0	24.3	0.99	0.97	0	1	0	1	0	1	0
260	4	61	2	3655	4	4	1	4			0	0	0	0	0			0	0	24.3	0.99	0.97	0	1	0	1	0	1	0
261	4	61	2	3655	5	3	2	4			0	0	0	0	0			0	0	24.3	0.99	0.97	0	1	0	1	0	1	0
262	4	62	2	3300	1	25	1	1			0.03	10	0	0	780			0	1	21.9	0.99	0.97	1	1	1.37	0.72	0.96	36.1	24.9
263	4	62	2	3300	2	22	2	2			0	0	0	0	0			0	1	21.9	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
264	4	62	2	3300	3	3	2	4			0	0	0	0	0			0	0	21.9	0.99	0.97	0	1	0	1	0	1	0
265	4	63	2	3000	1	32	1	1			4	10	7	4	720			1	1	20	0.99	0.97	1	1	1.37	0.48	0.96	36.1	16.6
266	4	63	2	3000	2	27	2	2			0	0	0	0	0			0	1	20	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
267	4	63	2	3000	3	4	1	4			0	0	0	0	0			0	0	20	0.99	0.97	0	1	0	1	0	1	0
268	4	64	4	3000	1	60	1	1			0	0	0	0	90			0	1	20	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
269	4	64	4	3000	2	40	2	2			0	0	0	0	0			0	1	20	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
270	4	64	4	3000	3	18	1	3			0	0	0	0	0			0	0	20	0.99	0.97	0	1	0	1	0	1	0
271	4	64	4	3000	4	15	1	3			0	0	0	0	0			0	0	20	0.99	0.97	0	1	0	1	0	1	0
272	4	64	4	3000	5	6	2	4			0	0	0	0	0			0	0	20	0.99	0.97	0	1	0	1	0	1	0
273	4	64	4	3000	6	4	1	4			0	0	0	0	0			0	0	20	0.99	0.97	0	1	0	1	0	1	0
274	4	65	2	2400	1	30	1	1			0.5	5	0	0	420			0	1	16	0.99	0.97	1	1	1.37	0.85	0.96	37	30.1
275	4	65	2	2400	2	30	2	2			0	0	0	0	0			0	1	16	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
276	4	65	2	2400	3	8	1	4			0	0	0	0	0			0	0	16	0.99	0.97	0	1	0	1	0	1	0
277	4	65	2	2400	4	6	1	4			0	0	0	0	0			0	0	16	0.99	0.97	0	1	0	1	0	1	0
278	4	65	2	2400	5	3	2	4			0	0	0	0	0			0	0	16	0.99	0.97	0	1	0	1	0	1	0
279	4	66	2	1500	1	38	1	1			0.5	10	0	0	660			0	1	9.98	0.99	0.97	1	1	1.37	0.72	0.96	36.1	24.9
280	4	66	2	1500	2	30	2	2			0	0	0	0	0			0	1	9.98	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
281	4	66	2	1500	3	4	1	4			0	0	0	0	0			0	0	9.98	0.99	0.97	0	1	0	1	0	1	0
282	4	67	4	4000	1	40	1	1			0.5	10	0	0	330			0	1	26.6	0.99	0.97	1	1	1.37	0.72	0.96	36.1	24.9
283	4	67	4	4000	2	35	2	2			0	0	0	0	0			0	1	26.6	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
284	4	67	4	4000	3	16	1	3			0	0	0	0	0			0	0	26.6	0.99	0.97	0	1	0	1	0	1	0
285	4	67	4	4000	4	14	1	4			0	0	0	0	0			0	0	26.6	0.99	0.97	0	1	0	1	0	1	0
286	4	67	4	4000	5	11	2	4			0	0	0	0	0			0	0	26.6	0.99	0.97	0	1	0	1	0	1	0
287	4	67	4	4000	6	8	2	4			0	0	0	0	0			0	0	26.6	0.99	0.97	0	1	0	1	0	1	0
288	4	68	2	3600	1	30	1	1			0.5	10	0	0	360			0	1	23.9	0.99	0.97	1	1	1.37	0.72	0.96	36.1	24.9
289	4	68	2	3600	2	27	2	2			0	0	0	0	0			0	1	23.9	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
290	4	68	2	3600	3	2	1	4			0	0	0	0	0			0	0	23.9	0.99	0.97	0	1	0	1	0	1	0
291	4	68	2	3600	4	1	1	4			0	0	0	0	0			0	0	23.9	0.99	0.97	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
292	4	69	2	4000	1	25	1	1			30	50	5	650	600			21.7	1	26.6	0.99	0.97	1	1	1.34	0	0.96	29.2	0
293	4	69	2	4000	2	23	2	2			0	0	0	0	0			0	1	26.6	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
294	4	69	2	4000	3	3	2	4			0	0	0	0	0			0	0	26.6	0.99	0.97	0	1	0	1	0	1	0
295	4	70	2	3750	1	22	1	1			0.5	10	0	0	540			0	1	24.9	0.99	0.97	1	1	1.37	0.72	0.96	36.1	24.9
296	4	70	2	3750	2	19	2	2			0	0	0	0	0			0	1	24.9	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
297	4	70	2	3750	3	5	1	4			0	0	0	0	0			0	0	24.9	0.99	0.97	0	1	0	1	0	1	0
298	4	70	2	3750	4	2	1	4			0	0	0	0	0			0	0	24.9	0.99	0.97	0	1	0	1	0	1	0
299	4	71	2	3858	1	32	1	1			3	15	7	3	330			1	1	25.7	0.99	0.97	1	1	1.37	0.48	0.96	35.2	16.2
300	4	71	2	3858	2	30	2	2			0	0	0	0	0			0	1	25.7	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
301	4	71	2	3858	3	4	2	4			0	0	0	0	0			0	0	25.7	0.99	0.97	0	1	0	1	0	1	0
302	4	72	1	2500	1	25	1	1			0.5	10	0	0	540			0	1	16.6	0.99	0.97	1	1	1.37	0.72	0.96	36.1	24.9
303	4	72	1	2500	2	22	2	2			0	0	0	0	0			0	1	16.6	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
304	4	73	2	3000	1	25	1	1			0.5	10	0	0	600			0	1	20	0.99	0.97	1	1	1.37	0.72	0.96	36.1	24.9
305	4	73	2	3000	2	23	2	2			0	0	0	0	0			0	1	20	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
306	4	73	2	3000	3	3	1	4			0	0	0	0	0			0	0	20	0.99	0.97	0	1	0	1	0	1	0
307	4	74	2	3500	1	23	1	1			0	0	0	0	480			0	1	23.3	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
308	4	74	2	3500	2	22	2	2			0	0	0	0	0			0	1	23.3	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
309	4	74	2	3500	3	6	1	4			0	0	0	0	0			0	0	23.3	0.99	0.97	0	1	0	1	0	1	0
310	4	75	1	3000	1	26	1	1			0.5	5	0	0	480			0	1	20	0.99	0.97	1	1	1.37	0.85	0.96	37	30.1
311	4	75	1	3000	2	22	2	2			0	0	0	0	0			0	1	20	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
312	4	76	2	3000	1	25	1	1			12	40	7	20	600			1.67	1	20	0.99	0.97	1	1	1.35	0.04	0.96	30.8	1.05
313	4	76	2	3000	2	20	2	2			0	0	0	0	0			0	1	20	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
314	4	76	2	3000	3	2	2	4			0	0	0	0	0			0	0	20	0.99	0.97	0	1	0	1	0	1	0
315	4	77	2	4500	1	28	1	1			2	30	0	0	600			0	1	29.9	0.99	0.97	1	1	1.36	0.37	0.96	32.5	11.5
316	4	77	2	4500	2	25	2	2			0	0	0	0	0			0	1	29.9	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
317	4	77	2	4500	3	5	2	4			0	0	0	0	0			0	0	29.9	0.99	0.97	0	1	0	1	0	1	0
318	4	77	2	4500	4	2	1	4			0	0	0	0	0			0	0	29.9	0.99	0.97	0	1	0	1	0	1	0
319	4	78	2	3600	1	27	1	1			0.5	5	0	0	360			0	1	23.9	0.99	0.97	1	1	1.37	0.85	0.96	37	30.1
320	4	78	2	3600	2	25	2	2			0	0	0	0	0			0	1	23.9	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
321	4	78	2	3600	3	7	1	4			0	0	0	0	0			0	0	23.9	0.99	0.97	0	1	0	1	0	1	0
322	4	79	2	6000	1	23	1	1			2	5	4	33	600			16.5	1	39.9	0.99	0.97	1	1	1.37	0.16	0.96	37	5.76
323	4	79	2	6000	2	20	2	2			0	0	0	0	0			0	1	39.9	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
324	4	79	2	6000	3	3	1	4			0	0	0	0	0			0	0	39.9	0.99	0.97	0	1	0	1	0	1	0
325	4	80	1	9000	1	40	1	1			0.5	5	0	0	720			0	1	59.9	0.99	0.97	1	1	1.37	0.85	0.96	37	30.1
326	4	80	1	9000	2	35	2	2			0	0	0	0	0			0	1	59.9	0.99	0.97	1	1	1.38	1	0.96	37.9	36.4
327	5	81	2	10000	1	32	1	1			0	0	0	0	300			0	1	66.5	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
328	5	81	2	10000	2	27	2	2			0	0	0	0	0			0	1	66.5	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
329	5	81	2	10000	3	11	1	4			0	0	0	0	0			0	0	66.5	0.92	0.42	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
330	5	81	2	10000	4	7	2	4			0	0	0	0	0			0	0	66.5	0.92	0.42	0	1	0	1	0	1	0
331	5	81	2	10000	5	2	2	4			0	0	0	0	0			0	0	66.5	0.92	0.42	0	1	0	1	0	1	0
332	5	82	1	5000	1	30	1	1			70	90	7	50	720			0.71	1	33.3	0.92	0.42	1	1	1.31	0	0.38	23	0.02
333	5	82	1	5000	2	25	2	2			0	0	0	0	0			0	1	33.3	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
334	5	83	2	8000	1	50	1	1			1	10	3	100	720			100	1	53.2	0.92	0.42	1	1	1.37	0.02	0.38	36.1	0.23
335	5	83	2	8000	2	43	2	2			0	0	0	0	0			0	1	53.2	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
336	5	83	2	8000	3	12	1	4			0	0	0	0	0			0	0	53.2	0.92	0.42	0	1	0	1	0	1	0
337	5	84	1	6000	1	30	1	1			0	0	0	0	600			0	1	39.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
338	5	84	1	6000	2	20	2	2			0	0	0	0	0			0	1	39.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
339	5	85	1	6000	1	30	1	1			30	7	20	0	540			0	1	39.9	0.92	0.42	1	1	1.37	0.79	0.38	36.6	11.1
340	5	85	1	6000	2	25	2	2			0	0	0	0	0			0	1	39.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
341	5	86	1	4500	1	20	1	1			0	0	0	0	300			0	1	29.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
342	5	86	1	4500	2	20	2	2			0	0	0	0	0			0	1	29.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
343	5	87	1	4500	1	30	1	1			0	0	0	0	360			0	1	29.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
344	5	87	1	4500	2	20	2	2			0	0	0	0	0			0	1	29.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
345	5	88	2	11000	1	50	1	1			0.5	10	4	30	180			60	1	73.2	0.92	0.42	1	1	1.37	0.32	0.38	36.1	4.35
346	5	88	2	11000	2	40	2	2			0	0	0	0	0			0	1	73.2	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
347	5	88	2	11000	3	10	2	4			0	0	0	0	0			0	0	73.2	0.92	0.42	0	1	0	1	0	1	0
348	5	89	1	4500	1	50	1	1			0	0	0	0	420			0	1	29.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
349	5	89	1	4500	2	35	2	2			0	0	0	0	0			0	1	29.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
350	5	90	1	4500	1	26	1	1			0	0	0	0	420			0	1	29.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
351	5	90	1	4500	2	20	2	2			0	0	0	0	0			0	1	29.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
352	5	91	1	2000	1	60	1	1			20	30	7	20	540			1	1	13.3	0.92	0.42	1	1	1.36	0.02	0.38	32.5	0.23
353	5	91	1	2000	2	40	2	2			0	0	0	0	0			0	1	13.3	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
354	5	92	1	3000	1	21	1	1			0	0	0	0	300			0	1	20	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
355	5	92	1	3000	2	20	2	2			0	0	0	0	0			0	1	20	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
356	5	93	1	5500	1	28	1	1			0	0	0	0	360			0	1	36.6	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
357	5	93	1	5500	2	20	2	2			0	0	0	0	0			0	1	36.6	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
358	5	94	1	3000	1	27	1	1			0	0	0	0	360			0	1	20	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
359	5	94	1	3000	2	20	2	2			0	0	0	0	0			0	1	20	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
360	5	95	1	4500	1	26	1	1			0	0	0	0	180			0	1	29.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
361	5	95	1	4500	2	20	2	2			0	0	0	0	0			0	1	29.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
362	5	96	2	5600	1	30	1	1			0	0	0	0	300			0	1	37.2	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
363	5	96	2	5600	2	21	2	2			0	0	0	0	0			0	1	37.2	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
364	5	96	2	5600	3	4	1	4			0	0	0	0	0			0	0	37.2	0.92	0.42	0	1	0	1	0	1	0
365	5	97	1	3500	1	27	1	1			0	0	0	0	360			0	1	23.3	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
366	5	97	1	3500	2	20	2	2			0	0	0	0	0			0	1	23.3	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
367	5	98	1	4000	1	33	1	1			0	0	0	0	660			0	1	26.6	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
368	5	98	1	4000	2	20	2	2			0	0	0	0	0			0	1	26.6	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
369	5	99	1	4500	1	30	1	1			0	0	0	0	660			0	1	29.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
370	5	99	1	4500	2	22	2	2			0	0	0	0	0			0	1	29.9	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
371	5	100	2	4000	1	28	1	1			0	0	0	0	660			0	1	26.6	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
372	5	100	2	4000	2	26	2	2			0	0	0	0	0			0	1	26.6	0.92	0.42	1	1	1.38	1	0.38	37.9	14.5
373	5	100	2	4000	3	5	2	4			0	0	0	0	0			0	0	26.6	0.92	0.42	0	1	0	1	0	1	0
											ACTIVITY=			SCHOOL			2	<<CODE											
1	1	1	3	4000	1	65	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
2	1	1	3	4000	2	55	2	2			0	0	0	0	480			0	0	0	1	0	0	1	0	1	0	1	0
3	1	1	3	4000	3	25	2	3			0	0	0	0	0			0	1	6.6	1	0	1	1	1.38	1	0	37.9	0
4	1	1	3	4000	4	20	2	3			0	0	0	0	480			0	1	6.6	1	0	1	1	1.38	1	0	37.9	0
5	1	2	2	4000	1	35	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
6	1	2	2	4000	2	32	2	2			0	0	0	0	480			0	0	0	1	0	0	1	0	1	0	1	0
7	1	2	2	4000	3	11	1	4			0.5	10	0	0	350			0	1	6.6	1	0.38	1	1	1.37	0.72	0.38	36.1	9.75
8	1	2	2	4000	4	7	1	4			0	0	0	0	0			0	1	6.6	1	0.38	1	1	1.38	1	0.38	37.9	14.3
9	1	3	2	3900	1	40	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
10	1	3	2	3900	2	37	2	2			0	0	0	0	480			0	0	0	1	0	0	1	0	1	0	1	0
11	1	3	2	3900	3	13	1	4			0	0	0	0	2			0	1	6.44	1	0.38	1	1	1.38	1	0.38	37.9	14.3
12	1	3	2	3900	4	11	1	4			0	0	0	0	2			0	1	6.44	1	0.38	1	1	1.38	1	0.38	37.9	14.3
13	1	4	2	7000	1	43	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
14	1	4	2	7000	2	40	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
15	1	4	2	7000	3	14	1	4			0	0	0	0	10			0	1	11.6	1	0.38	1	1	1.38	1	0.38	37.9	14.3
16	1	4	2	7000	4	10	2	4			0	0	0	0	400			0	1	11.6	1	0.38	1	1	1.38	1	0.38	37.9	14.3
17	1	4	2	7000	5	8	1	4			0	0	0	0	430			0	1	11.6	1	0.38	1	1	1.38	1	0.38	37.9	14.3
18	1	4	2	7000	6	6	2	4			0	0	0	0	0			0	1	11.6	1	0.38	1	1	1.38	1	0.38	37.9	14.3
19	1	5	3	4000	1	64	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
20	1	5	3	4000	2	55	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
21	1	5	3	4000	3	15	1	3			0.5	15	0	0	480			0	1	26.6	1	1	1	1	1.37	0.61	1	35.2	21.3
22	1	6	2	4000	1	47	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
23	1	6	2	4000	2	40	2	2			0	0	0	0	480			0	0	0	1	0	0	1	0	1	0	1	0
24	1	6	2	4000	3	10	1	4			0	0	0	0	430			0	1	6.6	1	0.38	1	1	1.38	1	0.38	37.9	14.3
25	1	7	2	4300	1	35	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
26	1	7	2	4300	2	32	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
27	1	7	2	4300	3	12	2	4			0	0	0	0	0			0	1	7.1	1	0.38	1	1	1.38	1	0.38	37.9	14.3
28	1	7	2	4300	4	11	2	4			0	0	0	0	0			0	1	7.1	1	0.38	1	1	1.38	1	0.38	37.9	14.3
29	1	7	2	4300	5	10	2	4			0	0	0	0	450			0	1	7.1	1	0.38	1	1	1.38	1	0.38	37.9	14.3
30	1	8	4	3500	1	45	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
31	1	8	4	3500	2	43	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
32	1	8	4	3500	3	16	1	3			0.5	15	0	0	330			0	1	23.3	1	1	1	1	1.37	0.61	1	35.2	21.3
33	1	8	4	3500	4	14	1	4			0.5	0.15	0	0	330			0	1	5.78	1	0.38	1	1	1.38	1	0.38	37.9	14.2
34	1	8	4	3500	5	12	1	4			0	0	0	0	0			0	1	5.78	1	0.38	1	1	1.38	1	0.38	37.9	14.3
35	1	9	4	3500	1	38	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
36	1	9	4	3500	2	35	2	2			0	0	0	0	480			0	0	0	1	0	0	1	0	1	0	1	0
37	1	9	4	3500	3	15	1	3			0.5	15	0	0	330			0	1	23.3	1	1	1	1	1.37	0.61	1	35.2	21.3
38	1	9	4	3500	4	13	1	4			0.5	0	0	0	350			0	1	5.78	1	0.38	1	1	1.38	1	0.38	37.9	14.3
39	1	9	4	3500	5	7	2	4			0	0	0	0	0			0	1	5.78	1	0.38	1	1	1.38	1	0.38	37.9	14.3
40	1	10	2	5100	1	34	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
41	1	10	2	5100	2	32	2	2			0	0	0	0	480			0	0	0	1	0	0	1	0	1	0	1	0
42	1	10	2	5100	3	10	2	4			0	0	0	0	380			0	1	8.42	1	0.38	1	1	1.38	1	0.38	37.9	14.3
43	1	10	2	5100	4	6	1	4			0	0	0	0	0			0	1	8.42	1	0.38	1	1	1.38	1	0.38	37.9	14.3
44	1	11	2	6000	1	42	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
45	1	11	2	6000	2	40	2	2			0	0	0	0	480			0	0	0	1	0	0	1	0	1	0	1	0
46	1	11	2	6000	3	12	2	4			0.5	15	5	5	330			10	1	9.9	1	0.38	1	1	1.37	0.22	0.38	35.2	2.93
47	1	11	2	6000	4	9	1	4			0.5	15	5	5	330			10	1	9.9	1	0.38	1	1	1.37	0.22	0.38	35.2	2.93
48	1	12	2	3600	1	30	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
49	1	12	2	3600	2	29	1	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
50	1	12	2	3600	3	14	2	4			0.5	15	0	0	300			0	1	5.94	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
51	1	12	2	3600	4	11	2	4			0.5	15	0	0	330			0	1	5.94	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
52	1	12	2	3600	5	10	1	4			0.5	15	0	0	60			0	1	5.94	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
53	1	12	2	3600	6	9	1	4			0.5	15	0	0	330			0	1	5.94	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
54	1	13	2	3600	1	45	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
55	1	13	2	3600	2	40	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
56	1	13	2	3600	3	13	1	4			1	30	0	0	330			0	1	5.94	1	0.38	1	1	1.36	0.37	0.38	32.5	4.52
57	1	13	2	3600	4	9	2	4			0	0	0	0	330			0	1	5.94	1	0.38	1	1	1.38	1	0.38	37.9	14.3
58	1	13	2	3600	5	7	2	4			0	0	0	0	330			0	1	5.94	1	0.38	1	1	1.38	1	0.38	37.9	14.3
59	1	14	2	3000	1	32	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
60	1	14	2	3000	2	30	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
61	1	14	2	3000	3	11	1	4			0.5	15	0	0	330			0	1	4.95	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
62	1	14	2	3000	4	10	1	4			0.5	15	0	0	330			0	1	4.95	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
63	1	14	2	3000	5	9	2	4			0	0	0	0	330			0	1	4.95	1	0.38	1	1	1.38	1	0.38	37.9	14.3
64	1	15	4	6000	1	47	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
65	1	15	4	6000	2	45	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
66	1	15	4	6000	3	19	1	3			0.5	15	2	0	330			0	1	39.9	1	1	1	1	1.37	0.61	1	35.2	21.3
67	1	15	4	6000	4	13	1	4			0.5	15	0	0	330			0	1	9.9	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
68	1	15	4	6000	5	9	2	4			0	0	0	0	330			0	1	9.9	1	0.38	1	1	1.38	1	0.38	37.9	14.3
69	1	16	4	3700	1	38	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
70	1	16	4	3700	2	38	2	2			0	0	0	0	480			0	0	0	1	0	0	1	0	1	0	1	0
71	1	16	4	3700	3	16	1	3			0.5	15	0	0	480			0	1	24.6	1	1	1	1	1.37	0.61	1	35.2	21.3
72	1	16	4	3700	4	12	2	4			0.5	15	0	0	330			0	1	6.11	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
73	1	16	4	3700	5	10	1	4			0.5	15	0	0	330			0	1	6.11	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
74	1	16	4	3700	6	9	1	4			0.5	15	0	0	330			0	1	6.11	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
75	1	17	2	3000	1	30	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
76	1	17	2	3000	2	28	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
77	1	17	2	3000	3	13	1	4			0.5	0.15	0	0	480			0	1	4.95	1	0.38	1	1	1.38	1	0.38	37.9	14.2
78	1	17	2	3000	4	11	1	4			0.5	0.15	0	0	480			0	1	4.95	1	0.38	1	1	1.38	1	0.38	37.9	14.2
79	1	18	4	9500	1	58	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
80	1	18	4	9500	2	45	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
81	1	18	4	9500	3	20	1	3			3	20	5	10	320			3.33	1	63.2	1	1	1	1	1.36	0.37	1	34.3	12.8
82	1	18	4	9500	4	19	1	3			3	20	5	0	320			0	1	63.2	1	1	1	1	1.36	0.51	1	34.3	17.6
83	1	18	4	9500	5	14	2	4			0.5	15	5	5	330			10	1	15.7	1	0.38	1	1	1.37	0.32	0.38	35.2	4.25
84	1	19	2	3000	1	35	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
85	1	19	2	3000	2	34	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
86	1	19	2	3000	3	14	2	4			0.5	15	0	0	0.15			0	1	4.95	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
87	1	19	2	3000	4	13	2	4			0	0	0	0	0			0	1	4.95	1	0.38	1	1	1.38	1	0.38	37.9	14.3
88	1	19	2	3000	5	12	1	4			0.5	0.15	0	0	450			0	1	4.95	1	0.38	1	1	1.38	1	0.38	37.9	14.2
89	1	19	2	3000	6	11	1	4			0.5	15	0	0	450			0	1	4.95	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
90	1	20	2	3300	1	36	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
91	1	20	2	3300	2	35	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
92	1	20	2	3300	3	6	2	4			0.5	15	0	0	330			0	1	5.45	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
93	1	20	2	3300	4	5	2	4			0.5	15	0	0	330			0	1	5.45	1	0.38	1	1	1.37	0.61	0.38	35.2	8.05
94	2	21	2	12000	1	45	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
95	2	21	2	12000	2	27	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
96	2	21	2	12000	3	8	1	4			0	0	0	0	0			0	1	19.8	1	0.74	1	1	1.38	1	0.74	37.9	28.2
97	2	21	2	12000	4	6	1	4			0	0	0	0	0			0	1	19.8	1	0.74	1	1	1.38	1	0.74	37.9	28.2
98	2	21	2	12000	5	4	1	4			0	0	0	0	0			0	1	19.8	1	0.74	1	1	1.38	1	0.74	37.9	28.2
99	2	22	2	2000	1	32	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
100	2	22	2	2000	2	28	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
101	2	22	2	2000	3	6	1	4			0	0	0	0	0			0	1	3.3	1	0.74	1	1	1.38	1	0.74	37.9	28.2
102	2	23	2	7000	1	35	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
103	2	23	2	7000	2	30	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
104	2	23	2	7000	3	6	2	4			0	0	0	0	0			0	1	11.6	1	0.74	1	1	1.38	1	0.74	37.9	28.2
105	2	23	2	7000	4	4	2	4			0	0	0	0	0			0	1	11.6	1	0.74	1	1	1.38	1	0.74	37.9	28.2
106	2	24	2	4500	1	34	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
107	2	24	2	4500	2	35	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
108	2	24	2	4500	3	4	2	4			0	0	0	0	0			0	1	7.43	1	0.74	1	1	1.38	1	0.74	37.9	28.2
109	2	24	2	4500	4	2	2	4			0	0	0	0	0			0	1	7.43	1	0.74	1	1	1.38	1	0.74	37.9	28.2
110	2	24	2	4500	5	1	1	4			0	0	0	0	0			0	1	7.43	1	0.74	1	1	1.38	1	0.74	37.9	28.2
111	2	25	2	3000	1	30	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
112	2	25	2	3000	2	23	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
113	2	25	2	3000	3	8	1	4			0	0	0	0	0			0	1	4.95	1	0.74	1	1	1.38	1	0.74	37.9	28.2
114	2	25	2	3000	4	6	2	4			0	0	0	0	0			0	1	4.95	1	0.74	1	1	1.38	1	0.74	37.9	28.2
115	2	26	1	4500	1	45	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
116	2	26	1	4500	2	30	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
117	2	27	2	2000	1	53	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
118	2	27	2	2000	2	35	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
119	2	27	2	2000	3	13	2	4			0	0	0	0	0			0	1	3.3	1	0.74	1	1	1.38	1	0.74	37.9	28.2
120	2	27	2	2000	4	10	1	4			0	0	0	0	0			0	1	3.3	1	0.74	1	1	1.38	1	0.74	37.9	28.2
121	2	28	1	2000	1	50	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
122	2	28	1	2000	2	35	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
123	2	29	2	5000	1	36	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
124	2	29	2	5000	2	25	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
125	2	29	2	5000	3	13	2	4			0	0	0	0	0			0	1	8.25	1	0.74	1	1	1.38	1	0.74	37.9	28.2
126	2	29	2	5000	4	5	2	4			0	0	0	0	0			0	1	8.25	1	0.74	1	1	1.38	1	0.74	37.9	28.2
127	2	29	2	5000	5	3	1	4			0	0	0	0	0			0	1	8.25	1	0.74	1	1	1.38	1	0.74	37.9	28.2
128	2	30	1	3000	1	39	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
129	2	30	1	3000	2	30	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
130	2	31	2	3000	1	38	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
131	2	31	2	3000	2	36	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
132	2	31	2	3000	3	5	1	4			0	0	0	0	0			0	1	4.95	1	0.74	1	1	1.38	1	0.74	37.9	28.2
133	2	31	2	3000	4	3	1	4			0	0	0	0	0			0	1	4.95	1	0.74	1	1	1.38	1	0.74	37.9	28.2
134	2	32	2	5000	1	34	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
135	2	32	2	5000	2	25	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
136	2	32	2	5000	3	5	2	4			0	0	0	0	0			0	1	8.25	1	0.74	1	1	1.38	1	0.74	37.9	28.2
137	2	32	2	5000	4	3	1	4			0	0	0	0	0			0	1	8.25	1	0.74	1	1	1.38	1	0.74	37.9	28.2
138	2	33	2	6000	1	39	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
139	2	33	2	6000	2	30	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
140	2	33	2	6000	3	2	2	4			0	0	0	0	0			0	1	9.9	1	0.74	1	1	1.38	1	0.74	37.9	28.2
141	2	33	2	6000	4	1	1	4			0	0	0	0	0			0	1	9.9	1	0.74	1	1	1.38	1	0.74	37.9	28.2
142	2	34	1	10000	1	34	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
143	2	34	1	10000	2	25	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
144	2	35	2	3500	1	32	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
145	2	35	2	3500	2	25	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
146	2	35	2	3500	3	7	2	4			0	10	0	0	300			0	1	5.78	1	0.74	1	1	1.37	1	0.74	36.1	26.8
147	2	36	2	10000	1	38	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
148	2	36	2	10000	2	28	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
149	2	36	2	10000	3	1	1	4			0	0	0	0	0			0	1	16.5	1	0.74	1	1	1.38	1	0.74	37.9	28.2
150	2	37	2	4500	1	35	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
151	2	37	2	4500	2	21	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
152	2	37	2	4500	3	1	2	4			0	0	0	0	0			0	1	7.43	1	0.74	1	1	1.38	1	0.74	37.9	28.2
153	2	38	2	4500	1	36	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
154	2	38	2	4500	2	27	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
155	2	38	2	4500	3	8	2	4			0	5	0	0	330			0	1	7.43	1	0.74	1	1	1.37	1	0.74	37	27.5
156	2	39	2	10000	1	38	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
157	2	39	2	10000	2	32	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
158	2	39	2	10000	3	9	2	4			0	5	0	0	330			0	1	16.5	1	0.74	1	1	1.37	1	0.74	37	27.5
159	2	39	2	10000	4	7	1	4			0	0	0	0	0			0	1	16.5	1	0.74	1	1	1.38	1	0.74	37.9	28.2
160	2	40	2	4500	1	36	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
161	2	40	2	4500	2	26	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
162	2	40	2	4500	3	4	2	4			0	0	0	0	0			0	1	7.43	1	0.74	1	1	1.38	1	0.74	37.9	28.2
163	3	41	2	3500	1	50	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
164	3	41	2	3500	2	47	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
165	3	41	2	3500	3	14	1	4			0	0	0	0	330			0	1	5.78	1	0.02	1	1	1.38	1	0.02	37.9	0.66
166	3	41	2	3500	4	10	1	4			0	0	0	0	330			0	1	5.78	1	0.02	1	1	1.38	1	0.02	37.9	0.66
167	3	42	4	4000	1	44	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
168	3	42	4	4000	2	43	2	2			10	30	7	10	360			1	0	0	1	0	0	1	0	####	0	1	####
169	3	42	4	4000	3	19	1	3			10	30	7	10	360			1	1	26.6	1	0.2	1	1	1.36	0.17	0.2	32.5	1.13
170	3	42	4	4000	4	16	1	3			0	0	0	0	360			0	1	26.6	1	0.2	1	1	1.38	1	0.2	37.9	7.58
171	3	42	4	4000	5	8	1	4			0	0	0	0	360			0	1	6.6	1	0.02	1	1	1.38	1	0.02	37.9	0.66
172	3	43	2	4500	1	37	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
173	3	43	2	4500	2	36	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
174	3	43	2	4500	3	11	1	4			0	0	0	0	330			0	1	7.43	1	0.02	1	1	1.38	1	0.02	37.9	0.66
175	3	43	2	4500	4	8	1	4			0	0	0	0	330			0	1	7.43	1	0.02	1	1	1.38	1	0.02	37.9	0.66
176	3	44	4	1500	1	47	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
177	3	44	4	1500	2	45	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
178	3	44	4	1500	3	21	1	3			10	25	4	60	480			6	1	9.98	1	0.2	1	1	1.36	0	0.2	33.4	0
179	3	44	4	1500	4	19	1	3			10	30	7	10	330			1	1	9.98	1	0.2	1	1	1.36	0.05	0.2	32.5	0.32
180	3	44	4	1500	5	12	1	4			0	0	0	0	330			0	1	2.48	1	0.02	1	1	1.38	1	0.02	37.9	0.66
181	3	45	2	4000	1	28	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
182	3	45	2	4000	2	25	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
183	3	45	2	4000	3	5	2	4			0	0	0	0	330			0	1	6.6	1	0.02	1	1	1.38	1	0.02	37.9	0.66

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
184	3	46	2	3500	1	40	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
185	3	46	2	3500	2	40	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
186	3	46	2	3500	3	12	1	4			0	0	0	0	330			0	1	5.78	1	0.02	1	1	1.38	1	0.02	37.9	0.66
187	3	46	2	3500	4	11	1	4			0	0	0	0	330			0	1	5.78	1	0.02	1	1	1.38	1	0.02	37.9	0.66
188	3	46	2	3500	5	10	2	4			0	0	0	0	330			0	1	5.78	1	0.02	1	1	1.38	1	0.02	37.9	0.66
189	3	46	2	3500	6	8	2	4			0	0	0	0	330			0	1	5.78	1	0.02	1	1	1.38	1	0.02	37.9	0.66
190	3	47	2	6000	1	38	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
191	3	47	2	6000	2	35	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
192	3	47	2	6000	3	14	1	4			0	0	0	0	330			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66
193	3	47	2	6000	4	8	2	4			0	0	0	0	0			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66
194	3	48	4	5000	1	35	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
195	3	48	4	5000	2	33	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
196	3	48	4	5000	3	17	1	3			0	0	0	0	330			0	1	33.3	1	0.2	1	1	1.38	1	0.2	37.9	7.58
197	3	48	4	5000	4	14	1	4			0	0	0	0	330			0	1	8.25	1	0.02	1	1	1.38	1	0.02	37.9	0.66
198	3	48	4	5000	5	9	2	4			0	0	0	0	330			0	1	8.25	1	0.02	1	1	1.38	1	0.02	37.9	0.66
199	3	48	4	5000	6	7	2	4			0	0	0	0	330			0	1	8.25	1	0.02	1	1	1.38	1	0.02	37.9	0.66
200	3	49	2	6000	1	38	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
201	3	49	2	6000	2	35	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
202	3	49	2	6000	3	12	1	4			0	0	0	0	330			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66
203	3	50	2	7000	1	29	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
204	3	50	2	7000	2	25	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
205	3	50	2	7000	3	9	2	4			0	0	0	0	330			0	1	11.6	1	0.02	1	1	1.38	1	0.02	37.9	0.66
206	3	50	2	7000	4	7	1	4			0	0	0	0	330			0	1	11.6	1	0.02	1	1	1.38	1	0.02	37.9	0.66
207	3	51	2	15000	1	45	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
208	3	51	2	15000	2	45	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
209	3	51	2	15000	3	8	1	4			0	0	0	0	330			0	1	24.8	1	0.02	1	1	1.38	1	0.02	37.9	0.66
210	3	51	2	15000	4	5	1	4			0	0	0	0	330			0	1	24.8	1	0.02	1	1	1.38	1	0.02	37.9	0.66
211	3	52	2	3000	1	36	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
212	3	52	2	3000	2	35	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
213	3	52	2	3000	3	13	1	4			0	0	0	0	330			0	1	4.95	1	0.02	1	1	1.38	1	0.02	37.9	0.66
214	3	53	4	6000	1	45	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
215	3	53	4	6000	2	43	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
216	3	53	4	6000	3	22	1	3			10	30	7	10	330			1	1	39.9	1	0.2	1	1	1.36	0.22	0.2	32.5	1.45
217	3	53	4	6000	4	20	2	3			0	0	0	0	0			0	1	9.9	1	0	1	1	1.38	1	0	37.9	0
218	3	53	4	6000	5	18	1	3			10	30	7	10	480			1	1	39.9	1	0.2	1	1	1.36	0.22	0.2	32.5	1.45
219	3	53	4	6000	6	14	1	4			0	0	0	0	780			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66
220	3	53	4	6000	7	13	2	4			0	0	0	0	0			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66
221	3	53	4	6000	8	12	2	4			0	0	0	0	0			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
222	3	53	4	6000	9	11	2	4			0	0	0	0	0			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66
223	3	53	4	6000	10	10	1	4			0	0	0	0	330			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66
224	3	54	4	6000	1	55	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
225	3	54	4	6000	2	51	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
226	3	54	4	6000	3	17	2	3			0	0	0	0	0			0	1	9.9	1	0	1	1	1.38	1	0	37.9	0
227	3	54	4	6000	4	15	1	3			0	0	0	0	330			0	1	39.9	1	0.2	1	1	1.38	1	0.2	37.9	7.58
228	3	54	4	6000	5	14	1	4			0	0	0	0	330			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66
229	3	54	4	6000	6	10	2	4			0	0	0	0	330			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66
230	3	55	2	4500	1	37	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
231	3	55	2	4500	2	36	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
232	3	55	2	4500	3	7	1	4			0	0	0	0	330			0	1	7.43	1	0.02	1	1	1.38	1	0.02	37.9	0.66
233	3	56	2	4000	1	40	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
234	3	56	2	4000	2	40	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
235	3	56	2	4000	3	13	2	4			0	0	0	0	0			0	1	6.6	1	0.02	1	1	1.38	1	0.02	37.9	0.66
236	3	56	2	4000	4	12	1	4			0	0	0	0	330			0	1	6.6	1	0.02	1	1	1.38	1	0.02	37.9	0.66
237	3	56	2	4000	5	8	1	4			0	0	0	0	330			0	1	6.6	1	0.02	1	1	1.38	1	0.02	37.9	0.66
238	3	56	2	4000	6	6	2	4			0	0	0	0	330			0	1	6.6	1	0.02	1	1	1.38	1	0.02	37.9	0.66
239	3	57	2	4500	1	40	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
240	3	57	2	4500	2	38	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
241	3	57	2	4500	3	13	2	4			0	0	0	0	330			0	1	7.43	1	0.02	1	1	1.38	1	0.02	37.9	0.66
242	3	57	2	4500	4	9	1	4			0	0	0	0	330			0	1	7.43	1	0.02	1	1	1.38	1	0.02	37.9	0.66
243	3	58	2	450	1	50	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
244	3	58	2	450	2	48	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
245	3	58	2	450	3	14	1	4			0	0	0	0	330			0	1	0.74	1	0.02	1	1	1.38	1	0.02	37.9	0.66
246	3	58	2	450	4	10	2	4			0	0	0	0	330			0	1	0.74	1	0.02	1	1	1.38	1	0.02	37.9	0.66
247	3	59	2	6000	1	43	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
248	3	59	2	6000	2	40	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
249	3	59	2	6000	3	13	1	4			0	0	0	0	330			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66
250	3	59	2	6000	4	10	2	4			0	0	0	0	0			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66
251	3	59	2	6000	5	9	1	4			0	0	0	0	330			0	1	9.9	1	0.02	1	1	1.38	1	0.02	37.9	0.66
252	3	60	2	4000	1	36	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
253	3	60	2	4000	2	33	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
254	3	60	2	4000	3	13	2	4			0	0	0	0	0			0	1	6.6	1	0.02	1	1	1.38	1	0.02	37.9	0.66
255	3	60	2	4000	4	12	2	4			0	0	0	0	0			0	1	6.6	1	0.02	1	1	1.38	1	0.02	37.9	0.66
256	3	60	2	4000	5	11	1	4			0	0	0	0	330			0	1	6.6	1	0.02	1	1	1.38	1	0.02	37.9	0.66
257	4	61	2	3655	1	38	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
258	4	61	2	3655	2	30	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
259	4	61	2	3655	3	6	1	4			0.5	30	0	0	300			0	1	6.03	1	0.5	1	1	1.36	0.37	0.5	32.5	5.99

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
260	4	61	2	3655	4	4	1	4			0	0	0	0	0			0	1	6.03	1	0.5	1	1	1.38	1	0.5	37.9	19
261	4	61	2	3655	5	3	2	4			0	0	0	0	0			0	1	6.03	1	0.5	1	1	1.38	1	0.5	37.9	19
262	4	62	2	3300	1	25	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
263	4	62	2	3300	2	22	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
264	4	62	2	3300	3	3	2	4			0	0	0	0	0			0	1	5.45	1	0.5	1	1	1.38	1	0.5	37.9	19
265	4	63	2	3000	1	32	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
266	4	63	2	3000	2	27	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
267	4	63	2	3000	3	4	1	4			0	0	0	0	0			0	1	4.95	1	0.5	1	1	1.38	1	0.5	37.9	19
268	4	64	4	3000	1	60	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
269	4	64	4	3000	2	40	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
270	4	64	4	3000	3	18	1	3			0.2	5	0	0	360			0	1	20	1	1	1	1	1.37	0.85	1	37	31.3
271	4	64	4	3000	4	15	1	3			0.2	5	0	0	360			0	1	20	1	1	1	1	1.37	0.85	1	37	31.3
272	4	64	4	3000	5	6	2	4			0	0	0	0	0			0	1	4.95	1	0.5	1	1	1.38	1	0.5	37.9	19
273	4	64	4	3000	6	4	1	4			0	0	0	0	0			0	1	4.95	1	0.5	1	1	1.38	1	0.5	37.9	19
274	4	65	2	2400	1	30	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
275	4	65	2	2400	2	30	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
276	4	65	2	2400	3	8	1	4			0	0	0	0	0			0	1	3.96	1	0.5	1	1	1.38	1	0.5	37.9	19
277	4	65	2	2400	4	6	1	4			0	0	0	0	0			0	1	3.96	1	0.5	1	1	1.38	1	0.5	37.9	19
278	4	65	2	2400	5	3	2	4			0	0	0	0	0			0	1	3.96	1	0.5	1	1	1.38	1	0.5	37.9	19
279	4	66	2	1500	1	38	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
280	4	66	2	1500	2	30	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
281	4	66	2	1500	3	4	1	4			0	0	0	0	0			0	1	2.48	1	0.5	1	1	1.38	1	0.5	37.9	19
282	4	67	4	4000	1	40	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
283	4	67	4	4000	2	35	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
284	4	67	4	4000	3	16	1	3			0	0	0	0	0			0	1	26.6	1	1	1	1	1.38	1	1	37.9	37.9
285	4	67	4	4000	4	14	1	4			0	0	0	0	0			0	1	6.6	1	0.5	1	1	1.38	1	0.5	37.9	19
286	4	67	4	4000	5	11	2	4			0	0	0	0	0			0	1	6.6	1	0.5	1	1	1.38	1	0.5	37.9	19
287	4	67	4	4000	6	8	2	4			0	0	0	0	0			0	1	6.6	1	0.5	1	1	1.38	1	0.5	37.9	19
288	4	68	2	3600	1	30	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
289	4	68	2	3600	2	27	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
290	4	68	2	3600	3	2	1	4			0	0	0	0	0			0	1	5.94	1	0.5	1	1	1.38	1	0.5	37.9	19
291	4	68	2	3600	4	1	1	4			0	0	0	0	0			0	1	5.94	1	0.5	1	1	1.38	1	0.5	37.9	19
292	4	69	2	4000	1	25	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
293	4	69	2	4000	2	23	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
294	4	69	2	4000	3	3	2	4			0	0	0	0	0			0	1	6.6	1	0.5	1	1	1.38	1	0.5	37.9	19
295	4	70	2	3750	1	22	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
296	4	70	2	3750	2	19	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
297	4	70	2	3750	3	5	1	4			0	0	0	0	0			0	1	6.19	1	0.5	1	1	1.38	1	0.5	37.9	19

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
298	4	70	2	3750	4	2	1	4			0	0	0	0	0			0	1	6.19	1	0.5	1	1	1.38	1	0.5	37.9	19
299	4	71	2	3858	1	32	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
300	4	71	2	3858	2	30	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
301	4	71	2	3858	3	4	2	4			0	0	0	0	0			0	1	6.37	1	0.5	1	1	1.38	1	0.5	37.9	19
302	4	72	1	2500	1	25	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
303	4	72	1	2500	2	22	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
304	4	73	2	3000	1	25	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
305	4	73	2	3000	2	23	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
306	4	73	2	3000	3	3	1	4			0	0	0	0	0			0	1	4.95	1	0.5	1	1	1.38	1	0.5	37.9	19
307	4	74	2	3500	1	23	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
308	4	74	2	3500	2	22	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
309	4	74	2	3500	3	6	1	4			0	0	0	0	0			0	1	5.78	1	0.5	1	1	1.38	1	0.5	37.9	19
310	4	75	1	3000	1	26	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
311	4	75	1	3000	2	22	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
312	4	76	2	3000	1	25	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
313	4	76	2	3000	2	20	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
314	4	76	2	3000	3	2	2	4			0	0	0	0	0			0	1	4.95	1	0.5	1	1	1.38	1	0.5	37.9	19
315	4	77	2	4500	1	28	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
316	4	77	2	4500	2	25	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
317	4	77	2	4500	3	5	2	4			0	0	0	0	0			0	1	7.43	1	0.5	1	1	1.38	1	0.5	37.9	19
318	4	77	2	4500	4	2	1	4			0	0	0	0	0			0	1	7.43	1	0.5	1	1	1.38	1	0.5	37.9	19
319	4	78	2	3600	1	27	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
320	4	78	2	3600	2	25	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
321	4	78	2	3600	3	7	1	4			0	0	0	0	0			0	1	5.94	1	0.5	1	1	1.38	1	0.5	37.9	19
322	4	79	2	6000	1	23	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
323	4	79	2	6000	2	20	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
324	4	79	2	6000	3	3	1	4			0	0	0	0	0			0	1	9.9	1	0.5	1	1	1.38	1	0.5	37.9	19
325	4	80	1	9000	1	40	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
326	4	80	1	9000	2	35	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
327	5	81	2	10000	1	32	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
328	5	81	2	10000	2	27	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
329	5	81	2	10000	3	11	1	4			0	0	0	0	5			0	1	16.5	1	0.5	1	1	1.38	1	0.5	37.9	19
330	5	81	2	10000	4	7	2	4			0	0	0	0	0			0	1	16.5	1	0.5	1	1	1.38	1	0.5	37.9	19
331	5	81	2	10000	5	2	2	4			0	0	0	0	0			0	1	16.5	1	0.5	1	1	1.38	1	0.5	37.9	19
332	5	82	1	5000	1	30	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
333	5	82	1	5000	2	25	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
334	5	83	2	8000	1	50	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
335	5	83	2	8000	2	43	2	2			0	0	0	0	420			0	0	0	1	0	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
336	5	83	2	8000	3	12	1	4			0	0	0	0	0			0	1	13.2	1	0.5	1	1	1.38	1	0.5	37.9	19
337	5	84	1	6000	1	30	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
338	5	84	1	6000	2	20	2	2			0	0	0	0	300			0	0	0	1	0	0	1	0	1	0	1	0
339	5	85	1	6000	1	30	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
340	5	85	1	6000	2	25	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
341	5	86	1	4500	1	20	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
342	5	86	1	4500	2	20	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
343	5	87	1	4500	1	30	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
344	5	87	1	4500	2	20	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
345	5	88	2	11000	1	50	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
346	5	88	2	11000	2	40	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
347	5	88	2	11000	3	10	2	4			0	0	0	0	0			0	1	18.2	1	0.5	1	1	1.38	1	0.5	37.9	19
348	5	89	1	4500	1	50	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
349	5	89	1	4500	2	35	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
350	5	90	1	4500	1	26	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
351	5	90	1	4500	2	20	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
352	5	91	1	2000	1	60	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
353	5	91	1	2000	2	40	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
354	5	92	1	3000	1	21	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
355	5	92	1	3000	2	20	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
356	5	93	1	5500	1	28	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
357	5	93	1	5500	2	20	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
358	5	94	1	3000	1	27	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
359	5	94	1	3000	2	20	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
360	5	95	1	4500	1	26	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
361	5	95	1	4500	2	20	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
362	5	96	2	5600	1	30	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
363	5	96	2	5600	2	21	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
364	5	96	2	5600	3	4	1	4			0	0	0	0	0			0	1	9.24	1	0.5	1	1	1.38	1	0.5	37.9	19
365	5	97	1	3500	1	27	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
366	5	97	1	3500	2	20	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
367	5	98	1	4000	1	33	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
368	5	98	1	4000	2	20	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
369	5	99	1	4500	1	30	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
370	5	99	1	4500	2	22	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
371	5	100	2	4000	1	28	1	1			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
372	5	100	2	4000	2	26	2	2			0	0	0	0	0			0	0	0	1	0	0	1	0	1	0	1	0
373	5	100	2	4000	3	5	2	4			0	0	0	0	0			0	1	6.6	1	0.5	1	1	1.38	1	0.5	37.9	19

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
											ACTIVITY=			MARKET			3	<<CODE			start col(for hh data)=					39			
1	1	1	3	4000	1	65	1	1	1	1	0.5	0.5	0	0	10	2	3	0	1	6.6	0.97	0.05	0.5	0.17	1.38	0.98	0.02	3.21	0.08
2	1	1	3	4000	2	55	2	2	1	1	0.5	0.5	0	0	10	2	3	0	1	6.6	0.97	0.05	0.5	0.17	1.38	0.98	0.02	3.21	0.08
3	1	1	3	4000	3	25	2	3	1	1	0.5	0.5	0	0	10	2	3	0	1	6.6	0.97	0.05	0.5	0.17	1.38	0.98	0.02	3.21	0.08
4	1	1	3	4000	4	20	2	3	1	1	0.5	0.5	0	0	10	2	3	0	1	6.6	0.97	0.05	0.5	0.17	1.38	0.98	0.02	3.21	0.08
5	1	2	2	4000	1	35	1	1	3	2	0.5	15	0	0	15	4	4	0	1	6.6	0.97	0.05	0.25	1	1.37	0.61	0.01	35.2	0.26
6	1	2	2	4000	2	32	2	2	3	2	0.5	15	0	0	15	4	4	0	1	6.6	0.97	0.05	0.25	1	1.37	0.61	0.01	35.2	0.26
7	1	2	2	4000	3	11	1	4	3	2	0.5	15	0	0	15	4	4	0	0	6.6	0.97	0.05	0	1	0	0.61	0	1	0
8	1	2	2	4000	4	7	1	4	3	2	0.5	15	0	0	15	4	4	0	0	6.6	0.97	0.05	0	1	0	0.61	0	1	0
9	1	3	2	3900	1	40	1	1	1	1	1	30	2	0	60	2	2	0	1	6.44	0.97	0.05	0.5	1	1.36	0.37	0.02	32.5	0.29
10	1	3	2	3900	2	37	2	2	1	1	1	30	2	0	60	2	2	0	1	6.44	0.97	0.05	0.5	1	1.36	0.37	0.02	32.5	0.29
11	1	3	2	3900	3	13	1	4	1	1	1	30	2	0	60	2	2	0	0	6.44	0.97	0.05	0	1	0	0.37	0	1	0
12	1	3	2	3900	4	11	1	4	1	1	1	30	2	0	60	2	2	0	0	6.44	0.97	0.05	0	1	0	0.37	0	1	0
13	1	4	2	7000	1	43	1	1	1	0	0.5	15	0	0	60	4	3	0	1	11.6	0.97	0.05	0.25	1	1.37	0.61	0.01	35.2	0.26
14	1	4	2	7000	2	40	2	2	1	0	0.5	15	0	0	60	4	3	0	1	11.6	0.97	0.05	0.25	1	1.37	0.61	0.01	35.2	0.26
15	1	4	2	7000	3	14	1	4	1	0	0.5	15	0	0	60	4	3	0	0	11.6	0.97	0.05	0	1	0	0.61	0	1	0
16	1	4	2	7000	4	10	2	4	1	0	0.5	15	0	0	60	4	3	0	0	11.6	0.97	0.05	0	1	0	0.61	0	1	0
17	1	4	2	7000	5	8	1	4	1	0	0.5	15	0	0	60	4	3	0	0	11.6	0.97	0.05	0	1	0	0.61	0	1	0
18	1	4	2	7000	6	6	2	4	1	0	0.5	15	0	0	60	4	3	0	0	11.6	0.97	0.05	0	1	0	0.61	0	1	0
19	1	5	3	4000	1	64	1	1	1	1	0.5	15	2	0	15	2	2	0	1	6.6	0.97	0.05	0.5	1	1.37	0.61	0.02	35.2	0.52
20	1	5	3	4000	2	55	2	2	1	1	0.5	15	2	0	15	2	2	0	1	6.6	0.97	0.05	0.5	1	1.37	0.61	0.02	35.2	0.52
21	1	5	3	4000	3	15	1	3	1	1	0.5	15	2	0	15	2	2	0	1	6.6	0.97	0.05	0.5	1	1.37	0.61	0.02	35.2	0.52
22	1	6	2	4000	1	47	1	1	1	1	15	0	0	0	60	2	4	0	1	6.6	0.97	0.05	0.5	1	1.38	1	0.02	37.9	0.92
23	1	6	2	4000	2	40	2	2	1	1	15	0	0	0	60	2	4	0	1	6.6	0.97	0.05	0.5	1	1.38	1	0.02	37.9	0.92
24	1	6	2	4000	3	10	1	4	1	1	15	0	0	0	60	2	4	0	0	6.6	0.97	0.05	0	1	0	1	0	1	0
25	1	7	2	4300	1	35	1	1	1	1	0.5	15	4	25	30	2	4	50	1	7.1	0.97	0.05	0.5	0.5	1.37	0	0.02	13.6	0
26	1	7	2	4300	2	32	2	2	1	1	0.5	15	4	25	30	2	4	50	1	7.1	0.97	0.05	0.5	0.5	1.37	0	0.02	13.6	0
27	1	7	2	4300	3	12	2	4	1	1	0.5	15	4	25	30	2	4	50	0	7.1	0.97	0.05	0	0.5	0	0	0	1	0
28	1	7	2	4300	4	11	2	4	1	1	0.5	15	4	25	30	2	4	50	0	7.1	0.97	0.05	0	0.5	0	0	0	1	0
29	1	7	2	4300	5	10	2	4	1	1	0.5	15	4	25	30	2	4	50	0	7.1	0.97	0.05	0	0.5	0	0	0	1	0
30	1	8	4	3500	1	45	1	1	13	1	0.5	30	0	0	60	2	3	0	1	5.78	0.97	0.05	0.5	1	1.36	0.37	0.02	32.5	0.29
31	1	8	4	3500	2	43	2	2	13	1	0.5	30	0	0	60	2	3	0	1	5.78	0.97	0.05	0.5	1	1.36	0.37	0.02	32.5	0.29
32	1	8	4	3500	3	16	1	3	13	1	0.5	30	0	0	60	2	3	0	1	5.78	0.97	0.05	0.5	1	1.36	0.37	0.02	32.5	0.29
33	1	8	4	3500	4	14	1	4	13	1	0.5	30	0	0	60	2	3	0	0	5.78	0.97	0.05	0	1	0	0.37	0	1	0
34	1	8	4	3500	5	12	1	4	13	1	0.5	30	0	0	60	2	3	0	0	5.78	0.97	0.05	0	1	0	0.37	0	1	0
35	1	9	4	3500	1	38	1	1	1	1	0.5	15	2	0	60	1	4	0	1	5.78	0.97	0.05	1	1	1.37	0.61	0.05	35.2	1.03
36	1	9	4	3500	2	35	2	2	1	1	0.5	15	2	0	60	1	4	0	1	5.78	0.97	0.05	1	1	1.37	0.61	0.05	35.2	1.03
37	1	9	4	3500	3	15	1	3	1	1	0.5	15	2	0	60	1	4	0	1	5.78	0.97	0.05	1	1	1.37	0.61	0.05	35.2	1.03

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
38	1	9	4	3500	4	13	1	4	1	1	0.5	15	2	0	60	1	4	0	0	5.78	0.97	0.05	0	1	0	0.61	0	1	0
39	1	9	4	3500	5	7	2	4	1	1	0.5	15	2	0	60	1	4	0	0	5.78	0.97	0.05	0	1	0	0.61	0	1	0
40	1	10	2	5100	1	34	1	1	1	1	0.5	30	2	0	60	2	2	0	1	8.42	0.97	0.05	0.5	1	1.36	0.37	0.02	32.5	0.29
41	1	10	2	5100	2	32	2	2	1	1	0.5	30	2	0	60	2	2	0	1	8.42	0.97	0.05	0.5	1	1.36	0.37	0.02	32.5	0.29
42	1	10	2	5100	3	10	2	4	1	1	0.5	30	2	0	60	2	2	0	0	8.42	0.97	0.05	0	1	0	0.37	0	1	0
43	1	10	2	5100	4	6	1	4	1	1	0.5	30	2	0	60	2	2	0	0	8.42	0.97	0.05	0	1	0	0.37	0	1	0
44	1	11	2	6000	1	42	1	1	1	1	0.5	15	0	25	60	1	1	50	1	9.9	0.97	0.05	1	1	1.37	0	0.05	35.2	0.01
45	1	11	2	6000	2	40	2	2	1	1	0.5	15	0	25	60	1	1	50	1	9.9	0.97	0.05	1	1	1.37	0	0.05	35.2	0.01
46	1	11	2	6000	3	12	2	4	1	1	0.5	15	0	25	60	1	1	50	0	9.9	0.97	0.05	0	1	0	0	0	1	0
47	1	11	2	6000	4	9	1	4	1	1	0.5	15	0	25	60	1	1	50	0	9.9	0.97	0.05	0	1	0	0	0	1	0
48	1	12	2	3600	1	30	1	1	1	0	0.5	15	0	0	60	2	1	0	1	5.94	0.97	0.05	0.5	1	1.37	0.61	0.02	35.2	0.52
49	1	12	2	3600	2	29	1	2	1	0	0.5	15	0	0	60	2	1	0	1	5.94	0.97	0.05	0.5	1	1.37	0.61	0.02	35.2	0.52
50	1	12	2	3600	3	14	2	4	1	0	0.5	15	0	0	60	2	1	0	0	5.94	0.97	0.05	0	1	0	0.61	0	1	0
51	1	12	2	3600	4	11	2	4	1	0	0.5	15	0	0	60	2	1	0	0	5.94	0.97	0.05	0	1	0	0.61	0	1	0
52	1	12	2	3600	5	10	1	4	1	0	0.5	15	0	0	60	2	1	0	0	5.94	0.97	0.05	0	1	0	0.61	0	1	0
53	1	12	2	3600	6	9	1	4	1	0	0.5	15	0	0	60	2	1	0	0	5.94	0.97	0.05	0	1	0	0.61	0	1	0
54	1	13	2	3600	1	45	1	1	1	1	3	30	2	0	60	2	1	0	1	5.94	0.97	0.05	0.5	1	1.36	0.37	0.02	32.5	0.29
55	1	13	2	3600	2	40	2	2	1	1	3	30	2	0	60	2	1	0	1	5.94	0.97	0.05	0.5	1	1.36	0.37	0.02	32.5	0.29
56	1	13	2	3600	3	13	1	4	1	1	3	30	2	0	60	2	1	0	0	5.94	0.97	0.05	0	1	0	0.37	0	1	0
57	1	13	2	3600	4	9	2	4	1	1	3	30	2	0	60	2	1	0	0	5.94	0.97	0.05	0	1	0	0.37	0	1	0
58	1	13	2	3600	5	7	2	4	1	1	3	30	2	0	60	2	1	0	0	5.94	0.97	0.05	0	1	0	0.37	0	1	0
59	1	14	2	3000	1	32	1	1	1	1	0.5	15	0	0	0.3	2	1	0	1	4.95	0.97	0.05	0.5	0.01	1.37	0.61	0.02	0.03	0
60	1	14	2	3000	2	30	2	2	1	1	0.5	15	0	0	0.3	2	1	0	1	4.95	0.97	0.05	0.5	0.01	1.37	0.61	0.02	0.03	0
61	1	14	2	3000	3	11	1	4	1	1	0.5	15	0	0	0.3	2	1	0	0	4.95	0.97	0.05	0	0.01	0	0.61	0	1	0
62	1	14	2	3000	4	10	1	4	1	1	0.5	15	0	0	0.3	2	1	0	0	4.95	0.97	0.05	0	0.01	0	0.61	0	1	0
63	1	14	2	3000	5	9	2	4	1	1	0.5	15	0	0	0.3	2	1	0	0	4.95	0.97	0.05	0	0.01	0	0.61	0	1	0
64	1	15	4	6000	1	47	1	1	3	1	0.5	15	2	0	60	2	1	0	1	9.9	0.97	0.05	0.5	0.5	1.37	0.61	0.02	13.6	0.2
65	1	15	4	6000	2	45	2	2	3	1	0.5	15	2	0	60	2	1	0	1	9.9	0.97	0.05	0.5	0.5	1.37	0.61	0.02	13.6	0.2
66	1	15	4	6000	3	19	1	3	3	1	0.5	15	2	0	60	2	1	0	1	9.9	0.97	0.05	0.5	0.5	1.37	0.61	0.02	13.6	0.2
67	1	15	4	6000	4	13	1	4	3	1	0.5	15	2	0	60	2	1	0	0	9.9	0.97	0.05	0	0.5	0	0.61	0	1	0
68	1	15	4	6000	5	9	2	4	3	1	0.5	15	2	0	60	2	1	0	0	9.9	0.97	0.05	0	0.5	0	0.61	0	1	0
69	1	16	4	3700	1	38	1	1	1	1	0.5	30	4	15	30	2	2	30	1	6.11	0.97	0.05	0.5	0.5	1.36	0	0.02	12.7	0
70	1	16	4	3700	2	38	2	2	1	1	0.5	30	4	15	30	2	2	30	1	6.11	0.97	0.05	0.5	0.5	1.36	0	0.02	12.7	0
71	1	16	4	3700	3	16	1	3	1	1	0.5	30	4	15	30	2	2	30	1	6.11	0.97	0.05	0.5	0.5	1.36	0	0.02	12.7	0
72	1	16	4	3700	4	12	2	4	1	1	0.5	30	4	15	30	2	2	30	0	6.11	0.97	0.05	0	0.5	0	0	0	1	0
73	1	16	4	3700	5	10	1	4	1	1	0.5	30	4	15	30	2	2	30	0	6.11	0.97	0.05	0	0.5	0	0	0	1	0
74	1	16	4	3700	6	9	1	4	1	1	0.5	30	4	15	30	2	2	30	0	6.11	0.97	0.05	0	0.5	0	0	0	1	0
75	1	17	2	3000	1	30	1	1	1	1	0.5	15	2	0	30	2	2	0	1	4.95	0.97	0.05	0.5	1	1.37	0.61	0.02	35.2	0.52

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
76	1	17	2	3000	2	28	2	2	1	1	0.5	15	2	0	30	2	2	0	1	4.95	0.97	0.05	0.5	1	1.37	0.61	0.02	35.2	0.52
77	1	17	2	3000	3	13	1	4	1	1	0.5	15	2	0	30	2	2	0	0	4.95	0.97	0.05	0	1	0	0.61	0	1	0
78	1	17	2	3000	4	11	1	4	1	1	0.5	15	2	0	30	2	2	0	0	4.95	0.97	0.05	0	1	0	0.61	0	1	0
79	1	18	4	9500	1	58	1	1	3	1	0.5	15	0	0	60	1	2	0	1	15.7	0.97	0.05	1	1	1.37	0.61	0.05	35.2	1.03
80	1	18	4	9500	2	45	2	2	3	1	0.5	15	0	0	60	1	2	0	1	15.7	0.97	0.05	1	1	1.37	0.61	0.05	35.2	1.03
81	1	18	4	9500	3	20	1	3	3	1	0.5	15	0	0	60	1	2	0	1	15.7	0.97	0.05	1	1	1.37	0.61	0.05	35.2	1.03
82	1	18	4	9500	4	19	1	3	3	1	0.5	15	0	0	60	1	2	0	1	15.7	0.97	0.05	1	1	1.37	0.61	0.05	35.2	1.03
83	1	18	4	9500	5	14	2	4	3	1	0.5	15	0	0	60	1	2	0	0	15.7	0.97	0.05	0	1	0	0.61	0	1	0
84	1	19	2	3000	1	35	1	1	1	1	0.5	30	0	0	60	2	1	0	1	4.95	0.97	0.05	0.5	1	1.36	0.37	0.02	32.5	0.29
85	1	19	2	3000	2	34	2	2	1	1	0.5	30	0	0	60	2	1	0	1	4.95	0.97	0.05	0.5	1	1.36	0.37	0.02	32.5	0.29
86	1	19	2	3000	3	14	2	4	1	1	0.5	30	0	0	60	2	1	0	0	4.95	0.97	0.05	0	1	0	0.37	0	1	0
87	1	19	2	3000	4	13	2	4	1	1	0.5	30	0	0	60	2	1	0	0	4.95	0.97	0.05	0	1	0	0.37	0	1	0
88	1	19	2	3000	5	12	1	4	1	1	0.5	30	0	0	60	2	1	0	0	4.95	0.97	0.05	0	1	0	0.37	0	1	0
89	1	19	2	3000	6	11	1	4	1	1	0.5	30	0	0	60	2	1	0	0	4.95	0.97	0.05	0	1	0	0.37	0	1	0
90	1	20	2	3300	1	36	1	1	1	1	0.5	15	0	0	30	1	2	0	1	5.45	0.97	0.05	1	1	1.37	0.61	0.05	35.2	1.03
91	1	20	2	3300	2	35	2	2	1	1	0.5	15	0	0	30	1	2	0	1	5.45	0.97	0.05	1	1	1.37	0.61	0.05	35.2	1.03
92	1	20	2	3300	3	6	2	4	1	1	0.5	15	0	0	30	1	2	0	0	5.45	0.97	0.05	0	1	0	0.61	0	1	0
93	1	20	2	3300	4	5	2	4	1	1	0.5	15	0	0	30	1	2	0	0	5.45	0.97	0.05	0	1	0	0.61	0	1	0
94	2	21	2	12000	1	45	1	1	1	1	0	15	0	0	60	1	1	0	1	19.8	0.95	1	1	0.08	1.37	1	0.95	1.17	1.12
95	2	21	2	12000	2	27	2	2	1	1	0	15	0	0	60	1	1	0	1	19.8	0.95	1	1	0.08	1.37	1	0.95	1.17	1.12
96	2	21	2	12000	3	8	1	4	1	1	0	15	0	0	60	1	1	0	0	19.8	0.95	1	0	0.08	0	1	0	1	0
97	2	21	2	12000	4	6	1	4	1	1	0	15	0	0	60	1	1	0	0	19.8	0.95	1	0	0.08	0	1	0	1	0
98	2	21	2	12000	5	4	1	4	1	1	0	15	0	0	60	1	1	0	0	19.8	0.95	1	0	0.08	0	1	0	1	0
99	2	22	2	2000	1	32	1	1	1	1	0	30	0	0	30	1	1	0	1	3.3	0.95	1	1	0.17	1.36	1	0.95	2.86	2.71
100	2	22	2	2000	2	28	2	2	1	1	0	30	0	0	30	1	1	0	1	3.3	0.95	1	1	0.17	1.36	1	0.95	2.86	2.71
101	2	22	2	2000	3	6	1	4	1	1	0	30	0	0	30	1	1	0	0	3.3	0.95	1	0	0.17	0	1	0	1	0
102	2	23	2	7000	1	35	1	1	1	1	0	15	0	0	30	2	1	0	1	11.6	0.95	1	0.5	0.25	1.37	1	0.48	5.28	2.51
103	2	23	2	7000	2	30	2	2	1	1	0	15	0	0	30	2	1	0	1	11.6	0.95	1	0.5	0.25	1.37	1	0.48	5.28	2.51
104	2	23	2	7000	3	6	2	4	1	1	0	15	0	0	30	2	1	0	0	11.6	0.95	1	0	0.25	0	1	0	1	0
105	2	23	2	7000	4	4	2	4	1	1	0	15	0	0	30	2	1	0	0	11.6	0.95	1	0	0.25	0	1	0	1	0
106	2	24	2	4500	1	34	1	1	1	1	0	5	0	0	15	1	1	0	1	7.43	0.95	1	1	0.5	1.37	1	0.95	14.3	13.6
107	2	24	2	4500	2	35	2	2	1	1	0	5	0	0	15	1	1	0	1	7.43	0.95	1	1	0.5	1.37	1	0.95	14.3	13.6
108	2	24	2	4500	3	4	2	4	1	1	0	5	0	0	15	1	1	0	0	7.43	0.95	1	0	0.5	0	1	0	1	0
109	2	24	2	4500	4	2	2	4	1	1	0	5	0	0	15	1	1	0	0	7.43	0.95	1	0	0.5	0	1	0	1	0
110	2	24	2	4500	5	1	1	4	1	1	0	5	0	0	15	1	1	0	0	7.43	0.95	1	0	0.5	0	1	0	1	0
111	2	25	2	3000	1	30	1	1	1	1	0	10	0	0	15	0	0	0	1	4.95	0.95	1	1	0.25	1.37	1	0.95	5.39	5.12
112	2	25	2	3000	2	23	2	2	1	1	0	10	0	0	15	0	0	0	1	4.95	0.95	1	1	0.25	1.37	1	0.95	5.39	5.12
113	2	25	2	3000	3	8	1	4	1	1	0	10	0	0	15	0	0	0	0	4.95	0.95	1	1	0.25	0	1	0.95	1	0.95

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
114	2	25	2	3000	4	6	2	4	1	1	0	10	0	0	15	0	0	0	0	4.95	0.95	1	1	0.25	0	1	0.95	1	0.95
115	2	26	1	4500	1	45	1	1	1	1	0	5	0	0	30	0	1	0	1	7.43	0.95	1	1	0.5	1.37	1	0.95	14.3	13.6
116	2	26	1	4500	2	30	2	2	1	1	0	5	0	0	30	0	1	0	1	7.43	0.95	1	1	0.5	1.37	1	0.95	14.3	13.6
117	2	27	2	2000	1	53	1	1	1	1	0	5	0	0	20	0	1	0	1	3.3	0.95	1	1	0.67	1.37	1	0.95	21.2	20.1
118	2	27	2	2000	2	35	2	2	1	1	0	5	0	0	20	0	1	0	1	3.3	0.95	1	1	0.67	1.37	1	0.95	21.2	20.1
119	2	27	2	2000	3	13	2	4	1	1	0	5	0	0	20	0	1	0	0	3.3	0.95	1	1	0.67	0	1	0.95	1	0.95
120	2	27	2	2000	4	10	1	4	1	1	0	5	0	0	20	0	1	0	0	3.3	0.95	1	1	0.67	0	1	0.95	1	0.95
121	2	28	1	2000	1	50	1	1	1	1	0	5	0	0	20	0	1	0	1	3.3	0.95	1	1	0.67	1.37	1	0.95	21.2	20.1
122	2	28	1	2000	2	35	2	2	1	1	0	5	0	0	20	0	1	0	1	3.3	0.95	1	1	0.67	1.37	1	0.95	21.2	20.1
123	2	29	2	5000	1	36	1	1	1	1	0	5	0	0	20	0	1	0	1	8.25	0.95	1	1	0.67	1.37	1	0.95	21.2	20.1
124	2	29	2	5000	2	25	2	2	1	1	0	5	0	0	20	0	1	0	1	8.25	0.95	1	1	0.67	1.37	1	0.95	21.2	20.1
125	2	29	2	5000	3	13	2	4	1	1	0	5	0	0	20	0	1	0	0	8.25	0.95	1	1	0.67	0	1	0.95	1	0.95
126	2	29	2	5000	4	5	2	4	1	1	0	5	0	0	20	0	1	0	0	8.25	0.95	1	1	0.67	0	1	0.95	1	0.95
127	2	29	2	5000	5	3	1	4	1	1	0	5	0	0	20	0	1	0	0	8.25	0.95	1	1	0.67	0	1	0.95	1	0.95
128	2	30	1	3000	1	39	1	1	1	1	0	30	0	0	45	0	1	0	1	4.95	0.95	1	1	0.75	1.36	1	0.95	22	20.9
129	2	30	1	3000	2	30	2	2	1	1	0	30	0	0	45	0	1	0	1	4.95	0.95	1	1	0.75	1.36	1	0.95	22	20.9
130	2	31	2	3000	1	38	1	1	1	1	0	10	0	0	30	1	1	0	1	4.95	0.95	1	1	1	1.37	1	0.95	36.1	34.3
131	2	31	2	3000	2	36	2	2	1	1	0	10	0	0	30	1	1	0	1	4.95	0.95	1	1	1	1.37	1	0.95	36.1	34.3
132	2	31	2	3000	3	5	1	4	1	1	0	10	0	0	30	1	1	0	0	4.95	0.95	1	0	1	0	1	0	1	0
133	2	31	2	3000	4	3	1	4	1	1	0	10	0	0	30	1	1	0	0	4.95	0.95	1	0	1	0	1	0	1	0
134	2	32	2	5000	1	34	1	1	1	1	0	10	0	0	30	1	1	0	1	8.25	0.95	1	1	0.5	1.37	1	0.95	13.9	13.3
135	2	32	2	5000	2	25	2	2	1	1	0	10	0	0	30	1	1	0	1	8.25	0.95	1	1	0.5	1.37	1	0.95	13.9	13.3
136	2	32	2	5000	3	5	2	4	1	1	0	10	0	0	30	1	1	0	0	8.25	0.95	1	0	0.5	0	1	0	1	0
137	2	32	2	5000	4	3	1	4	1	1	0	10	0	0	30	1	1	0	0	8.25	0.95	1	0	0.5	0	1	0	1	0
138	2	33	2	6000	1	39	1	1	1	1	0	5	0	0	20	0	1	0	1	9.9	0.95	1	1	0.67	1.37	1	0.95	21.2	20.1
139	2	33	2	6000	2	30	2	2	1	1	0	5	0	0	20	0	1	0	1	9.9	0.95	1	1	0.67	1.37	1	0.95	21.2	20.1
140	2	33	2	6000	3	2	2	4	1	1	0	5	0	0	20	0	1	0	0	9.9	0.95	1	1	0.67	0	1	0.95	1	0.95
141	2	33	2	6000	4	1	1	4	1	1	0	5	0	0	20	0	1	0	0	9.9	0.95	1	1	0.67	0	1	0.95	1	0.95
142	2	34	1	10000	1	34	1	1	1	2	12	30	5	0	120	0	1	0	1	16.5	0.95	1	1	2	1.36	0.37	0.95	83.4	29.2
143	2	34	1	10000	2	25	2	2	1	2	12	30	5	0	120	0	1	0	1	16.5	0.95	1	1	2	1.36	0.37	0.95	83.4	29.2
144	2	35	2	3500	1	32	1	1	1	1	0	5	0	0	15	1	1	0	1	5.78	0.95	1	1	0.5	1.37	1	0.95	14.3	13.6
145	2	35	2	3500	2	25	2	2	1	1	0	5	0	0	15	1	1	0	1	5.78	0.95	1	1	0.5	1.37	1	0.95	14.3	13.6
146	2	35	2	3500	3	7	2	4	1	1	0	5	0	0	15	1	1	0	0	5.78	0.95	1	0	0.5	0	1	0	1	0
147	2	36	2	10000	1	38	1	1	1	1	0	10	0	0	30	2	1	0	1	16.5	0.95	1	0.5	2	1.37	1	0.48	93.3	44.3
148	2	36	2	10000	2	28	2	2	1	1	0	10	0	0	30	2	1	0	1	16.5	0.95	1	0.5	2	1.37	1	0.48	93.3	44.3
149	2	36	2	10000	3	1	1	4	1	1	0	10	0	0	30	2	1	0	0	16.5	0.95	1	0	2	0	1	0	1	0
150	2	37	2	4500	1	35	1	1	1	1	0	10	0	0	30	1	1	0	1	7.43	0.95	1	1	0.5	1.37	1	0.95	13.9	13.3
151	2	37	2	4500	2	21	2	2	1	1	0	10	0	0	30	1	1	0	1	7.43	0.95	1	1	0.5	1.37	1	0.95	13.9	13.3

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
152	2	37	2	4500	3	1	2	4	1	1	0	10	0	0	30	1	1	0	0	7.43	0.95	1	0	0.5	0	1	0	1	0
153	2	38	2	4500	1	36	1	1	1	1	0	5	0	0	30	1	1	0	1	7.43	0.95	1	1	1	1.37	1	0.95	37	35.2
154	2	38	2	4500	2	27	2	2	1	1	0	5	0	0	30	1	1	0	1	7.43	0.95	1	1	1	1.37	1	0.95	37	35.2
155	2	38	2	4500	3	8	2	4	1	1	0	5	0	0	30	1	1	0	0	7.43	0.95	1	0	1	0	1	0	1	0
156	2	39	2	10000	1	38	1	1	1	1	0	10	0	0	30	1	1	0	1	16.5	0.95	1	1	0.5	1.37	1	0.95	13.9	13.3
157	2	39	2	10000	2	32	2	2	1	1	0	10	0	0	30	1	1	0	1	16.5	0.95	1	1	0.5	1.37	1	0.95	13.9	13.3
158	2	39	2	10000	3	9	2	4	1	1	0	10	0	0	30	1	1	0	0	16.5	0.95	1	0	0.5	0	1	0	1	0
159	2	39	2	10000	4	7	1	4	1	1	0	10	0	0	30	1	1	0	0	16.5	0.95	1	0	0.5	0	1	0	1	0
160	2	40	2	4500	1	36	1	1	1	1	0	10	0	0	30	1	1	0	1	7.43	0.95	1	1	0.5	1.37	1	0.95	13.9	13.3
161	2	40	2	4500	2	26	2	2	1	1	0	10	0	0	30	1	1	0	1	7.43	0.95	1	1	0.5	1.37	1	0.95	13.9	13.3
162	2	40	2	4500	3	4	2	4	1	1	0	10	0	0	30	1	1	0	0	7.43	0.95	1	0	0.5	0	1	0	1	0
163	3	41	2	3500	1	50	1	1	1	1	0	10	0	0	15	1	2	0	1	5.78	0.59	0.08	1	1	1.37	1	0.05	36.1	1.65
164	3	41	2	3500	2	47	2	2	1	1	0	10	0	0	15	1	2	0	1	5.78	0.59	0.08	1	1	1.37	1	0.05	36.1	1.65
165	3	41	2	3500	3	14	1	4	1	1	0	10	0	0	15	1	2	0	0	5.78	0.59	0.08	0	1	0	1	0	1	0
166	3	41	2	3500	4	10	1	4	1	1	0	10	0	0	15	1	2	0	0	5.78	0.59	0.08	0	1	0	1	0	1	0
167	3	42	4	4000	1	44	1	1	34	1	0	10	2	0	20	1	2	0	1	6.6	0.59	0.08	1	0.33	1.37	1	0.05	8	0.37
168	3	42	4	4000	2	43	2	2	34	1	0	10	2	0	20	1	2	0	1	6.6	0.59	0.08	1	0.33	1.37	1	0.05	8	0.37
169	3	42	4	4000	3	19	1	3	34	1	0	10	2	0	20	1	2	0	1	6.6	0.59	0.08	1	0.33	1.37	1	0.05	8	0.37
170	3	42	4	4000	4	16	1	3	34	1	0	10	2	0	20	1	2	0	1	6.6	0.59	0.08	1	0.33	1.37	1	0.05	8	0.37
171	3	42	4	4000	5	8	1	4	34	1	0	10	2	0	20	1	2	0	0	6.6	0.59	0.08	0	0.33	0	1	0	1	0
172	3	43	2	4500	1	37	1	1	1	1	0	10	0	0	20	1	1	0	1	7.43	0.59	0.08	1	0.67	1.37	1	0.05	20.7	0.95
173	3	43	2	4500	2	36	2	2	1	1	0	10	0	0	20	1	1	0	1	7.43	0.59	0.08	1	0.67	1.37	1	0.05	20.7	0.95
174	3	43	2	4500	3	11	1	4	1	1	0	10	0	0	20	1	1	0	0	7.43	0.59	0.08	0	0.67	0	1	0	1	0
175	3	43	2	4500	4	8	1	4	1	1	0	10	0	0	20	1	1	0	0	7.43	0.59	0.08	0	0.67	0	1	0	1	0
176	3	44	4	1500	1	47	1	1	14	1	10	10	4	10	40	1	0	1	1	2.48	0.59	0.08	1	1.33	1.37	0	0.05	53.5	0
177	3	44	4	1500	2	45	2	2	14	1	10	10	4	10	40	1	0	1	1	2.48	0.59	0.08	1	1.33	1.37	0	0.05	53.5	0
178	3	44	4	1500	3	21	1	3	14	1	10	10	4	10	40	1	0	1	1	2.48	0.59	0.08	1	1.33	1.37	0	0.05	53.5	0
179	3	44	4	1500	4	19	1	3	14	1	10	10	4	10	40	1	0	1	1	2.48	0.59	0.08	1	1.33	1.37	0	0.05	53.5	0
180	3	44	4	1500	5	12	1	4	14	1	10	10	4	10	40	1	0	1	0	2.48	0.59	0.08	0	1.33	0	0	0	1	0
181	3	45	2	4000	1	28	1	1	1	1	0.5	15	0	0	30	1	1	0	1	6.6	0.59	0.08	1	1	1.37	0.61	0.05	35.2	0.98
182	3	45	2	4000	2	25	2	2	1	1	0.5	15	0	0	30	1	1	0	1	6.6	0.59	0.08	1	1	1.37	0.61	0.05	35.2	0.98
183	3	45	2	4000	3	5	2	4	1	1	0.5	15	0	0	30	1	1	0	0	6.6	0.59	0.08	0	1	0	0.61	0	1	0
184	3	46	2	3500	1	40	1	1	1	1	0.5	15	2	0	60	1	1	0	1	5.78	0.59	0.08	1	1	1.37	0.61	0.05	35.2	0.98
185	3	46	2	3500	2	40	2	2	1	1	0.5	15	2	0	60	1	1	0	1	5.78	0.59	0.08	1	1	1.37	0.61	0.05	35.2	0.98
186	3	46	2	3500	3	12	1	4	1	1	0.5	15	2	0	60	1	1	0	0	5.78	0.59	0.08	0	1	0	0.61	0	1	0
187	3	46	2	3500	4	11	1	4	1	1	0.5	15	2	0	60	1	1	0	0	5.78	0.59	0.08	0	1	0	0.61	0	1	0
188	3	46	2	3500	5	10	2	4	1	1	0.5	15	2	0	60	1	1	0	0	5.78	0.59	0.08	0	1	0	0.61	0	1	0
189	3	46	2	3500	6	8	2	4	1	1	0.5	15	2	0	60	1	1	0	0	5.78	0.59	0.08	0	1	0	0.61	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
190	3	47	2	6000	1	38	1	1	3	1	0.5	15	0	0	60	1	1	0	1	9.9	0.59	0.08	1	1	1.37	0.61	0.05	35.2	0.98
191	3	47	2	6000	2	35	2	2	3	1	0.5	15	0	0	60	1	1	0	1	9.9	0.59	0.08	1	1	1.37	0.61	0.05	35.2	0.98
192	3	47	2	6000	3	14	1	4	3	1	0.5	15	0	0	60	1	1	0	0	9.9	0.59	0.08	0	1	0	0.61	0	1	0
193	3	47	2	6000	4	8	2	4	3	1	0.5	15	0	0	60	1	1	0	0	9.9	0.59	0.08	0	1	0	0.61	0	1	0
194	3	48	4	5000	1	35	1	1	3	1	0.5	10	0	0	60	1	1	0	1	8.25	0.59	0.08	1	1	1.37	0.72	0.05	36.1	1.18
195	3	48	4	5000	2	33	2	2	3	1	0.5	10	0	0	60	1	1	0	1	8.25	0.59	0.08	1	1	1.37	0.72	0.05	36.1	1.18
196	3	48	4	5000	3	17	1	3	3	1	0.5	10	0	0	60	1	1	0	1	8.25	0.59	0.08	1	1	1.37	0.72	0.05	36.1	1.18
197	3	48	4	5000	4	14	1	4	3	1	0.5	10	0	0	60	1	1	0	0	8.25	0.59	0.08	0	1	0	0.72	0	1	0
198	3	48	4	5000	5	9	2	4	3	1	0.5	10	0	0	60	1	1	0	0	8.25	0.59	0.08	0	1	0	0.72	0	1	0
199	3	48	4	5000	6	7	2	4	3	1	0.5	10	0	0	60	1	1	0	0	8.25	0.59	0.08	0	1	0	0.72	0	1	0
200	3	49	2	6000	1	38	1	1	1	1	0.5	15	0	0	60	0	3	0	1	9.9	0.59	0.08	1	1	1.37	0.61	0.05	35.2	0.98
201	3	49	2	6000	2	35	2	2	1	1	0.5	15	0	0	60	0	3	0	1	9.9	0.59	0.08	1	1	1.37	0.61	0.05	35.2	0.98
202	3	49	2	6000	3	12	1	4	1	1	0.5	15	0	0	60	0	3	0	0	9.9	0.59	0.08	1	1	0	0.61	0.05	1	0.03
203	3	50	2	7000	1	29	1	1	1	2	10	15	4	15	60	1	4	1.5	1	11.6	0.59	0.08	1	12	1.37	0.05	0.05	1053	2.17
204	3	50	2	7000	2	25	2	2	1	2	10	15	4	15	60	1	4	1.5	1	11.6	0.59	0.08	1	12	1.37	0.05	0.05	1053	2.17
205	3	50	2	7000	3	9	2	4	1	2	10	15	4	15	60	1	4	1.5	0	11.6	0.59	0.08	0	12	0	0.05	0	1	0
206	3	50	2	7000	4	7	1	4	1	2	10	15	4	15	60	1	4	1.5	0	11.6	0.59	0.08	0	12	0	0.05	0	1	0
207	3	51	2	15000	1	45	1	1	1	1	0.5	5	4	10	60	2	3	20	1	24.8	0.59	0.08	0.5	2	1.37	0.38	0.02	95.9	0.83
208	3	51	2	15000	2	45	2	2	1	1	0.5	5	4	10	60	2	3	20	1	24.8	0.59	0.08	0.5	2	1.37	0.38	0.02	95.9	0.83
209	3	51	2	15000	3	8	1	4	1	1	0.5	5	4	10	60	2	3	20	0	24.8	0.59	0.08	0	2	0	0.38	0	1	0
210	3	51	2	15000	4	5	1	4	1	1	0.5	5	4	10	60	2	3	20	0	24.8	0.59	0.08	0	2	0	0.38	0	1	0
211	3	52	2	3000	1	36	1	1	13	1	0.5	60	0	0	120	1	1	0	1	4.95	0.59	0.08	1	2	1.33	0.14	0.05	69.5	0.43
212	3	52	2	3000	2	35	2	2	13	1	0.5	60	0	0	120	1	1	0	1	4.95	0.59	0.08	1	2	1.33	0.14	0.05	69.5	0.43
213	3	52	2	3000	3	13	1	4	13	1	0.5	60	0	0	120	1	1	0	0	4.95	0.59	0.08	0	2	0	0.14	0	1	0
214	3	53	4	6000	1	45	1	1	13	1	10	30	9	10	100	1	1	1	1	9.9	0.59	0.08	1	1.67	1.36	0.05	0.05	65.1	0.15
215	3	53	4	6000	2	43	2	2	13	1	10	30	9	10	100	1	1	1	1	9.9	0.59	0.08	1	1.67	1.36	0.05	0.05	65.1	0.15
216	3	53	4	6000	3	22	1	3	13	1	10	30	9	10	100	1	1	1	1	9.9	0.59	0.08	1	1.67	1.36	0.05	0.05	65.1	0.15
217	3	53	4	6000	4	20	2	3	13	1	10	30	9	10	100	1	1	1	1	9.9	0.59	0.08	1	1.67	1.36	0.05	0.05	65.1	0.15
218	3	53	4	6000	5	18	1	3	13	1	10	30	9	10	100	1	1	1	1	9.9	0.59	0.08	1	1.67	1.36	0.05	0.05	65.1	0.15
219	3	53	4	6000	6	14	1	4	13	1	10	30	9	10	100	1	1	1	0	9.9	0.59	0.08	0	1.67	0	0.05	0	1	0
220	3	53	4	6000	7	13	2	4	13	1	10	30	9	10	100	1	1	1	0	9.9	0.59	0.08	0	1.67	0	0.05	0	1	0
221	3	53	4	6000	8	12	2	4	13	1	10	30	9	10	100	1	1	1	0	9.9	0.59	0.08	0	1.67	0	0.05	0	1	0
222	3	53	4	6000	9	11	2	4	13	1	10	30	9	10	100	1	1	1	0	9.9	0.59	0.08	0	1.67	0	0.05	0	1	0
223	3	53	4	6000	10	10	1	4	13	1	10	30	9	10	100	1	1	1	0	9.9	0.59	0.08	0	1.67	0	0.05	0	1	0
224	3	54	4	6000	1	55	1	1	4	1	10	30	7	10	120	1	1	1	1	9.9	0.59	0.08	1	8	1.36	0.05	0.05	548	1.22
225	3	54	4	6000	2	51	2	2	4	1	10	30	7	10	120	1	1	1	1	9.9	0.59	0.08	1	8	1.36	0.05	0.05	548	1.22
226	3	54	4	6000	3	17	2	3	4	1	10	30	7	10	120	1	1	1	1	9.9	0.59	0.08	1	8	1.36	0.05	0.05	548	1.22
227	3	54	4	6000	4	15	1	3	4	1	10	30	7	10	120	1	1	1	1	9.9	0.59	0.08	1	8	1.36	0.05	0.05	548	1.22

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
228	3	54	4	6000	5	14	1	4	4	1	10	30	7	10	120	1	1	1	0	9.9	0.59	0.08	0	8	0	0.05	0	1	0
229	3	54	4	6000	6	10	2	4	4	1	10	30	7	10	120	1	1	1	0	9.9	0.59	0.08	0	8	0	0.05	0	1	0
230	3	55	2	4500	1	37	1	1	13	1	0	15	0	0	60	1	1	0	1	7.43	0.59	0.08	1	1	1.37	1	0.05	35.2	1.61
231	3	55	2	4500	2	36	2	2	13	1	0	15	0	0	60	1	1	0	1	7.43	0.59	0.08	1	1	1.37	1	0.05	35.2	1.61
232	3	55	2	4500	3	7	1	4	13	1	0	15	0	0	60	1	1	0	0	7.43	0.59	0.08	0	1	0	1	0	1	0
233	3	56	2	4000	1	40	1	1	1	1	0	10	0	0	15	1	1	0	1	6.6	0.59	0.08	1	0.25	1.37	1	0.05	5.39	0.25
234	3	56	2	4000	2	40	2	2	1	1	0	10	0	0	15	1	1	0	1	6.6	0.59	0.08	1	0.25	1.37	1	0.05	5.39	0.25
235	3	56	2	4000	3	13	2	4	1	1	0	10	0	0	15	1	1	0	0	6.6	0.59	0.08	0	0.25	0	1	0	1	0
236	3	56	2	4000	4	12	1	4	1	1	0	10	0	0	15	1	1	0	0	6.6	0.59	0.08	0	0.25	0	1	0	1	0
237	3	56	2	4000	5	8	1	4	1	1	0	10	0	0	15	1	1	0	0	6.6	0.59	0.08	0	0.25	0	1	0	1	0
238	3	56	2	4000	6	6	2	4	1	1	0	10	0	0	15	1	1	0	0	6.6	0.59	0.08	0	0.25	0	1	0	1	0
239	3	57	2	4500	1	40	1	1	1	1	0	10	0	0	15	1	1	0	1	7.43	0.59	0.08	1	0.5	1.37	1	0.05	13.9	0.64
240	3	57	2	4500	2	38	2	2	1	1	0	10	0	0	15	1	1	0	1	7.43	0.59	0.08	1	0.5	1.37	1	0.05	13.9	0.64
241	3	57	2	4500	3	13	2	4	1	1	0	10	0	0	15	1	1	0	0	7.43	0.59	0.08	0	0.5	0	1	0	1	0
242	3	57	2	4500	4	9	1	4	1	1	0	10	0	0	15	1	1	0	0	7.43	0.59	0.08	0	0.5	0	1	0	1	0
243	3	58	2	450	1	50	1	1	1	1	0	0.5	0	0	60	1	2	0	1	0.74	0.59	0.08	1	0.46	1.38	1	0.05	13	0.6
244	3	58	2	450	2	48	2	2	1	1	0	0.5	0	0	60	1	2	0	1	0.74	0.59	0.08	1	0.46	1.38	1	0.05	13	0.6
245	3	58	2	450	3	14	1	4	1	1	0	0.5	0	0	60	1	2	0	0	0.74	0.59	0.08	0	0.46	0	1	0	1	0
246	3	58	2	450	4	10	2	4	1	1	0	0.5	0	0	60	1	2	0	0	0.74	0.59	0.08	0	0.46	0	1	0	1	0
247	3	59	2	6000	1	43	1	1	1	1	0	10	0	0	30	1	1	0	1	9.9	0.59	0.08	1	1	1.37	1	0.05	36.1	1.65
248	3	59	2	6000	2	40	2	2	1	1	0	10	0	0	30	1	1	0	1	9.9	0.59	0.08	1	1	1.37	1	0.05	36.1	1.65
249	3	59	2	6000	3	13	1	4	1	1	0	10	0	0	30	1	1	0	0	9.9	0.59	0.08	0	1	0	1	0	1	0
250	3	59	2	6000	4	10	2	4	1	1	0	10	0	0	30	1	1	0	0	9.9	0.59	0.08	0	1	0	1	0	1	0
251	3	59	2	6000	5	9	1	4	1	1	0	10	0	0	30	1	1	0	0	9.9	0.59	0.08	0	1	0	1	0	1	0
252	3	60	2	4000	1	36	1	1	1	1	0	15	0	0	60	1	1	0	1	6.6	0.59	0.08	1	1	1.37	1	0.05	35.2	1.61
253	3	60	2	4000	2	33	2	2	1	1	0	15	0	0	60	1	1	0	1	6.6	0.59	0.08	1	1	1.37	1	0.05	35.2	1.61
254	3	60	2	4000	3	13	2	4	1	1	0	15	0	0	60	1	1	0	0	6.6	0.59	0.08	0	1	0	1	0	1	0
255	3	60	2	4000	4	12	2	4	1	1	0	15	0	0	60	1	1	0	0	6.6	0.59	0.08	0	1	0	1	0	1	0
256	3	60	2	4000	5	11	1	4	1	1	0	15	0	0	60	1	1	0	0	6.6	0.59	0.08	0	1	0	1	0	1	0
257	4	61	2	3655	1	38	1	1	1	3	12	42	7	24	60	4	1	2	1	6.03	0.63	1	0.25	0.5	1.35	0	0.16	12	0
258	4	61	2	3655	2	30	2	2	1	3	12	42	7	24	60	4	1	2	1	6.03	0.63	1	0.25	0.5	1.35	0	0.16	12	0
259	4	61	2	3655	3	6	1	4	1	3	12	42	7	24	60	4	1	2	0	6.03	0.63	1	0	0.5	0	0	0	1	0
260	4	61	2	3655	4	4	1	4	1	3	12	42	7	24	60	4	1	2	0	6.03	0.63	1	0	0.5	0	0	0	1	0
261	4	61	2	3655	5	3	2	4	1	3	12	42	7	24	60	4	1	2	0	6.03	0.63	1	0	0.5	0	0	0	1	0
262	4	62	2	3300	1	25	1	1	1	1	12	40	7	24	60	0	0	2	1	5.45	0.63	1	1	2	1.35	0	0.63	78.6	0
263	4	62	2	3300	2	22	2	2	1	1	12	40	7	24	60	0	0	2	1	5.45	0.63	1	1	2	1.35	0	0.63	78.6	0
264	4	62	2	3300	3	3	2	4	1	1	12	40	7	24	60	0	0	2	0	5.45	0.63	1	1	2	0	0	0.63	1	0
265	4	63	2	3000	1	32	1	1	1	2	12	40	7	24	180	0	0	2	1	4.95	0.63	1	1	1.5	1.35	0	0.63	53.3	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
266	4	63	2	3000	2	27	2	2	1	2	12	40	7	24	180	0	0	2	1	4.95	0.63	1	1	1.5	1.35	0	0.63	53.3	0
267	4	63	2	3000	3	4	1	4	1	2	12	40	7	24	180	0	0	2	0	4.95	0.63	1	1	1.5	0	0	0.63	1	0
268	4	64	4	3000	1	60	1	1	1	1	12	20	4	33	120	0	0	2.75	1	4.95	0.63	1	1	1	1.36	0	0.63	34.3	0
269	4	64	4	3000	2	40	2	2	1	1	12	20	4	33	120	0	0	2.75	1	4.95	0.63	1	1	1	1.36	0	0.63	34.3	0
270	4	64	4	3000	3	18	1	3	1	1	12	20	4	33	120	0	0	2.75	1	4.95	0.63	1	1	1	1.36	0	0.63	34.3	0
271	4	64	4	3000	4	15	1	3	1	1	12	20	4	33	120	0	0	2.75	1	4.95	0.63	1	1	1	1.36	0	0.63	34.3	0
272	4	64	4	3000	5	6	2	4	1	1	12	20	4	33	120	0	0	2.75	0	4.95	0.63	1	1	1	0	0	0.63	1	0
273	4	64	4	3000	6	4	1	4	1	1	12	20	4	33	120	0	0	2.75	0	4.95	0.63	1	1	1	0	0	0.63	1	0
274	4	65	2	2400	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	3.96	0.63	1	1	0	1.38	1	0.63	0	0
275	4	65	2	2400	2	30	2	2	0	0	0	0	0	0	0	0	0	0	1	3.96	0.63	1	1	0	1.38	1	0.63	0	0
276	4	65	2	2400	3	8	1	4	0	0	0	0	0	0	0	0	0	0	0	3.96	0.63	1	1	0	0	1	0.63	0	0
277	4	65	2	2400	4	6	1	4	0	0	0	0	0	0	0	0	0	0	0	3.96	0.63	1	1	0	0	1	0.63	0	0
278	4	65	2	2400	5	3	2	4	0	0	0	0	0	0	0	0	0	0	0	3.96	0.63	1	1	0	0	1	0.63	0	0
279	4	66	2	1500	1	38	1	1	1	1	0.5	5	0	0	10	0	1	0	1	2.48	0.63	1	1	0.33	1.37	0.85	0.63	8.17	4.37
280	4	66	2	1500	2	30	2	2	1	1	0.5	5	0	0	10	0	1	0	1	2.48	0.63	1	1	0.33	1.37	0.85	0.63	8.17	4.37
281	4	66	2	1500	3	4	1	4	1	1	0.5	5	0	0	10	0	1	0	0	2.48	0.63	1	1	0.33	0	0.85	0.63	1	0.54
282	4	67	4	4000	1	40	1	1	1	2	12	40	7	20	60	0	1	1.67	1	6.6	0.63	1	1	0.5	1.35	0	0.63	12.1	0
283	4	67	4	4000	2	35	2	2	1	2	12	40	7	20	60	0	1	1.67	1	6.6	0.63	1	1	0.5	1.35	0	0.63	12.1	0
284	4	67	4	4000	3	16	1	3	1	2	12	40	7	20	60	0	1	1.67	1	6.6	0.63	1	1	0.5	1.35	0	0.63	12.1	0
285	4	67	4	4000	4	14	1	4	1	2	12	40	7	20	60	0	1	1.67	0	6.6	0.63	1	1	0.5	0	0	0.63	1	0
286	4	67	4	4000	5	11	2	4	1	2	12	40	7	20	60	0	1	1.67	0	6.6	0.63	1	1	0.5	0	0	0.63	1	0
287	4	67	4	4000	6	8	2	4	1	2	12	40	7	20	60	0	1	1.67	0	6.6	0.63	1	1	0.5	0	0	0.63	1	0
288	4	68	2	3600	1	30	1	1	1	2	12	40	7	24	60	0	0	2	1	5.94	0.63	1	1	0.5	1.35	0	0.63	12.1	0
289	4	68	2	3600	2	27	2	2	1	2	12	40	7	24	60	0	0	2	1	5.94	0.63	1	1	0.5	1.35	0	0.63	12.1	0
290	4	68	2	3600	3	2	1	4	1	2	12	40	7	24	60	0	0	2	0	5.94	0.63	1	1	0.5	0	0	0.63	1	0
291	4	68	2	3600	4	1	1	4	1	2	12	40	7	24	60	0	0	2	0	5.94	0.63	1	1	0.5	0	0	0.63	1	0
292	4	69	2	4000	1	25	1	1	1	1	0.5	10	0	0	20	0	1	0	1	6.6	0.63	1	1	0.33	1.37	0.72	0.63	8	3.62
293	4	69	2	4000	2	23	2	2	1	1	0.5	10	0	0	20	0	1	0	1	6.6	0.63	1	1	0.33	1.37	0.72	0.63	8	3.62
294	4	69	2	4000	3	3	2	4	1	1	0.5	10	0	0	20	0	1	0	0	6.6	0.63	1	1	0.33	0	0.72	0.63	1	0.45
295	4	70	2	3750	1	22	1	1	1	1	0.5	10	0	0	30	0	1	0	1	6.19	0.63	1	1	0.5	1.37	0.72	0.63	13.9	6.32
296	4	70	2	3750	2	19	2	2	1	1	0.5	10	0	0	30	0	1	0	1	6.19	0.63	1	1	0.5	1.37	0.72	0.63	13.9	6.32
297	4	70	2	3750	3	5	1	4	1	1	0.5	10	0	0	30	0	1	0	0	6.19	0.63	1	1	0.5	0	0.72	0.63	1	0.45
298	4	70	2	3750	4	2	1	4	1	1	0.5	10	0	0	30	0	1	0	0	6.19	0.63	1	1	0.5	0	0.72	0.63	1	0.45
299	4	71	2	3858	1	32	1	1	1	3	12	40	7	30	120	0	0	2.5	1	6.37	0.63	1	1	2	1.35	0	0.63	78.6	0
300	4	71	2	3858	2	30	2	2	1	3	12	40	7	30	120	0	0	2.5	1	6.37	0.63	1	1	2	1.35	0	0.63	78.6	0
301	4	71	2	3858	3	4	2	4	1	3	12	40	7	30	120	0	0	2.5	0	6.37	0.63	1	1	2	0	0	0.63	1	0
302	4	72	1	2500	1	25	1	1	0	0	0	0	0	0	0	0	0	0	1	4.13	0.63	1	1	0	1.38	1	0.63	0	0
303	4	72	1	2500	2	22	2	2	0	0	0	0	0	0	0	0	0	0	1	4.13	0.63	1	1	0	1.38	1	0.63	0	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
304	4	73	2	3000	1	25	1	1	1	1	0.5	10	0	0	20	0	1	0	1	4.95	0.63	1	1	0.33	1.37	0.72	0.63	8	3.62
305	4	73	2	3000	2	23	2	2	1	1	0.5	10	0	0	20	0	1	0	1	4.95	0.63	1	1	0.33	1.37	0.72	0.63	8	3.62
306	4	73	2	3000	3	3	1	4	1	1	0.5	10	0	0	20	0	1	0	0	4.95	0.63	1	1	0.33	0	0.72	0.63	1	0.45
307	4	74	2	3500	1	23	1	1	1	1	0.5	10	0	0	20	0	1	0	1	5.78	0.63	1	1	0.33	1.37	0.72	0.63	8	3.62
308	4	74	2	3500	2	22	2	2	1	1	0.5	10	0	0	20	0	1	0	1	5.78	0.63	1	1	0.33	1.37	0.72	0.63	8	3.62
309	4	74	2	3500	3	6	1	4	1	1	0.5	10	0	0	20	0	1	0	0	5.78	0.63	1	1	0.33	0	0.72	0.63	1	0.45
310	4	75	1	3000	1	26	1	1	1	2	12	40	7	30	180	0	0	2.5	1	4.95	0.63	1	1	3	1.35	0	0.63	136	0
311	4	75	1	3000	2	22	2	2	1	2	12	40	7	30	180	0	0	2.5	1	4.95	0.63	1	1	3	1.35	0	0.63	136	0
312	4	76	2	3000	1	25	1	1	1	2	12	40	7	30	60	0	1	2.5	1	4.95	0.63	1	1	1	1.35	0	0.63	30.8	0
313	4	76	2	3000	2	20	2	2	1	2	12	40	7	30	60	0	1	2.5	1	4.95	0.63	1	1	1	1.35	0	0.63	30.8	0
314	4	76	2	3000	3	2	2	4	1	2	12	40	7	30	60	0	1	2.5	0	4.95	0.63	1	1	1	0	0	0.63	1	0
315	4	77	2	4500	1	28	1	1	1	2	12	40	7	30	60	0	1	2.5	1	7.43	0.63	1	1	1	1.35	0	0.63	30.8	0
316	4	77	2	4500	2	25	2	2	1	2	12	40	7	30	60	0	1	2.5	1	7.43	0.63	1	1	1	1.35	0	0.63	30.8	0
317	4	77	2	4500	3	5	2	4	1	2	12	40	7	30	60	0	1	2.5	0	7.43	0.63	1	1	1	0	0	0.63	1	0
318	4	77	2	4500	4	2	1	4	1	2	12	40	7	30	60	0	1	2.5	0	7.43	0.63	1	1	1	0	0	0.63	1	0
319	4	78	2	3600	1	27	1	1	1	3	12	40	7	12	60	0	1	1	1	5.94	0.63	1	1	0.5	1.35	0	0.63	12.1	0.04
320	4	78	2	3600	2	25	2	2	1	3	12	40	7	12	60	0	1	1	1	5.94	0.63	1	1	0.5	1.35	0	0.63	12.1	0.04
321	4	78	2	3600	3	7	1	4	1	3	12	40	7	12	60	0	1	1	0	5.94	0.63	1	1	0.5	0	0	0.63	1	0
322	4	79	2	6000	1	23	1	1	1	2	12	15	4	33	60	0	0	2.75	1	9.9	0.63	1	1	0.5	1.37	0	0.63	13.6	0.01
323	4	79	2	6000	2	20	2	2	1	2	12	15	4	33	60	0	0	2.75	1	9.9	0.63	1	1	0.5	1.37	0	0.63	13.6	0.01
324	4	79	2	6000	3	3	1	4	1	2	12	15	4	33	60	0	0	2.75	0	9.9	0.63	1	1	0.5	0	0	0.63	1	0
325	4	80	1	9000	1	40	1	1	0	0	0	0	0	0	0	0	0	0	1	14.9	0.63	1	1	0	1.38	1	0.63	0	0
326	4	80	1	9000	2	35	2	2	0	0	0	0	0	0	0	0	0	0	1	14.9	0.63	1	1	0	1.38	1	0.63	0	0
327	5	81	2	10000	1	32	1	1	1	1	20	30	6	100	240	1	2	5	1	16.5	0.63	1	1	0.67	1.36	0	0.63	18.8	0
328	5	81	2	10000	2	27	2	2	1	1	20	30	6	100	240	1	2	5	1	16.5	0.63	1	1	0.67	1.36	0	0.63	18.8	0
329	5	81	2	10000	3	11	1	4	1	1	20	30	6	100	240	1	2	5	0	16.5	0.63	1	0	0.67	0	0	0	1	0
330	5	81	2	10000	4	7	2	4	1	1	20	30	6	100	240	1	2	5	0	16.5	0.63	1	0	0.67	0	0	0	1	0
331	5	81	2	10000	5	2	2	4	1	1	20	30	6	100	240	1	2	5	0	16.5	0.63	1	0	0.67	0	0	0	1	0
332	5	82	1	5000	1	30	1	1	1	1	20	30	7	10	60	2	2	0.5	1	8.25	0.63	1	0.5	1	1.36	0.03	0.32	32.5	0.34
333	5	82	1	5000	2	25	2	2	1	1	20	30	7	10	60	2	2	0.5	1	8.25	0.63	1	0.5	1	1.36	0.03	0.32	32.5	0.34
334	5	83	2	8000	1	50	1	1	1	2	20	120	7	20	240	2	1	1	1	13.2	0.63	1	0.5	4	1.28	0	0.32	111	0.03
335	5	83	2	8000	2	43	2	2	1	2	20	120	7	20	240	2	1	1	1	13.2	0.63	1	0.5	4	1.28	0	0.32	111	0.03
336	5	83	2	8000	3	12	1	4	1	2	20	120	7	20	240	2	1	1	0	13.2	0.63	1	0	4	0	0	0	1	0
337	5	84	1	6000	1	30	1	1	1	1	20	30	7	20	60	2	1	1	1	9.9	0.63	1	0.5	0.25	1.36	0.01	0.32	4.95	0.01
338	5	84	1	6000	2	20	2	2	1	1	20	30	7	20	60	2	1	1	1	9.9	0.63	1	0.5	0.25	1.36	0.01	0.32	4.95	0.01
339	5	85	1	6000	1	30	1	1	1	2	20	30	7	20	180	2	1	1	1	9.9	0.63	1	0.5	0.25	1.36	0.01	0.32	4.95	0.01
340	5	85	1	6000	2	25	2	2	1	2	20	30	7	20	180	2	1	1	1	9.9	0.63	1	0.5	0.25	1.36	0.01	0.32	4.95	0.01
341	5	86	1	4500	1	20	1	1	1	2	20	30	7	20	180	2	1	1	1	7.43	0.63	1	0.5	0.25	1.36	0	0.32	4.95	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
342	5	86	1	4500	2	20	2	2	1	2	20	30	7	20	180	2	1	1	1	7.43	0.63	1	0.5	0.25	1.36	0	0.32	4.95	0
343	5	87	1	4500	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	7.43	0.63	1	1	0	1.38	1	0.63	0	0
344	5	87	1	4500	2	20	2	2	0	0	0	0	0	0	0	0	0	0	1	7.43	0.63	1	1	0	1.38	1	0.63	0	0
345	5	88	2	11000	1	50	1	1	1	1	20	30	7	0	12	2	1	0	1	18.2	0.63	1	0.5	0.02	1.36	0.37	0.32	0.13	0.01
346	5	88	2	11000	2	40	2	2	1	1	20	30	7	0	12	2	1	0	1	18.2	0.63	1	0.5	0.02	1.36	0.37	0.32	0.13	0.01
347	5	88	2	11000	3	10	2	4	1	1	20	30	7	0	12	2	1	0	0	18.2	0.63	1	0	0.02	0	0.37	0	1	0
348	5	89	1	4500	1	50	1	1	1	2	20	30	7	10	180	1	1	0.5	1	7.43	0.63	1	1	0.25	1.36	0.02	0.63	4.95	0.08
349	5	89	1	4500	2	35	2	2	1	2	20	30	7	10	180	1	1	0.5	1	7.43	0.63	1	1	0.25	1.36	0.02	0.63	4.95	0.08
350	5	90	1	4500	1	26	1	1	1	1	0	10	0	0	30	2	1	0	1	7.43	0.63	1	0.5	0.02	1.37	1	0.32	0.18	0.06
351	5	90	1	4500	2	20	2	2	1	1	0	10	0	0	30	2	1	0	1	7.43	0.63	1	0.5	0.02	1.37	1	0.32	0.18	0.06
352	5	91	1	2000	1	60	1	1	1	1	20	30	7	20	120	1	0	1	1	3.3	0.63	1	1	0.08	1.36	0	0.63	1.11	0
353	5	91	1	2000	2	40	2	2	1	1	20	30	7	20	120	1	0	1	1	3.3	0.63	1	1	0.08	1.36	0	0.63	1.11	0
354	5	92	1	3000	1	21	1	1	12	4	20	30	6	100	240	3	0	5	1	4.95	0.63	1	0.33	0.8	1.36	0	0.21	24	0
355	5	92	1	3000	2	20	2	2	12	4	20	30	6	100	240	3	0	5	1	4.95	0.63	1	0.33	0.8	1.36	0	0.21	24	0
356	5	93	1	5500	1	28	1	1	1	1	20	30	7	30	60	1	0	1.5	1	9.08	0.63	1	1	0.08	1.36	0	0.63	1.11	0
357	5	93	1	5500	2	20	2	2	1	1	20	30	7	30	60	1	0	1.5	1	9.08	0.63	1	1	0.08	1.36	0	0.63	1.11	0
358	5	94	1	3000	1	27	1	1	1	1	20	30	4	50	120	2	0	2.5	1	4.95	0.63	1	0.5	0.17	1.36	0	0.32	2.86	0
359	5	94	1	3000	2	20	2	2	1	1	20	30	4	50	120	2	0	2.5	1	4.95	0.63	1	0.5	0.17	1.36	0	0.32	2.86	0
360	5	95	1	4500	1	26	1	1	1	1	20	30	7	20	12	3	0	1	1	7.43	0.63	1	0.33	0.02	1.36	0	0.21	0.13	0
361	5	95	1	4500	2	20	2	2	1	1	20	30	7	20	12	3	0	1	1	7.43	0.63	1	0.33	0.02	1.36	0	0.21	0.13	0
362	5	96	2	5600	1	30	1	1	1	1	20	30	6	10	60	3	1	0.5	1	9.24	0.63	1	0.33	0.08	1.36	0.04	0.21	1.11	0.01
363	5	96	2	5600	2	21	2	2	1	1	20	30	6	10	60	3	1	0.5	1	9.24	0.63	1	0.33	0.08	1.36	0.04	0.21	1.11	0.01
364	5	96	2	5600	3	4	1	4	1	1	20	30	6	10	60	3	1	0.5	0	9.24	0.63	1	0	0.08	0	0.04	0	1	0
365	5	97	1	3500	1	27	1	1	1	2	20	30	7	10	120	2	0	0.5	1	5.78	0.63	1	0.5	0.67	1.36	0.01	0.32	18.8	0.07
366	5	97	1	3500	2	20	2	2	1	2	20	30	7	10	120	2	0	0.5	1	5.78	0.63	1	0.5	0.67	1.36	0.01	0.32	18.8	0.07
367	5	98	1	4000	1	33	1	1	1	2	20	30	7	10	120	2	1	0.5	1	6.6	0.63	1	0.5	0.67	1.36	0.02	0.32	18.8	0.11
368	5	98	1	4000	2	20	2	2	1	2	20	30	7	10	120	2	1	0.5	1	6.6	0.63	1	0.5	0.67	1.36	0.02	0.32	18.8	0.11
369	5	99	1	4500	1	30	1	1	1	1	20	30	7	20	60	2	0	1	1	7.43	0.63	1	0.5	0.25	1.36	0	0.32	4.95	0
370	5	99	1	4500	2	22	2	2	1	1	20	30	7	20	60	2	0	1	1	7.43	0.63	1	0.5	0.25	1.36	0	0.32	4.95	0
371	5	100	2	4000	1	28	1	1	1	2	20	30	7	15	180	1	1	0.75	1	6.6	0.63	1	1	0.25	1.36	0	0.63	4.95	0.01
372	5	100	2	4000	2	26	2	2	1	2	20	30	7	15	180	1	1	0.75	1	6.6	0.63	1	1	0.25	1.36	0	0.63	4.95	0.01
373	5	100	2	4000	3	5	2	4	1	2	20	30	7	15	180	1	1	0.75	0	6.6	0.63	1	0	0.25	0	0	0	1	0
												ACTIVITY=		HEALTH			4	<<CODE					start col(for hh data)=			57			
1	1	1	3	4000	1	65	1	1	1	1	0.5	0.5	5	100	60	2	2	200	1	6.6	0.82	1	0.5	1	1.38	0	0.41	37.8	0
2	1	1	3	4000	2	55	2	2	1	1	0.5	0.5	5	100	60	2	2	200	1	6.6	0.82	1	0.5	1	1.38	0	0.41	37.8	0
3	1	1	3	4000	3	25	2	3	1	1	0.5	0.5	5	100	60	2	2	200	1	6.6	0.82	1	0.5	1	1.38	0	0.41	37.8	0
4	1	1	3	4000	4	20	2	3	1	1	0.5	0.5	5	100	60	2	2	200	1	6.6	0.82	1	0.5	1	1.38	0	0.41	37.8	0
5	1	2	2	4000	1	35	1	1	1	3	0.5	15	4	25	15	3	3	50	1	6.6	0.82	1	0.33	1	1.37	0	0.27	35.2	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
6	1	2	2	4000	2	32	2	2	1	3	0.5	15	4	25	15	3	3	50	1	6.6	0.82	1	0.33	1	1.37	0	0.27	35.2	0
7	1	2	2	4000	3	11	1	4	1	3	0.5	15	4	25	15	3	3	50	1	6.6	0.82	1	0.33	1	1.37	0	0.27	35.2	0
8	1	2	2	4000	4	7	1	4	1	3	0.5	15	4	25	15	3	3	50	1	6.6	0.82	1	0.33	1	1.37	0	0.27	35.2	0
9	1	3	2	3900	1	40	1	1	1	4	1	0.3	2	0	60	2	2	0	1	6.44	0.82	1	0.5	1	1.38	0.99	0.41	37.9	15.3
10	1	3	2	3900	2	37	2	2	1	4	1	0.3	2	0	60	2	2	0	1	6.44	0.82	1	0.5	1	1.38	0.99	0.41	37.9	15.3
11	1	3	2	3900	3	13	1	4	1	4	1	0.3	2	0	60	2	2	0	1	6.44	0.82	1	0.5	1	1.38	0.99	0.41	37.9	15.3
12	1	3	2	3900	4	11	1	4	1	4	1	0.3	2	0	60	2	2	0	1	6.44	0.82	1	0.5	1	1.38	0.99	0.41	37.9	15.3
13	1	4	2	7000	1	43	1	1	12	0	0.5	15	0	0	60	4	4	0	1	11.6	0.82	1	0.25	1	1.37	0.61	0.2	35.2	4.37
14	1	4	2	7000	2	40	2	2	12	0	0.5	15	0	0	60	4	4	0	1	11.6	0.82	1	0.25	1	1.37	0.61	0.2	35.2	4.37
15	1	4	2	7000	3	14	1	4	12	0	0.5	15	0	0	60	4	4	0	1	11.6	0.82	1	0.25	1	1.37	0.61	0.2	35.2	4.37
16	1	4	2	7000	4	10	2	4	12	0	0.5	15	0	0	60	4	4	0	1	11.6	0.82	1	0.25	1	1.37	0.61	0.2	35.2	4.37
17	1	4	2	7000	5	8	1	4	12	0	0.5	15	0	0	60	4	4	0	1	11.6	0.82	1	0.25	1	1.37	0.61	0.2	35.2	4.37
18	1	4	2	7000	6	6	2	4	12	0	0.5	15	0	0	60	4	4	0	1	11.6	0.82	1	0.25	1	1.37	0.61	0.2	35.2	4.37
19	1	5	3	4000	1	64	1	1	1	4	0.5	15	2	0	15	1	1	0	1	6.6	0.82	1	1	1	1.37	0.61	0.82	35.2	17.5
20	1	5	3	4000	2	55	2	2	1	4	0.5	15	2	0	15	1	1	0	1	6.6	0.82	1	1	1	1.37	0.61	0.82	35.2	17.5
21	1	5	3	4000	3	15	1	3	1	4	0.5	15	2	0	15	1	1	0	1	6.6	0.82	1	1	1	1.37	0.61	0.82	35.2	17.5
22	1	6	2	4000	1	47	1	1	1	1	0.5	0	7	0	60	3	4	0	1	6.6	0.82	1	0.33	1	1.38	1	0.27	37.9	10.3
23	1	6	2	4000	2	40	2	2	1	1	0.5	0	7	0	60	3	4	0	1	6.6	0.82	1	0.33	1	1.38	1	0.27	37.9	10.3
24	1	6	2	4000	3	10	1	4	1	1	0.5	0	7	0	60	3	4	0	1	6.6	0.82	1	0.33	1	1.38	1	0.27	37.9	10.3
25	1	7	2	4300	1	35	1	1	1	1	0.5	15	4	25	60	2	2	50	1	7.1	0.82	1	0.5	1	1.37	0	0.41	35.2	0.01
26	1	7	2	4300	2	32	2	2	1	1	0.5	15	4	25	60	2	2	50	1	7.1	0.82	1	0.5	1	1.37	0	0.41	35.2	0.01
27	1	7	2	4300	3	12	2	4	1	1	0.5	15	4	25	60	2	2	50	1	7.1	0.82	1	0.5	1	1.37	0	0.41	35.2	0.01
28	1	7	2	4300	4	11	2	4	1	1	0.5	15	4	25	60	2	2	50	1	7.1	0.82	1	0.5	1	1.37	0	0.41	35.2	0.01
29	1	7	2	4300	5	10	2	4	1	1	0.5	15	4	25	60	2	2	50	1	7.1	0.82	1	0.5	1	1.37	0	0.41	35.2	0.01
30	1	8	4	3500	1	45	1	1	12	2	0.5	30	0	0	60	3	1	0	1	5.78	0.82	1	0.33	1	1.36	0.37	0.27	32.5	3.27
31	1	8	4	3500	2	43	2	2	12	2	0.5	30	0	0	60	3	1	0	1	5.78	0.82	1	0.33	1	1.36	0.37	0.27	32.5	3.27
32	1	8	4	3500	3	16	1	3	12	2	0.5	30	0	0	60	3	1	0	1	5.78	0.82	1	0.33	1	1.36	0.37	0.27	32.5	3.27
33	1	8	4	3500	4	14	1	4	12	2	0.5	30	0	0	60	3	1	0	1	5.78	0.82	1	0.33	1	1.36	0.37	0.27	32.5	3.27
34	1	8	4	3500	5	12	1	4	12	2	0.5	30	0	0	60	3	1	0	1	5.78	0.82	1	0.33	1	1.36	0.37	0.27	32.5	3.27
35	1	9	4	3500	1	38	1	1	1	1	1	30	2	0	60	3	3	0	1	5.78	0.82	1	0.33	1	1.36	0.37	0.27	32.5	3.27
36	1	9	4	3500	2	35	2	2	1	1	1	30	2	0	60	3	3	0	1	5.78	0.82	1	0.33	1	1.36	0.37	0.27	32.5	3.27
37	1	9	4	3500	3	15	1	3	1	1	1	30	2	0	60	3	3	0	1	5.78	0.82	1	0.33	1	1.36	0.37	0.27	32.5	3.27
38	1	9	4	3500	4	13	1	4	1	1	1	30	2	0	60	3	3	0	1	5.78	0.82	1	0.33	1	1.36	0.37	0.27	32.5	3.27
39	1	9	4	3500	5	7	2	4	1	1	1	30	2	0	60	3	3	0	1	5.78	0.82	1	0.33	1	1.36	0.37	0.27	32.5	3.27
40	1	10	2	5100	1	34	1	1	1	2	0.5	30	2	0	60	1	3	0	1	8.42	0.82	1	1	1	1.36	0.37	0.82	32.5	9.8
41	1	10	2	5100	2	32	2	2	1	2	0.5	30	2	0	60	1	3	0	1	8.42	0.82	1	1	1	1.36	0.37	0.82	32.5	9.8
42	1	10	2	5100	3	10	2	4	1	2	0.5	30	2	0	60	1	3	0	1	8.42	0.82	1	1	1	1.36	0.37	0.82	32.5	9.8
43	1	10	2	5100	4	6	1	4	1	2	0.5	30	2	0	60	1	3	0	1	8.42	0.82	1	1	1	1.36	0.37	0.82	32.5	9.8

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
44	1	11	2	6000	1	42	1	1	1	1	0.5	15	4	25	60	1	2	50	1	9.9	0.82	1	1	1	1.37	0	0.82	35.2	0.11
45	1	11	2	6000	2	40	2	2	1	1	0.5	15	4	25	60	1	2	50	1	9.9	0.82	1	1	1	1.37	0	0.82	35.2	0.11
46	1	11	2	6000	3	12	2	4	1	1	0.5	15	4	25	60	1	2	50	1	9.9	0.82	1	1	1	1.37	0	0.82	35.2	0.11
47	1	11	2	6000	4	9	1	4	1	1	0.5	15	4	25	60	1	2	50	1	9.9	0.82	1	1	1	1.37	0	0.82	35.2	0.11
48	1	12	2	3600	1	30	1	1	12	0	0.5	15	0	0	60	2	3	0	1	5.94	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
49	1	12	2	3600	2	29	1	2	12	0	0.5	15	0	0	60	2	3	0	1	5.94	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
50	1	12	2	3600	3	14	2	4	12	0	0.5	15	0	0	60	2	3	0	1	5.94	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
51	1	12	2	3600	4	11	2	4	12	0	0.5	15	0	0	60	2	3	0	1	5.94	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
52	1	12	2	3600	5	10	1	4	12	0	0.5	15	0	0	60	2	3	0	1	5.94	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
53	1	12	2	3600	6	9	1	4	12	0	0.5	15	0	0	60	2	3	0	1	5.94	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
54	1	13	2	3600	1	45	1	1	1	1	0	30	2	0	60	3	1	0	1	5.94	0.82	1	0.33	1	1.36	1	0.27	32.5	8.88
55	1	13	2	3600	2	40	2	2	1	1	0	30	2	0	60	3	1	0	1	5.94	0.82	1	0.33	1	1.36	1	0.27	32.5	8.88
56	1	13	2	3600	3	13	1	4	1	1	0	30	2	0	60	3	1	0	1	5.94	0.82	1	0.33	1	1.36	1	0.27	32.5	8.88
57	1	13	2	3600	4	9	2	4	1	1	0	30	2	0	60	3	1	0	1	5.94	0.82	1	0.33	1	1.36	1	0.27	32.5	8.88
58	1	13	2	3600	5	7	2	4	1	1	0	30	2	0	60	3	1	0	1	5.94	0.82	1	0.33	1	1.36	1	0.27	32.5	8.88
59	1	14	2	3000	1	32	1	1	12	4	0.5	15	5	0	60	2	2	0	1	4.95	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
60	1	14	2	3000	2	30	2	2	12	4	0.5	15	5	0	60	2	2	0	1	4.95	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
61	1	14	2	3000	3	11	1	4	12	4	0.5	15	5	0	60	2	2	0	1	4.95	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
62	1	14	2	3000	4	10	1	4	12	4	0.5	15	5	0	60	2	2	0	1	4.95	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
63	1	14	2	3000	5	9	2	4	12	4	0.5	15	5	0	60	2	2	0	1	4.95	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
64	1	15	4	6000	1	47	1	1	1	1	0.5	15	2	0	120	2	1	0	1	9.9	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
65	1	15	4	6000	2	45	2	2	1	1	0.5	15	2	0	120	2	1	0	1	9.9	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
66	1	15	4	6000	3	19	1	3	1	1	0.5	15	2	0	120	2	1	0	1	9.9	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
67	1	15	4	6000	4	13	1	4	1	1	0.5	15	2	0	120	2	1	0	1	9.9	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
68	1	15	4	6000	5	9	2	4	1	1	0.5	15	2	0	120	2	1	0	1	9.9	0.82	1	0.5	1	1.37	0.61	0.41	35.2	8.74
69	1	16	4	3700	1	38	1	1	1	1	0.5	30	4	15	60	4	3	30	1	6.11	0.82	1	0.25	1	1.36	0	0.2	32.5	0.02
70	1	16	4	3700	2	38	2	2	1	1	0.5	30	4	15	60	4	3	30	1	6.11	0.82	1	0.25	1	1.36	0	0.2	32.5	0.02
71	1	16	4	3700	3	16	1	3	1	1	0.5	30	4	15	60	4	3	30	1	6.11	0.82	1	0.25	1	1.36	0	0.2	32.5	0.02
72	1	16	4	3700	4	12	2	4	1	1	0.5	30	4	15	60	4	3	30	1	6.11	0.82	1	0.25	1	1.36	0	0.2	32.5	0.02
73	1	16	4	3700	5	10	1	4	1	1	0.5	30	4	15	60	4	3	30	1	6.11	0.82	1	0.25	1	1.36	0	0.2	32.5	0.02
74	1	16	4	3700	6	9	1	4	1	1	0.5	30	4	15	60	4	3	30	1	6.11	0.82	1	0.25	1	1.36	0	0.2	32.5	0.02
75	1	17	2	3000	1	30	1	1	1	3	0.5	15	2	0	30	4	2	0	1	4.95	0.82	1	0.25	1	1.37	0.61	0.2	35.2	4.37
76	1	17	2	3000	2	28	2	2	1	3	0.5	15	2	0	30	4	2	0	1	4.95	0.82	1	0.25	1	1.37	0.61	0.2	35.2	4.37
77	1	17	2	3000	3	13	1	4	1	3	0.5	15	2	0	30	4	2	0	1	4.95	0.82	1	0.25	1	1.37	0.61	0.2	35.2	4.37
78	1	17	2	3000	4	11	1	4	1	3	0.5	15	2	0	30	4	2	0	1	4.95	0.82	1	0.25	1	1.37	0.61	0.2	35.2	4.37
79	1	18	4	9500	1	58	1	1	1	2	0.5	15	5	5	60	2	1	10	1	15.7	0.82	1	0.5	1	1.37	0.32	0.41	35.2	4.62
80	1	18	4	9500	2	45	2	2	1	2	0.5	15	5	5	60	2	1	10	1	15.7	0.82	1	0.5	1	1.37	0.32	0.41	35.2	4.62
81	1	18	4	9500	3	20	1	3	1	2	0.5	15	5	5	60	2	1	10	1	15.7	0.82	1	0.5	1	1.37	0.32	0.41	35.2	4.62

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
82	1	18	4	9500	4	19	1	3	1	2	0.5	15	5	5	60	2	1	10	1	15.7	0.82	1	0.5	1	1.37	0.32	0.41	35.2	4.62
83	1	18	4	9500	5	14	2	4	1	2	0.5	15	5	5	60	2	1	10	1	15.7	0.82	1	0.5	1	1.37	0.32	0.41	35.2	4.62
84	1	19	2	3000	1	35	1	1	1	2	0.5	30	0	0	60	1	1	0	1	4.95	0.82	1	1	1	1.36	0.37	0.82	32.5	9.8
85	1	19	2	3000	2	34	2	2	1	2	0.5	30	0	0	60	1	1	0	1	4.95	0.82	1	1	1	1.36	0.37	0.82	32.5	9.8
86	1	19	2	3000	3	14	2	4	1	2	0.5	30	0	0	60	1	1	0	1	4.95	0.82	1	1	1	1.36	0.37	0.82	32.5	9.8
87	1	19	2	3000	4	13	2	4	1	2	0.5	30	0	0	60	1	1	0	1	4.95	0.82	1	1	1	1.36	0.37	0.82	32.5	9.8
88	1	19	2	3000	5	12	1	4	1	2	0.5	30	0	0	60	1	1	0	1	4.95	0.82	1	1	1	1.36	0.37	0.82	32.5	9.8
89	1	19	2	3000	6	11	1	4	1	2	0.5	30	0	0	60	1	1	0	1	4.95	0.82	1	1	1	1.36	0.37	0.82	32.5	9.8
90	1	20	2	3300	1	36	1	1	1	1	0.5	15	0	0	30	3	2	0	1	5.45	0.82	1	0.33	1	1.37	0.61	0.27	35.2	5.82
91	1	20	2	3300	2	35	2	2	1	1	0.5	15	0	0	30	3	2	0	1	5.45	0.82	1	0.33	1	1.37	0.61	0.27	35.2	5.82
92	1	20	2	3300	3	6	2	4	1	1	0.5	15	0	0	30	3	2	0	1	5.45	0.82	1	0.33	1	1.37	0.61	0.27	35.2	5.82
93	1	20	2	3300	4	5	2	4	1	1	0.5	15	0	0	30	3	2	0	1	5.45	0.82	1	0.33	1	1.37	0.61	0.27	35.2	5.82
94	2	21	2	12000	1	45	1	1	1	4	8	15	6	0	720	1	1	0	1	19.8	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
95	2	21	2	12000	2	27	2	2	1	4	8	15	6	0	720	1	1	0	1	19.8	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
96	2	21	2	12000	3	8	1	4	1	4	8	15	6	0	720	1	1	0	1	19.8	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
97	2	21	2	12000	4	6	1	4	1	4	8	15	6	0	720	1	1	0	1	19.8	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
98	2	21	2	12000	5	4	1	4	1	4	8	15	6	0	720	1	1	0	1	19.8	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
99	2	22	2	2000	1	32	1	1	1	4	0	10	0	0	180	2	1	0	1	3.3	0.37	0.2	0.5	1	1.37	1	0.04	36.1	1.33
100	2	22	2	2000	2	28	2	2	1	4	0	10	0	0	180	2	1	0	1	3.3	0.37	0.2	0.5	1	1.37	1	0.04	36.1	1.33
101	2	22	2	2000	3	6	1	4	1	4	0	10	0	0	180	2	1	0	1	3.3	0.37	0.2	0.5	1	1.37	1	0.04	36.1	1.33
102	2	23	2	7000	1	35	1	1	13	4	0	10	0	5	120	3	1	0	1	11.6	0.37	0.2	0.33	1	1.37	1	0.02	36.1	0.88
103	2	23	2	7000	2	30	2	2	13	4	0	10	0	5	120	3	1	0	1	11.6	0.37	0.2	0.33	1	1.37	1	0.02	36.1	0.88
104	2	23	2	7000	3	6	2	4	13	4	0	10	0	5	120	3	1	0	1	11.6	0.37	0.2	0.33	1	1.37	1	0.02	36.1	0.88
105	2	23	2	7000	4	4	2	4	13	4	0	10	0	5	120	3	1	0	1	11.6	0.37	0.2	0.33	1	1.37	1	0.02	36.1	0.88
106	2	24	2	4500	1	34	1	1	23	4	0	15	0	0	30	3	1	0	1	7.43	0.37	0.2	0.33	1	1.37	1	0.02	35.2	0.86
107	2	24	2	4500	2	35	2	2	23	4	0	15	0	0	30	3	1	0	1	7.43	0.37	0.2	0.33	1	1.37	1	0.02	35.2	0.86
108	2	24	2	4500	3	4	2	4	23	4	0	15	0	0	30	3	1	0	1	7.43	0.37	0.2	0.33	1	1.37	1	0.02	35.2	0.86
109	2	24	2	4500	4	2	2	4	23	4	0	15	0	0	30	3	1	0	1	7.43	0.37	0.2	0.33	1	1.37	1	0.02	35.2	0.86
110	2	24	2	4500	5	1	1	4	23	4	0	15	0	0	30	3	1	0	1	7.43	0.37	0.2	0.33	1	1.37	1	0.02	35.2	0.86
111	2	25	2	3000	1	30	1	1	24	4	0	10	0	5	60	0	1	0	1	4.95	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
112	2	25	2	3000	2	23	2	2	24	4	0	10	0	5	60	0	1	0	1	4.95	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
113	2	25	2	3000	3	8	1	4	24	4	0	10	0	5	60	0	1	0	1	4.95	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
114	2	25	2	3000	4	6	2	4	24	4	0	10	0	5	60	0	1	0	1	4.95	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
115	2	26	1	4500	1	45	1	1	12	4	0	10	0	0	60	0	1	0	1	7.43	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
116	2	26	1	4500	2	30	2	2	12	4	0	10	0	0	60	0	1	0	1	7.43	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
117	2	27	2	2000	1	53	1	1	1	4	0	10	0	0	30	0	1	0	1	3.3	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
118	2	27	2	2000	2	35	2	2	1	4	0	10	0	0	30	0	1	0	1	3.3	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
119	2	27	2	2000	3	13	2	4	1	4	0	10	0	0	30	0	1	0	1	3.3	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
120	2	27	2	2000	4	10	1	4	1	4	0	10	0	0	30	0	1	0	1	3.3	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
121	2	28	1	2000	1	50	1	1	12	4	0	10	0	0	30	0	1	0	1	3.3	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
122	2	28	1	2000	2	35	2	2	12	4	0	10	0	0	30	0	1	0	1	3.3	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
123	2	29	2	5000	1	36	1	1	15	4	0	5	0	0	30	0	1	0	1	8.25	0.37	0.2	1	1	1.37	1	0.07	37	2.72
124	2	29	2	5000	2	25	2	2	15	4	0	5	0	0	30	0	1	0	1	8.25	0.37	0.2	1	1	1.37	1	0.07	37	2.72
125	2	29	2	5000	3	13	2	4	15	4	0	5	0	0	30	0	1	0	1	8.25	0.37	0.2	1	1	1.37	1	0.07	37	2.72
126	2	29	2	5000	4	5	2	4	15	4	0	5	0	0	30	0	1	0	1	8.25	0.37	0.2	1	1	1.37	1	0.07	37	2.72
127	2	29	2	5000	5	3	1	4	15	4	0	5	0	0	30	0	1	0	1	8.25	0.37	0.2	1	1	1.37	1	0.07	37	2.72
128	2	30	1	3000	1	39	1	1	1	4	0	10	0	0	60	0	1	0	1	4.95	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
129	2	30	1	3000	2	30	2	2	1	4	0	10	0	0	60	0	1	0	1	4.95	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
130	2	31	2	3000	1	38	1	1	14	4	0	10	0	0	30	0	1	0	1	4.95	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
131	2	31	2	3000	2	36	2	2	14	4	0	10	0	0	30	0	1	0	1	4.95	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
132	2	31	2	3000	3	5	1	4	14	4	0	10	0	0	30	0	1	0	1	4.95	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
133	2	31	2	3000	4	3	1	4	14	4	0	10	0	0	30	0	1	0	1	4.95	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
134	2	32	2	5000	1	34	1	1	24	4	0	10	0	0	60	2	1	0	1	8.25	0.37	0.2	0.5	1	1.37	1	0.04	36.1	1.33
135	2	32	2	5000	2	25	2	2	24	4	0	10	0	0	60	2	1	0	1	8.25	0.37	0.2	0.5	1	1.37	1	0.04	36.1	1.33
136	2	32	2	5000	3	5	2	4	24	4	0	10	0	0	60	2	1	0	1	8.25	0.37	0.2	0.5	1	1.37	1	0.04	36.1	1.33
137	2	32	2	5000	4	3	1	4	24	4	0	10	0	0	60	2	1	0	1	8.25	0.37	0.2	0.5	1	1.37	1	0.04	36.1	1.33
138	2	33	2	6000	1	39	1	1	14	4	0	5	0	0	30	0	1	0	1	9.9	0.37	0.2	1	1	1.37	1	0.07	37	2.72
139	2	33	2	6000	2	30	2	2	14	4	0	5	0	0	30	0	1	0	1	9.9	0.37	0.2	1	1	1.37	1	0.07	37	2.72
140	2	33	2	6000	3	2	2	4	14	4	0	5	0	0	30	0	1	0	1	9.9	0.37	0.2	1	1	1.37	1	0.07	37	2.72
141	2	33	2	6000	4	1	1	4	14	4	0	5	0	0	30	0	1	0	1	9.9	0.37	0.2	1	1	1.37	1	0.07	37	2.72
142	2	34	1	10000	1	34	1	1	12	4	0	5	0	5	60	0	1	0	1	16.5	0.37	0.2	1	1	1.37	1	0.07	37	2.72
143	2	34	1	10000	2	25	2	2	12	4	0	5	0	5	60	0	1	0	1	16.5	0.37	0.2	1	1	1.37	1	0.07	37	2.72
144	2	35	2	3500	1	32	1	1	23	4	0	10	0	0	30	1	1	0	1	5.78	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
145	2	35	2	3500	2	25	2	2	23	4	0	10	0	0	30	1	1	0	1	5.78	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
146	2	35	2	3500	3	7	2	4	23	4	0	10	0	0	30	1	1	0	1	5.78	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
147	2	36	2	10000	1	38	1	1	13	4	0	5	4	0	15	1	1	0	1	16.5	0.37	0.2	1	1	1.37	1	0.07	37	2.72
148	2	36	2	10000	2	28	2	2	13	4	0	5	4	0	15	1	1	0	1	16.5	0.37	0.2	1	1	1.37	1	0.07	37	2.72
149	2	36	2	10000	3	1	1	4	13	4	0	5	4	0	15	1	1	0	1	16.5	0.37	0.2	1	1	1.37	1	0.07	37	2.72
150	2	37	2	4500	1	35	1	1	23	4	0	10	0	0	60	1	1	0	1	7.43	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
151	2	37	2	4500	2	21	2	2	23	4	0	10	0	0	60	1	1	0	1	7.43	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
152	2	37	2	4500	3	1	2	4	23	4	0	10	0	0	60	1	1	0	1	7.43	0.37	0.2	1	1	1.37	1	0.07	36.1	2.65
153	2	38	2	4500	1	36	1	1	12	4	0	5	0	0	30	2	1	0	1	7.43	0.37	0.2	0.5	1	1.37	1	0.04	37	1.36
154	2	38	2	4500	2	27	2	2	12	4	0	5	0	0	30	2	1	0	1	7.43	0.37	0.2	0.5	1	1.37	1	0.04	37	1.36
155	2	38	2	4500	3	8	2	4	12	4	0	5	0	0	30	2	1	0	1	7.43	0.37	0.2	0.5	1	1.37	1	0.04	37	1.36
156	2	39	2	10000	1	38	1	1	14	4	0	10	0	0	60	2	1	0	1	16.5	0.37	0.2	0.5	1	1.37	1	0.04	36.1	1.33
157	2	39	2	10000	2	32	2	2	14	4	0	10	0	0	60	2	1	0	1	16.5	0.37	0.2	0.5	1	1.37	1	0.04	36.1	1.33

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
158	2	39	2	10000	3	9	2	4	14	4	0	10	0	0	60	2	1	0	1	16.5	0.37	0.2	0.5	1	1.37	1	0.04	36.1	1.33
159	2	39	2	10000	4	7	1	4	14	4	0	10	0	0	60	2	1	0	1	16.5	0.37	0.2	0.5	1	1.37	1	0.04	36.1	1.33
160	2	40	2	4500	1	36	1	1	13	4	0	15	0	0	60	1	1	0	1	7.43	0.37	0.2	1	1	1.37	1	0.07	35.2	2.59
161	2	40	2	4500	2	26	2	2	13	4	0	15	0	0	60	1	1	0	1	7.43	0.37	0.2	1	1	1.37	1	0.07	35.2	2.59
162	2	40	2	4500	3	4	2	4	13	4	0	15	0	0	60	1	1	0	1	7.43	0.37	0.2	1	1	1.37	1	0.07	35.2	2.59
163	3	41	2	3500	1	50	1	1	1	2	0.5	15	2	0	15	1	1	0	1	5.78	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
164	3	41	2	3500	2	47	2	2	1	2	0.5	15	2	0	15	1	1	0	1	5.78	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
165	3	41	2	3500	3	14	1	4	1	2	0.5	15	2	0	15	1	1	0	1	5.78	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
166	3	41	2	3500	4	10	1	4	1	2	0.5	15	2	0	15	1	1	0	1	5.78	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
167	3	42	4	4000	1	44	1	1	1	2	0.5	10	7	10	60	2	2	20	1	6.6	0.37	0.2	0.5	1	1.37	0.03	0.04	36.1	0.05
168	3	42	4	4000	2	43	2	2	1	2	0.5	10	7	10	60	2	2	20	1	6.6	0.37	0.2	0.5	1	1.37	0.03	0.04	36.1	0.05
169	3	42	4	4000	3	19	1	3	1	2	0.5	10	7	10	60	2	2	20	1	6.6	0.37	0.2	0.5	1	1.37	0.03	0.04	36.1	0.05
170	3	42	4	4000	4	16	1	3	1	2	0.5	10	7	10	60	2	2	20	1	6.6	0.37	0.2	0.5	1	1.37	0.03	0.04	36.1	0.05
171	3	42	4	4000	5	8	1	4	1	2	0.5	10	7	10	60	2	2	20	1	6.6	0.37	0.2	0.5	1	1.37	0.03	0.04	36.1	0.05
172	3	43	2	4500	1	37	1	1	1	2	0.5	15	0	0	30	1	2	0	1	7.43	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
173	3	43	2	4500	2	36	2	2	1	2	0.5	15	0	0	30	1	2	0	1	7.43	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
174	3	43	2	4500	3	11	1	4	1	2	0.5	15	0	0	30	1	2	0	1	7.43	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
175	3	43	2	4500	4	8	1	4	1	2	0.5	15	0	0	30	1	2	0	1	7.43	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
176	3	44	4	1500	1	47	1	1	14	2	10	10	4	10	30	2	0	1	1	2.48	0.37	0.2	0.5	1	1.37	0	0.04	36.1	0
177	3	44	4	1500	2	45	2	2	14	2	10	10	4	10	30	2	0	1	1	2.48	0.37	0.2	0.5	1	1.37	0	0.04	36.1	0
178	3	44	4	1500	3	21	1	3	14	2	10	10	4	10	30	2	0	1	1	2.48	0.37	0.2	0.5	1	1.37	0	0.04	36.1	0
179	3	44	4	1500	4	19	1	3	14	2	10	10	4	10	30	2	0	1	1	2.48	0.37	0.2	0.5	1	1.37	0	0.04	36.1	0
180	3	44	4	1500	5	12	1	4	14	2	10	10	4	10	30	2	0	1	1	2.48	0.37	0.2	0.5	1	1.37	0	0.04	36.1	0
181	3	45	2	4000	1	28	1	1	1	2	0.5	15	0	0	30	2	2	0	1	6.6	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
182	3	45	2	4000	2	25	2	2	1	2	0.5	15	0	0	30	2	2	0	1	6.6	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
183	3	45	2	4000	3	5	2	4	1	2	0.5	15	0	0	30	2	2	0	1	6.6	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
184	3	46	2	3500	1	40	1	1	1	2	0.5	15	2	0	60	2	3	0	1	5.78	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
185	3	46	2	3500	2	40	2	2	1	2	0.5	15	2	0	60	2	3	0	1	5.78	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
186	3	46	2	3500	3	12	1	4	1	2	0.5	15	2	0	60	2	3	0	1	5.78	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
187	3	46	2	3500	4	11	1	4	1	2	0.5	15	2	0	60	2	3	0	1	5.78	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
188	3	46	2	3500	5	10	2	4	1	2	0.5	15	2	0	60	2	3	0	1	5.78	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
189	3	46	2	3500	6	8	2	4	1	2	0.5	15	2	0	60	2	3	0	1	5.78	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
190	3	47	2	6000	1	38	1	1	1	2	0.5	15	0	0	60	2	2	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
191	3	47	2	6000	2	35	2	2	1	2	0.5	15	0	0	60	2	2	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
192	3	47	2	6000	3	14	1	4	1	2	0.5	15	0	0	60	2	2	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
193	3	47	2	6000	4	8	2	4	1	2	0.5	15	0	0	60	2	2	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
194	3	48	4	5000	1	35	1	1	3	1	0.5	10	0	0	60	2	2	0	1	8.25	0.37	0.2	0.5	1	1.37	0.72	0.04	36.1	0.95
195	3	48	4	5000	2	33	2	2	3	1	0.5	10	0	0	60	2	2	0	1	8.25	0.37	0.2	0.5	1	1.37	0.72	0.04	36.1	0.95

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
196	3	48	4	5000	3	17	1	3	3	1	0.5	10	0	0	60	2	2	0	1	8.25	0.37	0.2	0.5	1	1.37	0.72	0.04	36.1	0.95
197	3	48	4	5000	4	14	1	4	3	1	0.5	10	0	0	60	2	2	0	1	8.25	0.37	0.2	0.5	1	1.37	0.72	0.04	36.1	0.95
198	3	48	4	5000	5	9	2	4	3	1	0.5	10	0	0	60	2	2	0	1	8.25	0.37	0.2	0.5	1	1.37	0.72	0.04	36.1	0.95
199	3	48	4	5000	6	7	2	4	3	1	0.5	10	0	0	60	2	2	0	1	8.25	0.37	0.2	0.5	1	1.37	0.72	0.04	36.1	0.95
200	3	49	2	6000	1	38	1	1	1	2	0.5	15	0	0	60	2	4	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
201	3	49	2	6000	2	35	2	2	1	2	0.5	15	0	0	60	2	4	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
202	3	49	2	6000	3	12	1	4	1	2	0.5	15	0	0	60	2	4	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
203	3	50	2	7000	1	29	1	1	1	2	0.5	5	4	5	5	1	1	10	1	11.6	0.37	0.2	1	1	1.37	0.36	0.07	37	0.97
204	3	50	2	7000	2	25	2	2	1	2	0.5	5	4	5	5	1	1	10	1	11.6	0.37	0.2	1	1	1.37	0.36	0.07	37	0.97
205	3	50	2	7000	3	9	2	4	1	2	0.5	5	4	5	5	1	1	10	1	11.6	0.37	0.2	1	1	1.37	0.36	0.07	37	0.97
206	3	50	2	7000	4	7	1	4	1	2	0.5	5	4	5	5	1	1	10	1	11.6	0.37	0.2	1	1	1.37	0.36	0.07	37	0.97
207	3	51	2	15000	1	45	1	1	1	2	0.5	5	4	5	30	2	1	10	1	24.8	0.37	0.2	0.5	1	1.37	0.57	0.04	37	0.77
208	3	51	2	15000	2	45	2	2	1	2	0.5	5	4	5	30	2	1	10	1	24.8	0.37	0.2	0.5	1	1.37	0.57	0.04	37	0.77
209	3	51	2	15000	3	8	1	4	1	2	0.5	5	4	5	30	2	1	10	1	24.8	0.37	0.2	0.5	1	1.37	0.57	0.04	37	0.77
210	3	51	2	15000	4	5	1	4	1	2	0.5	5	4	5	30	2	1	10	1	24.8	0.37	0.2	0.5	1	1.37	0.57	0.04	37	0.77
211	3	52	2	3000	1	36	1	1	1	2	0.5	15	0	0	60	2	2	0	1	4.95	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
212	3	52	2	3000	2	35	2	2	1	2	0.5	15	0	0	60	2	2	0	1	4.95	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
213	3	52	2	3000	3	13	1	4	1	2	0.5	15	0	0	60	2	2	0	1	4.95	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
214	3	53	4	6000	1	45	1	1	13	1	0.5	15	0	0	60	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
215	3	53	4	6000	2	43	2	2	13	1	0.5	15	0	0	60	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
216	3	53	4	6000	3	22	1	3	13	1	0.5	15	0	0	60	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
217	3	53	4	6000	4	20	2	3	13	1	0.5	15	0	0	60	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
218	3	53	4	6000	5	18	1	3	13	1	0.5	15	0	0	60	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
219	3	53	4	6000	6	14	1	4	13	1	0.5	15	0	0	60	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
220	3	53	4	6000	7	13	2	4	13	1	0.5	15	0	0	60	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
221	3	53	4	6000	8	12	2	4	13	1	0.5	15	0	0	60	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
222	3	53	4	6000	9	11	2	4	13	1	0.5	15	0	0	60	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
223	3	53	4	6000	10	10	1	4	13	1	0.5	15	0	0	60	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
224	3	54	4	6000	1	55	1	1	12	2	0.5	15	0	0	15	2	2	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
225	3	54	4	6000	2	51	2	2	12	2	0.5	15	0	0	15	2	2	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
226	3	54	4	6000	3	17	2	3	12	2	0.5	15	0	0	15	2	2	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
227	3	54	4	6000	4	15	1	3	12	2	0.5	15	0	0	15	2	2	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
228	3	54	4	6000	5	14	1	4	12	2	0.5	15	0	0	15	2	2	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
229	3	54	4	6000	6	10	2	4	12	2	0.5	15	0	0	15	2	2	0	1	9.9	0.37	0.2	0.5	1	1.37	0.61	0.04	35.2	0.78
230	3	55	2	4500	1	37	1	1	12	2	0.5	30	0	0	60	2	1	0	1	7.43	0.37	0.2	0.5	1	1.36	0.37	0.04	32.5	0.44
231	3	55	2	4500	2	36	2	2	12	2	0.5	30	0	0	60	2	1	0	1	7.43	0.37	0.2	0.5	1	1.36	0.37	0.04	32.5	0.44
232	3	55	2	4500	3	7	1	4	12	2	0.5	30	0	0	60	2	1	0	1	7.43	0.37	0.2	0.5	1	1.36	0.37	0.04	32.5	0.44
233	3	56	2	4000	1	40	1	1	1	2	1	30	0	0	60	2	1	0	1	6.6	0.37	0.2	0.5	1	1.36	0.37	0.04	32.5	0.44

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
234	3	56	2	4000	2	40	2	2	1	2	1	30	0	0	60	2	1	0	1	6.6	0.37	0.2	0.5	1	1.36	0.37	0.04	32.5	0.44
235	3	56	2	4000	3	13	2	4	1	2	1	30	0	0	60	2	1	0	1	6.6	0.37	0.2	0.5	1	1.36	0.37	0.04	32.5	0.44
236	3	56	2	4000	4	12	1	4	1	2	1	30	0	0	60	2	1	0	1	6.6	0.37	0.2	0.5	1	1.36	0.37	0.04	32.5	0.44
237	3	56	2	4000	5	8	1	4	1	2	1	30	0	0	60	2	1	0	1	6.6	0.37	0.2	0.5	1	1.36	0.37	0.04	32.5	0.44
238	3	56	2	4000	6	6	2	4	1	2	1	30	0	0	60	2	1	0	1	6.6	0.37	0.2	0.5	1	1.36	0.37	0.04	32.5	0.44
239	3	57	2	4500	1	40	1	1	1	2	0.5	20	0	0	30	2	1	0	1	7.43	0.37	0.2	0.5	1	1.36	0.51	0.04	34.3	0.65
240	3	57	2	4500	2	38	2	2	1	2	0.5	20	0	0	30	2	1	0	1	7.43	0.37	0.2	0.5	1	1.36	0.51	0.04	34.3	0.65
241	3	57	2	4500	3	13	2	4	1	2	0.5	20	0	0	30	2	1	0	1	7.43	0.37	0.2	0.5	1	1.36	0.51	0.04	34.3	0.65
242	3	57	2	4500	4	9	1	4	1	2	0.5	20	0	0	30	2	1	0	1	7.43	0.37	0.2	0.5	1	1.36	0.51	0.04	34.3	0.65
243	3	58	2	450	1	50	1	1	1	2	0.5	10	0	0	130	2	2	0	1	0.74	0.37	0.2	0.5	1	1.37	0.72	0.04	36.1	0.95
244	3	58	2	450	2	48	2	2	1	2	0.5	10	0	0	130	2	2	0	1	0.74	0.37	0.2	0.5	1	1.37	0.72	0.04	36.1	0.95
245	3	58	2	450	3	14	1	4	1	2	0.5	10	0	0	130	2	2	0	1	0.74	0.37	0.2	0.5	1	1.37	0.72	0.04	36.1	0.95
246	3	58	2	450	4	10	2	4	1	2	0.5	10	0	0	130	2	2	0	1	0.74	0.37	0.2	0.5	1	1.37	0.72	0.04	36.1	0.95
247	3	59	2	6000	1	43	1	1	12	2	0.5	15	0	0	30	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
248	3	59	2	6000	2	40	2	2	12	2	0.5	15	0	0	30	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
249	3	59	2	6000	3	13	1	4	12	2	0.5	15	0	0	30	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
250	3	59	2	6000	4	10	2	4	12	2	0.5	15	0	0	30	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
251	3	59	2	6000	5	9	1	4	12	2	0.5	15	0	0	30	1	1	0	1	9.9	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
252	3	60	2	4000	1	36	1	1	12	2	0.5	15	0	0	60	1	1	0	1	6.6	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
253	3	60	2	4000	2	33	2	2	12	2	0.5	15	0	0	60	1	1	0	1	6.6	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
254	3	60	2	4000	3	13	2	4	12	2	0.5	15	0	0	60	1	1	0	1	6.6	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
255	3	60	2	4000	4	12	2	4	12	2	0.5	15	0	0	60	1	1	0	1	6.6	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
256	3	60	2	4000	5	11	1	4	12	2	0.5	15	0	0	60	1	1	0	1	6.6	0.37	0.2	1	1	1.37	0.61	0.07	35.2	1.57
257	4	61	2	3655	1	38	1	1	24	4	12	42	7	24	120	0	1	2	1	6.03	0.22	0.13	1	1	1.35	0	0.03	30.5	0
258	4	61	2	3655	2	30	2	2	24	4	12	42	7	24	120	0	1	2	1	6.03	0.22	0.13	1	1	1.35	0	0.03	30.5	0
259	4	61	2	3655	3	6	1	4	24	4	12	42	7	24	120	0	1	2	1	6.03	0.22	0.13	1	1	1.35	0	0.03	30.5	0
260	4	61	2	3655	4	4	1	4	24	4	12	42	7	24	120	0	1	2	1	6.03	0.22	0.13	1	1	1.35	0	0.03	30.5	0
261	4	61	2	3655	5	3	2	4	24	4	12	42	7	24	120	0	1	2	1	6.03	0.22	0.13	1	1	1.35	0	0.03	30.5	0
262	4	62	2	3300	1	25	1	1	23	4	25	10	0	0	30	0	1	0	1	5.45	0.22	0.13	1	1	1.37	0.72	0.03	36.1	0.77
263	4	62	2	3300	2	22	2	2	23	4	25	10	0	0	30	0	1	0	1	5.45	0.22	0.13	1	1	1.37	0.72	0.03	36.1	0.77
264	4	62	2	3300	3	3	2	4	23	4	25	10	0	0	30	0	1	0	1	5.45	0.22	0.13	1	1	1.37	0.72	0.03	36.1	0.77
265	4	63	2	3000	1	32	1	1	24	4	12	42	7	24	120	0	1	2	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.5	0
266	4	63	2	3000	2	27	2	2	24	4	12	42	7	24	120	0	1	2	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.5	0
267	4	63	2	3000	3	4	1	4	24	4	12	42	7	24	120	0	1	2	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.5	0
268	4	64	4	3000	1	60	1	1	24	4	12	42	7	24	120	0	1	2	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.5	0
269	4	64	4	3000	2	40	2	2	24	4	12	42	7	24	120	0	1	2	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.5	0
270	4	64	4	3000	3	18	1	3	24	4	12	42	7	24	120	0	1	2	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.5	0
271	4	64	4	3000	4	15	1	3	24	4	12	42	7	24	120	0	1	2	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.5	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
272	4	64	4	3000	5	6	2	4	24	4	12	42	7	24	120	0	1	2	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.5	0
273	4	64	4	3000	6	4	1	4	24	4	12	42	7	24	120	0	1	2	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.5	0
274	4	65	2	2400	1	30	1	1	23	4	25	10	0	0	30	0	1	0	1	3.96	0.22	0.13	1	1	1.37	0.72	0.03	36.1	0.77
275	4	65	2	2400	2	30	2	2	23	4	25	10	0	0	30	0	1	0	1	3.96	0.22	0.13	1	1	1.37	0.72	0.03	36.1	0.77
276	4	65	2	2400	3	8	1	4	23	4	25	10	0	0	30	0	1	0	1	3.96	0.22	0.13	1	1	1.37	0.72	0.03	36.1	0.77
277	4	65	2	2400	4	6	1	4	23	4	25	10	0	0	30	0	1	0	1	3.96	0.22	0.13	1	1	1.37	0.72	0.03	36.1	0.77
278	4	65	2	2400	5	3	2	4	23	4	25	10	0	0	30	0	1	0	1	3.96	0.22	0.13	1	1	1.37	0.72	0.03	36.1	0.77
279	4	66	2	1500	1	38	1	1	23	4	25	10	0	0	30	0	1	0	1	2.48	0.22	0.13	1	1	1.37	0.72	0.03	36.1	0.77
280	4	66	2	1500	2	30	2	2	23	4	25	10	0	0	30	0	1	0	1	2.48	0.22	0.13	1	1	1.37	0.72	0.03	36.1	0.77
281	4	66	2	1500	3	4	1	4	23	4	25	10	0	0	30	0	1	0	1	2.48	0.22	0.13	1	1	1.37	0.72	0.03	36.1	0.77
282	4	67	4	4000	1	40	1	1	1	4	12	40	7	20	120	0	0	1.67	1	6.6	0.22	0.13	1	1	1.35	0	0.03	30.8	0
283	4	67	4	4000	2	35	2	2	1	4	12	40	7	20	120	0	0	1.67	1	6.6	0.22	0.13	1	1	1.35	0	0.03	30.8	0
284	4	67	4	4000	3	16	1	3	1	4	12	40	7	20	120	0	0	1.67	1	6.6	0.22	0.13	1	1	1.35	0	0.03	30.8	0
285	4	67	4	4000	4	14	1	4	1	4	12	40	7	20	120	0	0	1.67	1	6.6	0.22	0.13	1	1	1.35	0	0.03	30.8	0
286	4	67	4	4000	5	11	2	4	1	4	12	40	7	20	120	0	0	1.67	1	6.6	0.22	0.13	1	1	1.35	0	0.03	30.8	0
287	4	67	4	4000	6	8	2	4	1	4	12	40	7	20	120	0	0	1.67	1	6.6	0.22	0.13	1	1	1.35	0	0.03	30.8	0
288	4	68	2	3600	1	30	1	1	1	4	12	40	7	20	120	0	0	1.67	1	5.94	0.22	0.13	1	1	1.35	0	0.03	30.8	0
289	4	68	2	3600	2	27	2	2	1	4	12	40	7	20	120	0	0	1.67	1	5.94	0.22	0.13	1	1	1.35	0	0.03	30.8	0
290	4	68	2	3600	3	2	1	4	1	4	12	40	7	20	120	0	0	1.67	1	5.94	0.22	0.13	1	1	1.35	0	0.03	30.8	0
291	4	68	2	3600	4	1	1	4	1	4	12	40	7	20	120	0	0	1.67	1	5.94	0.22	0.13	1	1	1.35	0	0.03	30.8	0
292	4	69	2	4000	1	25	1	1	13	4	12	40	7	40	60	0	0	3.33	1	6.6	0.22	0.13	1	1	1.35	0	0.03	30.8	0
293	4	69	2	4000	2	23	2	2	13	4	12	40	7	40	60	0	0	3.33	1	6.6	0.22	0.13	1	1	1.35	0	0.03	30.8	0
294	4	69	2	4000	3	3	2	4	13	4	12	40	7	40	60	0	0	3.33	1	6.6	0.22	0.13	1	1	1.35	0	0.03	30.8	0
295	4	70	2	3750	1	22	1	1	13	4	12	40	7	40	60	0	0	3.33	1	6.19	0.22	0.13	1	1	1.35	0	0.03	30.8	0
296	4	70	2	3750	2	19	2	2	13	4	12	40	7	40	60	0	0	3.33	1	6.19	0.22	0.13	1	1	1.35	0	0.03	30.8	0
297	4	70	2	3750	3	5	1	4	13	4	12	40	7	40	60	0	0	3.33	1	6.19	0.22	0.13	1	1	1.35	0	0.03	30.8	0
298	4	70	2	3750	4	2	1	4	13	4	12	40	7	40	60	0	0	3.33	1	6.19	0.22	0.13	1	1	1.35	0	0.03	30.8	0
299	4	71	2	3858	1	32	1	1	13	4	12	40	7	40	60	0	0	3.33	1	6.37	0.22	0.13	1	1	1.35	0	0.03	30.8	0
300	4	71	2	3858	2	30	2	2	13	4	12	40	7	40	60	0	0	3.33	1	6.37	0.22	0.13	1	1	1.35	0	0.03	30.8	0
301	4	71	2	3858	3	4	2	4	13	4	12	40	7	40	60	0	0	3.33	1	6.37	0.22	0.13	1	1	1.35	0	0.03	30.8	0
302	4	72	1	2500	1	25	1	1	13	4	12	40	7	40	60	0	0	3.33	1	4.13	0.22	0.13	1	1	1.35	0	0.03	30.8	0
303	4	72	1	2500	2	22	2	2	13	4	12	40	7	40	60	0	0	3.33	1	4.13	0.22	0.13	1	1	1.35	0	0.03	30.8	0
304	4	73	2	3000	1	25	1	1	13	4	12	40	7	40	60	0	0	3.33	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.8	0
305	4	73	2	3000	2	23	2	2	13	4	12	40	7	40	60	0	0	3.33	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.8	0
306	4	73	2	3000	3	3	1	4	13	4	12	40	7	40	60	0	0	3.33	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.8	0
307	4	74	2	3500	1	23	1	1	13	4	12	40	7	40	60	0	0	3.33	1	5.78	0.22	0.13	1	1	1.35	0	0.03	30.8	0
308	4	74	2	3500	2	22	2	2	13	4	12	40	7	40	60	0	0	3.33	1	5.78	0.22	0.13	1	1	1.35	0	0.03	30.8	0
309	4	74	2	3500	3	6	1	4	13	4	12	40	7	40	60	0	0	3.33	1	5.78	0.22	0.13	1	1	1.35	0	0.03	30.8	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
310	4	75	1	3000	1	26	1	1	13	4	12	40	7	40	60	0	0	3.33	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.8	0
311	4	75	1	3000	2	22	2	2	13	4	12	40	7	40	60	0	0	3.33	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.8	0
312	4	76	2	3000	1	25	1	1	13	4	12	40	7	40	60	0	0	3.33	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.8	0
313	4	76	2	3000	2	20	2	2	13	4	12	40	7	40	60	0	0	3.33	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.8	0
314	4	76	2	3000	3	2	2	4	13	4	12	40	7	40	60	0	0	3.33	1	4.95	0.22	0.13	1	1	1.35	0	0.03	30.8	0
315	4	77	2	4500	1	28	1	1	13	4	12	40	7	40	60	0	0	3.33	1	7.43	0.22	0.13	1	1	1.35	0	0.03	30.8	0
316	4	77	2	4500	2	25	2	2	13	4	12	40	7	40	60	0	0	3.33	1	7.43	0.22	0.13	1	1	1.35	0	0.03	30.8	0
317	4	77	2	4500	3	5	2	4	13	4	12	40	7	40	60	0	0	3.33	1	7.43	0.22	0.13	1	1	1.35	0	0.03	30.8	0
318	4	77	2	4500	4	2	1	4	13	4	12	40	7	40	60	0	0	3.33	1	7.43	0.22	0.13	1	1	1.35	0	0.03	30.8	0
319	4	78	2	3600	1	27	1	1	23	4	12	40	7	12	120	0	1	1	1	5.94	0.22	0.13	1	1	1.35	0	0.03	30.8	0
320	4	78	2	3600	2	25	2	2	23	4	12	40	7	12	120	0	1	1	1	5.94	0.22	0.13	1	1	1.35	0	0.03	30.8	0
321	4	78	2	3600	3	7	1	4	23	4	12	40	7	12	120	0	1	1	1	5.94	0.22	0.13	1	1	1.35	0	0.03	30.8	0
322	4	79	2	6000	1	23	1	1	23	4	12	40	7	12	120	0	1	1	1	9.9	0.22	0.13	1	1	1.35	0.02	0.03	30.8	0.02
323	4	79	2	6000	2	20	2	2	23	4	12	40	7	12	120	0	1	1	1	9.9	0.22	0.13	1	1	1.35	0.02	0.03	30.8	0.02
324	4	79	2	6000	3	3	1	4	23	4	12	40	7	12	120	0	1	1	1	9.9	0.22	0.13	1	1	1.35	0.02	0.03	30.8	0.02
325	4	80	1	9000	1	40	1	1	23	4	12	40	7	12	120	0	1	1	1	14.9	0.22	0.13	1	1	1.35	0.05	0.03	30.8	0.05
326	4	80	1	9000	2	35	2	2	23	4	12	40	7	12	120	0	1	1	1	14.9	0.22	0.13	1	1	1.35	0.05	0.03	30.8	0.05
327	5	81	2	10000	1	32	1	1	14	4	20	30	6	100	360	3	0	5	1	16.5	0.14	0.1	0.33	1	1.36	0	0	32.5	0
328	5	81	2	10000	2	27	2	2	14	4	20	30	6	100	360	3	0	5	1	16.5	0.14	0.1	0.33	1	1.36	0	0	32.5	0
329	5	81	2	10000	3	11	1	4	14	4	20	30	6	100	360	3	0	5	1	16.5	0.14	0.1	0.33	1	1.36	0	0	32.5	0
330	5	81	2	10000	4	7	2	4	14	4	20	30	6	100	360	3	0	5	1	16.5	0.14	0.1	0.33	1	1.36	0	0	32.5	0
331	5	81	2	10000	5	2	2	4	14	4	20	30	6	100	360	3	0	5	1	16.5	0.14	0.1	0.33	1	1.36	0	0	32.5	0
332	5	82	1	5000	1	30	1	1	3	4	20	30	7	10	60	4	1	0.5	1	8.25	0.14	0.1	0.25	1	1.36	0.03	0	32.5	0
333	5	82	1	5000	2	25	2	2	3	4	20	30	7	10	60	4	1	0.5	1	8.25	0.14	0.1	0.25	1	1.36	0.03	0	32.5	0
334	5	83	2	8000	1	50	1	1	14	4	20	30	7	30	60	3	1	1.5	1	13.2	0.14	0.1	0.33	1	1.36	0	0	32.5	0
335	5	83	2	8000	2	43	2	2	14	4	20	30	7	30	60	3	1	1.5	1	13.2	0.14	0.1	0.33	1	1.36	0	0	32.5	0
336	5	83	2	8000	3	12	1	4	14	4	20	30	7	30	60	3	1	1.5	1	13.2	0.14	0.1	0.33	1	1.36	0	0	32.5	0
337	5	84	1	6000	1	30	1	1	2	4	20	30	7	20	240	5	1	1	1	9.9	0.14	0.1	0.2	1	1.36	0.01	0	32.5	0
338	5	84	1	6000	2	20	2	2	2	4	20	30	7	20	240	5	1	1	1	9.9	0.14	0.1	0.2	1	1.36	0.01	0	32.5	0
339	5	85	1	6000	1	30	1	1	1	4	20	30	6	200	720	3	1	10	1	9.9	0.14	0.1	0.33	1	1.36	0	0	32.5	0
340	5	85	1	6000	2	25	2	2	1	4	20	30	6	200	720	3	1	10	1	9.9	0.14	0.1	0.33	1	1.36	0	0	32.5	0
341	5	86	1	4500	1	20	1	1	2	4	20	30	7	20	720	5	1	1	1	7.43	0.14	0.1	0.2	1	1.36	0	0	32.5	0
342	5	86	1	4500	2	20	2	2	2	4	20	30	7	20	720	5	1	1	1	7.43	0.14	0.1	0.2	1	1.36	0	0	32.5	0
343	5	87	1	4500	1	30	1	1	1	4	20	30	7	40	180	5	1	2	1	7.43	0.14	0.1	0.2	1	1.36	0	0	32.5	0
344	5	87	1	4500	2	20	2	2	1	4	20	30	7	40	180	5	1	2	1	7.43	0.14	0.1	0.2	1	1.36	0	0	32.5	0
345	5	88	2	11000	1	50	1	1	21	4	20	30	6	0	720	5	1	0	1	18.2	0.14	0.1	0.2	1	1.36	0.37	0	32.5	0.03
346	5	88	2	11000	2	40	2	2	21	4	20	30	6	0	720	5	1	0	1	18.2	0.14	0.1	0.2	1	1.36	0.37	0	32.5	0.03
347	5	88	2	11000	3	10	2	4	21	4	20	30	6	0	720	5	1	0	1	18.2	0.14	0.1	0.2	1	1.36	0.37	0	32.5	0.03

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
348	5	89	1	4500	1	50	1	1	12	4	20	30	6	100	720	5	1	5	1	7.43	0.14	0.1	0.2	1	1.36	0	0	32.5	0
349	5	89	1	4500	2	35	2	2	12	4	20	30	6	100	720	5	1	5	1	7.43	0.14	0.1	0.2	1	1.36	0	0	32.5	0
350	5	90	1	4500	1	26	1	1	12	4	20	30	6	100	1440	5	1	5	1	7.43	0.14	0.1	0.2	1	1.36	0	0	32.5	0
351	5	90	1	4500	2	20	2	2	12	4	20	30	6	100	1440	5	1	5	1	7.43	0.14	0.1	0.2	1	1.36	0	0	32.5	0
352	5	91	1	2000	1	60	1	1	12	4	20	60	7	20	1440	5	0	1	1	3.3	0.14	0.1	0.2	1	1.33	0	0	27.6	0
353	5	91	1	2000	2	40	2	2	12	4	20	60	7	20	1440	5	0	1	1	3.3	0.14	0.1	0.2	1	1.33	0	0	27.6	0
354	5	92	1	3000	1	21	1	1	1	4	20	30	6	100	300	5	0	5	1	4.95	0.14	0.1	0.2	1	1.36	0	0	32.5	0
355	5	92	1	3000	2	20	2	2	1	4	20	30	6	100	300	5	0	5	1	4.95	0.14	0.1	0.2	1	1.36	0	0	32.5	0
356	5	93	1	5500	1	28	1	1	1	4	20	30	6	150	720	5	0	7.5	1	9.08	0.14	0.1	0.2	1	1.36	0	0	32.5	0
357	5	93	1	5500	2	20	2	2	1	4	20	30	6	150	720	5	0	7.5	1	9.08	0.14	0.1	0.2	1	1.36	0	0	32.5	0
358	5	94	1	3000	1	27	1	1	123	4	20	30	6	150	720	5	0	7.5	1	4.95	0.14	0.1	0.2	1	1.36	0	0	32.5	0
359	5	94	1	3000	2	20	2	2	123	4	20	30	6	150	720	5	0	7.5	1	4.95	0.14	0.1	0.2	1	1.36	0	0	32.5	0
360	5	95	1	4500	1	26	1	1	12	4	20	30	6	150	720	5	0	7.5	1	7.43	0.14	0.1	0.2	1	1.36	0	0	32.5	0
361	5	95	1	4500	2	20	2	2	12	4	20	30	6	150	720	5	0	7.5	1	7.43	0.14	0.1	0.2	1	1.36	0	0	32.5	0
362	5	96	2	5600	1	30	1	1	1	4	20	30	6	100	720	5	1	5	1	9.24	0.14	0.1	0.2	1	1.36	0	0	32.5	0
363	5	96	2	5600	2	21	2	2	1	4	20	30	6	100	720	5	1	5	1	9.24	0.14	0.1	0.2	1	1.36	0	0	32.5	0
364	5	96	2	5600	3	4	1	4	1	4	20	30	6	100	720	5	1	5	1	9.24	0.14	0.1	0.2	1	1.36	0	0	32.5	0
365	5	97	1	3500	1	27	1	1	2	4	20	30	6	100	180	5	0	5	1	5.78	0.14	0.1	0.2	1	1.36	0	0	32.5	0
366	5	97	1	3500	2	20	2	2	2	4	20	30	6	100	180	5	0	5	1	5.78	0.14	0.1	0.2	1	1.36	0	0	32.5	0
367	5	98	1	4000	1	33	1	1	12	4	20	30	6	300	180	5	1	15	1	6.6	0.14	0.1	0.2	1	1.36	0	0	32.5	0
368	5	98	1	4000	2	20	2	2	12	4	20	30	6	300	180	5	1	15	1	6.6	0.14	0.1	0.2	1	1.36	0	0	32.5	0
369	5	99	1	4500	1	30	1	1	12	4	20	30	6	300	240	5	0	15	1	7.43	0.14	0.1	0.2	1	1.36	0	0	32.5	0
370	5	99	1	4500	2	22	2	2	12	4	20	30	6	300	240	5	0	15	1	7.43	0.14	0.1	0.2	1	1.36	0	0	32.5	0
371	5	100	2	4000	1	28	1	1	13	4	20	30	6	175	720	5	0	8.75	1	6.6	0.14	0.1	0.2	1	1.36	0	0	32.5	0
372	5	100	2	4000	2	26	2	2	13	4	20	30	6	175	720	5	0	8.75	1	6.6	0.14	0.1	0.2	1	1.36	0	0	32.5	0
373	5	100	2	4000	3	5	2	4	13	4	20	30	6	175	720	5	0	8.75	1	6.6	0.14	0.1	0.2	1	1.36	0	0	32.5	0
												ACTIVITY=		LEISURE			5	<<CODE											
1	1	1	3	4000	1	65	1	1	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
2	1	1	3	4000	2	55	2	2	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
3	1	1	3	4000	3	25	2	3	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
4	1	1	3	4000	4	20	2	3	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
5	1	2	2	4000	1	35	1	1	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
6	1	2	2	4000	2	32	2	2	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
7	1	2	2	4000	3	11	1	4	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
8	1	2	2	4000	4	7	1	4	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
9	1	3	2	3900	1	40	1	1	0	0	0	0	0	0	0	0	0	0	1	6.44	0.99	1	1	0	1.38	1	0.99	0	0
10	1	3	2	3900	2	37	2	2	0	0	0	0	0	0	0	0	0	0	1	6.44	0.99	1	1	0	1.38	1	0.99	0	0
11	1	3	2	3900	3	13	1	4	0	0	0	0	0	0	0	0	0	0	1	6.44	0.99	1	1	0	1.38	1	0.99	0	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
12	1	3	2	3900	4	11	1	4	0	0	0	0	0	0	0	0	0	0	1	6.44	0.99	1	1	0	1.38	1	0.99	0	0
13	1	4	2	7000	1	43	1	1	0	0	0	0	0	0	0	0	0	0	1	11.6	0.99	1	1	0	1.38	1	0.99	0	0
14	1	4	2	7000	2	40	2	2	0	0	0	0	0	0	0	0	0	0	1	11.6	0.99	1	1	0	1.38	1	0.99	0	0
15	1	4	2	7000	3	14	1	4	0	0	0	0	0	0	0	0	0	0	1	11.6	0.99	1	1	0	1.38	1	0.99	0	0
16	1	4	2	7000	4	10	2	4	0	0	0	0	0	0	0	0	0	0	1	11.6	0.99	1	1	0	1.38	1	0.99	0	0
17	1	4	2	7000	5	8	1	4	0	0	0	0	0	0	0	0	0	0	1	11.6	0.99	1	1	0	1.38	1	0.99	0	0
18	1	4	2	7000	6	6	2	4	0	0	0	0	0	0	0	0	0	0	1	11.6	0.99	1	1	0	1.38	1	0.99	0	0
19	1	5	3	4000	1	64	1	1	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
20	1	5	3	4000	2	55	2	2	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
21	1	5	3	4000	3	15	1	3	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
22	1	6	2	4000	1	47	1	1	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
23	1	6	2	4000	2	40	2	2	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
24	1	6	2	4000	3	10	1	4	0	0	0	0	0	0	0	0	0	0	1	6.6	0.99	1	1	0	1.38	1	0.99	0	0
25	1	7	2	4300	1	35	1	1	0	0	0	0	0	0	0	0	0	0	1	7.1	0.99	1	1	0	1.38	1	0.99	0	0
26	1	7	2	4300	2	32	2	2	0	0	0	0	0	0	0	0	0	0	1	7.1	0.99	1	1	0	1.38	1	0.99	0	0
27	1	7	2	4300	3	12	2	4	0	0	0	0	0	0	0	0	0	0	1	7.1	0.99	1	1	0	1.38	1	0.99	0	0
28	1	7	2	4300	4	11	2	4	0	0	0	0	0	0	0	0	0	0	1	7.1	0.99	1	1	0	1.38	1	0.99	0	0
29	1	7	2	4300	5	10	2	4	0	0	0	0	0	0	0	0	0	0	1	7.1	0.99	1	1	0	1.38	1	0.99	0	0
30	1	8	4	3500	1	45	1	1	0	0	0	0	0	0	0	0	0	0	1	5.78	0.99	1	1	0	1.38	1	0.99	0	0
31	1	8	4	3500	2	43	2	2	0	0	0	0	0	0	0	0	0	0	1	5.78	0.99	1	1	0	1.38	1	0.99	0	0
32	1	8	4	3500	3	16	1	3	0	0	0	0	0	0	0	0	0	0	1	5.78	0.99	1	1	0	1.38	1	0.99	0	0
33	1	8	4	3500	4	14	1	4	0	0	0	0	0	0	0	0	0	0	1	5.78	0.99	1	1	0	1.38	1	0.99	0	0
34	1	8	4	3500	5	12	1	4	0	0	0	0	0	0	0	0	0	0	1	5.78	0.99	1	1	0	1.38	1	0.99	0	0
35	1	9	4	3500	1	38	1	1	0	0	0	0	0	0	0	0	0	0	1	5.78	0.99	1	1	0	1.38	1	0.99	0	0
36	1	9	4	3500	2	35	2	2	0	0	0	0	0	0	0	0	0	0	1	5.78	0.99	1	1	0	1.38	1	0.99	0	0
37	1	9	4	3500	3	15	1	3	0	0	0	0	0	0	0	0	0	0	1	5.78	0.99	1	1	0	1.38	1	0.99	0	0
38	1	9	4	3500	4	13	1	4	0	0	0	0	0	0	0	0	0	0	1	5.78	0.99	1	1	0	1.38	1	0.99	0	0
39	1	9	4	3500	5	7	2	4	0	0	0	0	0	0	0	0	0	0	1	5.78	0.99	1	1	0	1.38	1	0.99	0	0
40	1	10	2	5100	1	34	1	1	0	0	0	0	0	0	0	0	0	0	1	8.42	0.99	1	1	0	1.38	1	0.99	0	0
41	1	10	2	5100	2	32	2	2	0	0	0	0	0	0	0	0	0	0	1	8.42	0.99	1	1	0	1.38	1	0.99	0	0
42	1	10	2	5100	3	10	2	4	0	0	0	0	0	0	0	0	0	0	1	8.42	0.99	1	1	0	1.38	1	0.99	0	0
43	1	10	2	5100	4	6	1	4	0	0	0	0	0	0	0	0	0	0	1	8.42	0.99	1	1	0	1.38	1	0.99	0	0
44	1	11	2	6000	1	42	1	1	0	0	0	0	0	0	0	0	0	0	1	9.9	0.99	1	1	0	1.38	1	0.99	0	0
45	1	11	2	6000	2	40	2	2	0	0	0	0	0	0	0	0	0	0	1	9.9	0.99	1	1	0	1.38	1	0.99	0	0
46	1	11	2	6000	3	12	2	4	0	0	0	0	0	0	0	0	0	0	1	9.9	0.99	1	1	0	1.38	1	0.99	0	0
47	1	11	2	6000	4	9	1	4	0	0	0	0	0	0	0	0	0	0	1	9.9	0.99	1	1	0	1.38	1	0.99	0	0
48	1	12	2	3600	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	5.94	0.99	1	1	0	1.38	1	0.99	0	0
49	1	12	2	3600	2	29	1	2	0	0	0	0	0	0	0	0	0	0	1	5.94	0.99	1	1	0	1.38	1	0.99	0	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
50	1	12	2	3600	3	14	2	4	0	0	0	0	0	0	0	0	0	0	1	5.94	0.99	1	1	0	1.38	1	0.99	0	0
51	1	12	2	3600	4	11	2	4	0	0	0	0	0	0	0	0	0	0	1	5.94	0.99	1	1	0	1.38	1	0.99	0	0
52	1	12	2	3600	5	10	1	4	0	0	0	0	0	0	0	0	0	0	1	5.94	0.99	1	1	0	1.38	1	0.99	0	0
53	1	12	2	3600	6	9	1	4	0	0	0	0	0	0	0	0	0	0	1	5.94	0.99	1	1	0	1.38	1	0.99	0	0
54	1	13	2	3600	1	45	1	1	0	0	0	0	0	0	0	0	0	0	1	5.94	0.99	1	1	0	1.38	1	0.99	0	0
55	1	13	2	3600	2	40	2	2	0	0	0	0	0	0	0	0	0	0	1	5.94	0.99	1	1	0	1.38	1	0.99	0	0
56	1	13	2	3600	3	13	1	4	0	0	0	0	0	0	0	0	0	0	1	5.94	0.99	1	1	0	1.38	1	0.99	0	0
57	1	13	2	3600	4	9	2	4	0	0	0	0	0	0	0	0	0	0	1	5.94	0.99	1	1	0	1.38	1	0.99	0	0
58	1	13	2	3600	5	7	2	4	0	0	0	0	0	0	0	0	0	0	1	5.94	0.99	1	1	0	1.38	1	0.99	0	0
59	1	14	2	3000	1	32	1	1	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
60	1	14	2	3000	2	30	2	2	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
61	1	14	2	3000	3	11	1	4	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
62	1	14	2	3000	4	10	1	4	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
63	1	14	2	3000	5	9	2	4	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
64	1	15	4	6000	1	47	1	1	0	0	0	0	0	0	0	0	0	0	1	9.9	0.99	1	1	0	1.38	1	0.99	0	0
65	1	15	4	6000	2	45	2	2	0	0	0	0	0	0	0	0	0	0	1	9.9	0.99	1	1	0	1.38	1	0.99	0	0
66	1	15	4	6000	3	19	1	3	0	0	0	0	0	0	0	0	0	0	1	9.9	0.99	1	1	0	1.38	1	0.99	0	0
67	1	15	4	6000	4	13	1	4	0	0	0	0	0	0	0	0	0	0	1	9.9	0.99	1	1	0	1.38	1	0.99	0	0
68	1	15	4	6000	5	9	2	4	0	0	0	0	0	0	0	0	0	0	1	9.9	0.99	1	1	0	1.38	1	0.99	0	0
69	1	16	4	3700	1	38	1	1	0	0	0	0	0	0	0	0	0	0	1	6.11	0.99	1	1	0	1.38	1	0.99	0	0
70	1	16	4	3700	2	38	2	2	0	0	0	0	0	0	0	0	0	0	1	6.11	0.99	1	1	0	1.38	1	0.99	0	0
71	1	16	4	3700	3	16	1	3	0	0	0	0	0	0	0	0	0	0	1	6.11	0.99	1	1	0	1.38	1	0.99	0	0
72	1	16	4	3700	4	12	2	4	0	0	0	0	0	0	0	0	0	0	1	6.11	0.99	1	1	0	1.38	1	0.99	0	0
73	1	16	4	3700	5	10	1	4	0	0	0	0	0	0	0	0	0	0	1	6.11	0.99	1	1	0	1.38	1	0.99	0	0
74	1	16	4	3700	6	9	1	4	0	0	0	0	0	0	0	0	0	0	1	6.11	0.99	1	1	0	1.38	1	0.99	0	0
75	1	17	2	3000	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
76	1	17	2	3000	2	28	2	2	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
77	1	17	2	3000	3	13	1	4	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
78	1	17	2	3000	4	11	1	4	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
79	1	18	4	9500	1	58	1	1	0	0	0	0	0	0	0	0	0	0	1	15.7	0.99	1	1	0	1.38	1	0.99	0	0
80	1	18	4	9500	2	45	2	2	0	0	0	0	0	0	0	0	0	0	1	15.7	0.99	1	1	0	1.38	1	0.99	0	0
81	1	18	4	9500	3	20	1	3	0	0	0	0	0	0	0	0	0	0	1	15.7	0.99	1	1	0	1.38	1	0.99	0	0
82	1	18	4	9500	4	19	1	3	0	0	0	0	0	0	0	0	0	0	1	15.7	0.99	1	1	0	1.38	1	0.99	0	0
83	1	18	4	9500	5	14	2	4	0	0	0	0	0	0	0	0	0	0	1	15.7	0.99	1	1	0	1.38	1	0.99	0	0
84	1	19	2	3000	1	35	1	1	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
85	1	19	2	3000	2	34	2	2	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
86	1	19	2	3000	3	14	2	4	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
87	1	19	2	3000	4	13	2	4	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
88	1	19	2	3000	5	12	1	4	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
89	1	19	2	3000	6	11	1	4	0	0	0	0	0	0	0	0	0	0	1	4.95	0.99	1	1	0	1.38	1	0.99	0	0
90	1	20	2	3300	1	36	1	1	0	0	0	0	0	0	0	0	0	0	1	5.45	0.99	1	1	0	1.38	1	0.99	0	0
91	1	20	2	3300	2	35	2	2	0	0	0	0	0	0	0	0	0	0	1	5.45	0.99	1	1	0	1.38	1	0.99	0	0
92	1	20	2	3300	3	6	2	4	0	0	0	0	0	0	0	0	0	0	1	5.45	0.99	1	1	0	1.38	1	0.99	0	0
93	1	20	2	3300	4	5	2	4	0	0	0	0	0	0	0	0	0	0	1	5.45	0.99	1	1	0	1.38	1	0.99	0	0
94	2	21	2	12000	1	45	1	1	0	0	0	0	0	0	0	0	0	0	1	19.8	1	0.8	1	0	1.38	1	0.8	0	0
95	2	21	2	12000	2	27	2	2	0	0	0	0	0	0	0	0	0	0	1	19.8	1	0.8	1	0	1.38	1	0.8	0	0
96	2	21	2	12000	3	8	1	4	0	0	0	0	0	0	0	0	0	0	1	19.8	1	0.8	1	0	1.38	1	0.8	0	0
97	2	21	2	12000	4	6	1	4	0	0	0	0	0	0	0	0	0	0	1	19.8	1	0.8	1	0	1.38	1	0.8	0	0
98	2	21	2	12000	5	4	1	4	0	0	0	0	0	0	0	0	0	0	1	19.8	1	0.8	1	0	1.38	1	0.8	0	0
99	2	22	2	2000	1	32	1	1	0	0	0	0	0	0	0	0	0	0	1	3.3	1	0.8	1	0	1.38	1	0.8	0	0
100	2	22	2	2000	2	28	2	2	0	0	0	0	0	0	0	0	0	0	1	3.3	1	0.8	1	0	1.38	1	0.8	0	0
101	2	22	2	2000	3	6	1	4	0	0	0	0	0	0	0	0	0	0	1	3.3	1	0.8	1	0	1.38	1	0.8	0	0
102	2	23	2	7000	1	35	1	1	0	0	0	0	0	0	0	0	0	0	1	11.6	1	0.8	1	0	1.38	1	0.8	0	0
103	2	23	2	7000	2	30	2	2	0	0	0	0	0	0	0	0	0	0	1	11.6	1	0.8	1	0	1.38	1	0.8	0	0
104	2	23	2	7000	3	6	2	4	0	0	0	0	0	0	0	0	0	0	1	11.6	1	0.8	1	0	1.38	1	0.8	0	0
105	2	23	2	7000	4	4	2	4	0	0	0	0	0	0	0	0	0	0	1	11.6	1	0.8	1	0	1.38	1	0.8	0	0
106	2	24	2	4500	1	34	1	1	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
107	2	24	2	4500	2	35	2	2	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
108	2	24	2	4500	3	4	2	4	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
109	2	24	2	4500	4	2	2	4	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
110	2	24	2	4500	5	1	1	4	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
111	2	25	2	3000	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.8	1	0	1.38	1	0.8	0	0
112	2	25	2	3000	2	23	2	2	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.8	1	0	1.38	1	0.8	0	0
113	2	25	2	3000	3	8	1	4	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.8	1	0	1.38	1	0.8	0	0
114	2	25	2	3000	4	6	2	4	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.8	1	0	1.38	1	0.8	0	0
115	2	26	1	4500	1	45	1	1	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
116	2	26	1	4500	2	30	2	2	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
117	2	27	2	2000	1	53	1	1	0	0	0	0	0	0	0	0	0	0	1	3.3	1	0.8	1	0	1.38	1	0.8	0	0
118	2	27	2	2000	2	35	2	2	0	0	0	0	0	0	0	0	0	0	1	3.3	1	0.8	1	0	1.38	1	0.8	0	0
119	2	27	2	2000	3	13	2	4	0	0	0	0	0	0	0	0	0	0	1	3.3	1	0.8	1	0	1.38	1	0.8	0	0
120	2	27	2	2000	4	10	1	4	0	0	0	0	0	0	0	0	0	0	1	3.3	1	0.8	1	0	1.38	1	0.8	0	0
121	2	28	1	2000	1	50	1	1	0	0	0	0	0	0	0	0	0	0	1	3.3	1	0.8	1	0	1.38	1	0.8	0	0
122	2	28	1	2000	2	35	2	2	0	0	0	0	0	0	0	0	0	0	1	3.3	1	0.8	1	0	1.38	1	0.8	0	0
123	2	29	2	5000	1	36	1	1	0	0	0	0	0	0	0	0	0	0	1	8.25	1	0.8	1	0	1.38	1	0.8	0	0
124	2	29	2	5000	2	25	2	2	0	0	0	0	0	0	0	0	0	0	1	8.25	1	0.8	1	0	1.38	1	0.8	0	0
125	2	29	2	5000	3	13	2	4	0	0	0	0	0	0	0	0	0	0	1	8.25	1	0.8	1	0	1.38	1	0.8	0	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
126	2	29	2	5000	4	5	2	4	0	0	0	0	0	0	0	0	0	0	1	8.25	1	0.8	1	0	1.38	1	0.8	0	0
127	2	29	2	5000	5	3	1	4	0	0	0	0	0	0	0	0	0	0	1	8.25	1	0.8	1	0	1.38	1	0.8	0	0
128	2	30	1	3000	1	39	1	1	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.8	1	0	1.38	1	0.8	0	0
129	2	30	1	3000	2	30	2	2	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.8	1	0	1.38	1	0.8	0	0
130	2	31	2	3000	1	38	1	1	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.8	1	0	1.38	1	0.8	0	0
131	2	31	2	3000	2	36	2	2	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.8	1	0	1.38	1	0.8	0	0
132	2	31	2	3000	3	5	1	4	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.8	1	0	1.38	1	0.8	0	0
133	2	31	2	3000	4	3	1	4	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.8	1	0	1.38	1	0.8	0	0
134	2	32	2	5000	1	34	1	1	0	0	0	0	0	0	0	0	0	0	1	8.25	1	0.8	1	0	1.38	1	0.8	0	0
135	2	32	2	5000	2	25	2	2	0	0	0	0	0	0	0	0	0	0	1	8.25	1	0.8	1	0	1.38	1	0.8	0	0
136	2	32	2	5000	3	5	2	4	0	0	0	0	0	0	0	0	0	0	1	8.25	1	0.8	1	0	1.38	1	0.8	0	0
137	2	32	2	5000	4	3	1	4	0	0	0	0	0	0	0	0	0	0	1	8.25	1	0.8	1	0	1.38	1	0.8	0	0
138	2	33	2	6000	1	39	1	1	0	0	0	0	0	0	0	0	0	0	1	9.9	1	0.8	1	0	1.38	1	0.8	0	0
139	2	33	2	6000	2	30	2	2	0	0	0	0	0	0	0	0	0	0	1	9.9	1	0.8	1	0	1.38	1	0.8	0	0
140	2	33	2	6000	3	2	2	4	0	0	0	0	0	0	0	0	0	0	1	9.9	1	0.8	1	0	1.38	1	0.8	0	0
141	2	33	2	6000	4	1	1	4	0	0	0	0	0	0	0	0	0	0	1	9.9	1	0.8	1	0	1.38	1	0.8	0	0
142	2	34	1	10000	1	34	1	1	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.8	1	0	1.38	1	0.8	0	0
143	2	34	1	10000	2	25	2	2	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.8	1	0	1.38	1	0.8	0	0
144	2	35	2	3500	1	32	1	1	0	0	0	0	0	0	0	0	0	0	1	5.78	1	0.8	1	0	1.38	1	0.8	0	0
145	2	35	2	3500	2	25	2	2	0	0	0	0	0	0	0	0	0	0	1	5.78	1	0.8	1	0	1.38	1	0.8	0	0
146	2	35	2	3500	3	7	2	4	0	0	0	0	0	0	0	0	0	0	1	5.78	1	0.8	1	0	1.38	1	0.8	0	0
147	2	36	2	10000	1	38	1	1	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.8	1	0	1.38	1	0.8	0	0
148	2	36	2	10000	2	28	2	2	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.8	1	0	1.38	1	0.8	0	0
149	2	36	2	10000	3	1	1	4	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.8	1	0	1.38	1	0.8	0	0
150	2	37	2	4500	1	35	1	1	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
151	2	37	2	4500	2	21	2	2	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
152	2	37	2	4500	3	1	2	4	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
153	2	38	2	4500	1	36	1	1	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
154	2	38	2	4500	2	27	2	2	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
155	2	38	2	4500	3	8	2	4	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
156	2	39	2	10000	1	38	1	1	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.8	1	0	1.38	1	0.8	0	0
157	2	39	2	10000	2	32	2	2	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.8	1	0	1.38	1	0.8	0	0
158	2	39	2	10000	3	9	2	4	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.8	1	0	1.38	1	0.8	0	0
159	2	39	2	10000	4	7	1	4	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.8	1	0	1.38	1	0.8	0	0
160	2	40	2	4500	1	36	1	1	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
161	2	40	2	4500	2	26	2	2	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
162	2	40	2	4500	3	4	2	4	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.8	1	0	1.38	1	0.8	0	0
163	3	41	2	3500	1	50	1	1	1	4	10	30	7	10	1	4	1	1	1	5.78	1	0.6	0.25	0.07	1.36	0.01	0.15	0.82	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
164	3	41	2	3500	2	47	2	2	1	4	10	30	7	10	1	4	1	1	1	5.78	1	0.6	0.25	0.07	1.36	0.01	0.15	0.82	0
165	3	41	2	3500	3	14	1	4	1	4	10	30	7	10	1	4	1	1	1	5.78	1	0.6	0.25	0.07	1.36	0.01	0.15	0.82	0
166	3	41	2	3500	4	10	1	4	1	4	10	30	7	10	1	4	1	1	1	5.78	1	0.6	0.25	0.07	1.36	0.01	0.15	0.82	0
167	3	42	4	4000	1	44	1	1	13	4	10	30	7	10	60	4	1	1	1	6.6	1	0.6	0.25	1	1.36	0.02	0.15	32.5	0.09
168	3	42	4	4000	2	43	2	2	13	4	10	30	7	10	60	4	1	1	1	6.6	1	0.6	0.25	1	1.36	0.02	0.15	32.5	0.09
169	3	42	4	4000	3	19	1	3	13	4	10	30	7	10	60	4	1	1	1	6.6	1	0.6	0.25	1	1.36	0.02	0.15	32.5	0.09
170	3	42	4	4000	4	16	1	3	13	4	10	30	7	10	60	4	1	1	1	6.6	1	0.6	0.25	1	1.36	0.02	0.15	32.5	0.09
171	3	42	4	4000	5	8	1	4	13	4	10	30	7	10	60	4	1	1	1	6.6	1	0.6	0.25	1	1.36	0.02	0.15	32.5	0.09
172	3	43	2	4500	1	37	1	1	1	1	0	15	0	0	30	2	2	0	1	7.43	1	0.6	0.5	1	1.37	1	0.3	35.2	10.5
173	3	43	2	4500	2	36	2	2	1	1	0	15	0	0	30	2	2	0	1	7.43	1	0.6	0.5	1	1.37	1	0.3	35.2	10.5
174	3	43	2	4500	3	11	1	4	1	1	0	15	0	0	30	2	2	0	1	7.43	1	0.6	0.5	1	1.37	1	0.3	35.2	10.5
175	3	43	2	4500	4	8	1	4	1	1	0	15	0	0	30	2	2	0	1	7.43	1	0.6	0.5	1	1.37	1	0.3	35.2	10.5
176	3	44	4	1500	1	47	1	1	4	1	10	10	4	10	60	1	4	1	1	2.48	1	0.6	1	2	1.37	0	0.6	93.3	0.01
177	3	44	4	1500	2	45	2	2	4	1	10	10	4	10	60	1	4	1	1	2.48	1	0.6	1	2	1.37	0	0.6	93.3	0.01
178	3	44	4	1500	3	21	1	3	4	1	10	10	4	10	60	1	4	1	1	2.48	1	0.6	1	2	1.37	0	0.6	93.3	0.01
179	3	44	4	1500	4	19	1	3	4	1	10	10	4	10	60	1	4	1	1	2.48	1	0.6	1	2	1.37	0	0.6	93.3	0.01
180	3	44	4	1500	5	12	1	4	4	1	10	10	4	10	60	1	4	1	1	2.48	1	0.6	1	2	1.37	0	0.6	93.3	0.01
181	3	45	2	4000	1	28	1	1	1	1	0.5	15	0	0	30	1	3	0	1	6.6	1	0.6	1	1	1.37	0.61	0.6	35.2	12.8
182	3	45	2	4000	2	25	2	2	1	1	0.5	15	0	0	30	1	3	0	1	6.6	1	0.6	1	1	1.37	0.61	0.6	35.2	12.8
183	3	45	2	4000	3	5	2	4	1	1	0.5	15	0	0	30	1	3	0	1	6.6	1	0.6	1	1	1.37	0.61	0.6	35.2	12.8
184	3	46	2	3500	1	40	1	1	1	1	0.5	15	2	0	60	2	2	0	1	5.78	1	0.6	0.5	1	1.37	0.61	0.3	35.2	6.38
185	3	46	2	3500	2	40	2	2	1	1	0.5	15	2	0	60	2	2	0	1	5.78	1	0.6	0.5	1	1.37	0.61	0.3	35.2	6.38
186	3	46	2	3500	3	12	1	4	1	1	0.5	15	2	0	60	2	2	0	1	5.78	1	0.6	0.5	1	1.37	0.61	0.3	35.2	6.38
187	3	46	2	3500	4	11	1	4	1	1	0.5	15	2	0	60	2	2	0	1	5.78	1	0.6	0.5	1	1.37	0.61	0.3	35.2	6.38
188	3	46	2	3500	5	10	2	4	1	1	0.5	15	2	0	60	2	2	0	1	5.78	1	0.6	0.5	1	1.37	0.61	0.3	35.2	6.38
189	3	46	2	3500	6	8	2	4	1	1	0.5	15	2	0	60	2	2	0	1	5.78	1	0.6	0.5	1	1.37	0.61	0.3	35.2	6.38
190	3	47	2	6000	1	38	1	1	1	1	0.5	15	0	0	60	1	1	0	1	9.9	1	0.6	1	1	1.37	0.61	0.6	35.2	12.8
191	3	47	2	6000	2	35	2	2	1	1	0.5	15	0	0	60	1	1	0	1	9.9	1	0.6	1	1	1.37	0.61	0.6	35.2	12.8
192	3	47	2	6000	3	14	1	4	1	1	0.5	15	0	0	60	1	1	0	1	9.9	1	0.6	1	1	1.37	0.61	0.6	35.2	12.8
193	3	47	2	6000	4	8	2	4	1	1	0.5	15	0	0	60	1	1	0	1	9.9	1	0.6	1	1	1.37	0.61	0.6	35.2	12.8
194	3	48	4	5000	1	35	1	1	3	1	0.5	10	0	0	60	2	2	0	1	8.25	1	0.6	0.5	1	1.37	0.72	0.3	36.1	7.73
195	3	48	4	5000	2	33	2	2	3	1	0.5	10	0	0	60	2	2	0	1	8.25	1	0.6	0.5	1	1.37	0.72	0.3	36.1	7.73
196	3	48	4	5000	3	17	1	3	3	1	0.5	10	0	0	60	2	2	0	1	8.25	1	0.6	0.5	1	1.37	0.72	0.3	36.1	7.73
197	3	48	4	5000	4	14	1	4	3	1	0.5	10	0	0	60	2	2	0	1	8.25	1	0.6	0.5	1	1.37	0.72	0.3	36.1	7.73
198	3	48	4	5000	5	9	2	4	3	1	0.5	10	0	0	60	2	2	0	1	8.25	1	0.6	0.5	1	1.37	0.72	0.3	36.1	7.73
199	3	48	4	5000	6	7	2	4	3	1	0.5	10	0	0	60	2	2	0	1	8.25	1	0.6	0.5	1	1.37	0.72	0.3	36.1	7.73
200	3	49	2	6000	1	38	1	1	1	2	0.5	15	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.37	0.61	0.3	35.2	6.38
201	3	49	2	6000	2	35	2	2	1	2	0.5	15	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.37	0.61	0.3	35.2	6.38

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
202	3	49	2	6000	3	12	1	4	1	2	0.5	15	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.37	0.61	0.3	35.2	6.38
203	3	50	2	7000	1	29	1	1	0	0	0	0	0	0	0	0	0	0	1	11.6	1	0.6	1	0	1.38	1	0.6	0	0
204	3	50	2	7000	2	25	2	2	0	0	0	0	0	0	0	0	0	0	1	11.6	1	0.6	1	0	1.38	1	0.6	0	0
205	3	50	2	7000	3	9	2	4	0	0	0	0	0	0	0	0	0	0	1	11.6	1	0.6	1	0	1.38	1	0.6	0	0
206	3	50	2	7000	4	7	1	4	0	0	0	0	0	0	0	0	0	0	1	11.6	1	0.6	1	0	1.38	1	0.6	0	0
207	3	51	2	15000	1	45	1	1	1	2	0.5	5	4	5	60	2	2	10	1	24.8	1	0.6	0.5	2	1.37	0.57	0.3	95.9	16.2
208	3	51	2	15000	2	45	2	2	1	2	0.5	5	4	5	60	2	2	10	1	24.8	1	0.6	0.5	2	1.37	0.57	0.3	95.9	16.2
209	3	51	2	15000	3	8	1	4	1	2	0.5	5	4	5	60	2	2	10	1	24.8	1	0.6	0.5	2	1.37	0.57	0.3	95.9	16.2
210	3	51	2	15000	4	5	1	4	1	2	0.5	5	4	5	60	2	2	10	1	24.8	1	0.6	0.5	2	1.37	0.57	0.3	95.9	16.2
211	3	52	2	3000	1	36	1	1	1	2	0.5	15	0	0	60	2	3	0	1	4.95	1	0.6	0.5	1	1.37	0.61	0.3	35.2	6.38
212	3	52	2	3000	2	35	2	2	1	2	0.5	15	0	0	60	2	3	0	1	4.95	1	0.6	0.5	1	1.37	0.61	0.3	35.2	6.38
213	3	52	2	3000	3	13	1	4	1	2	0.5	15	0	0	60	2	3	0	1	4.95	1	0.6	0.5	1	1.37	0.61	0.3	35.2	6.38
214	3	53	4	6000	1	45	1	1	14	1	0.5	30	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.36	0.37	0.3	32.5	3.58
215	3	53	4	6000	2	43	2	2	14	1	0.5	30	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.36	0.37	0.3	32.5	3.58
216	3	53	4	6000	3	22	1	3	14	1	0.5	30	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.36	0.37	0.3	32.5	3.58
217	3	53	4	6000	4	20	2	3	14	1	0.5	30	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.36	0.37	0.3	32.5	3.58
218	3	53	4	6000	5	18	1	3	14	1	0.5	30	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.36	0.37	0.3	32.5	3.58
219	3	53	4	6000	6	14	1	4	14	1	0.5	30	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.36	0.37	0.3	32.5	3.58
220	3	53	4	6000	7	13	2	4	14	1	0.5	30	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.36	0.37	0.3	32.5	3.58
221	3	53	4	6000	8	12	2	4	14	1	0.5	30	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.36	0.37	0.3	32.5	3.58
222	3	53	4	6000	9	11	2	4	14	1	0.5	30	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.36	0.37	0.3	32.5	3.58
223	3	53	4	6000	10	10	1	4	14	1	0.5	30	0	0	60	2	2	0	1	9.9	1	0.6	0.5	1	1.36	0.37	0.3	32.5	3.58
224	3	54	4	6000	1	55	1	1	1	4	10	15	7	10	1	4	3	1	1	9.9	1	0.6	0.25	0.07	1.37	0.08	0.15	0.87	0.01
225	3	54	4	6000	2	51	2	2	1	4	10	15	7	10	1	4	3	1	1	9.9	1	0.6	0.25	0.07	1.37	0.08	0.15	0.87	0.01
226	3	54	4	6000	3	17	2	3	1	4	10	15	7	10	1	4	3	1	1	9.9	1	0.6	0.25	0.07	1.37	0.08	0.15	0.87	0.01
227	3	54	4	6000	4	15	1	3	1	4	10	15	7	10	1	4	3	1	1	9.9	1	0.6	0.25	0.07	1.37	0.08	0.15	0.87	0.01
228	3	54	4	6000	5	14	1	4	1	4	10	15	7	10	1	4	3	1	1	9.9	1	0.6	0.25	0.07	1.37	0.08	0.15	0.87	0.01
229	3	54	4	6000	6	10	2	4	1	4	10	15	7	10	1	4	3	1	1	9.9	1	0.6	0.25	0.07	1.37	0.08	0.15	0.87	0.01
230	3	55	2	4500	1	37	1	1	1	4	0	1	7	100	1	4	2	0	1	7.43	1	0.6	0.25	0.02	1.38	1	0.15	0.13	0.02
231	3	55	2	4500	2	36	2	2	1	4	0	1	7	100	1	4	2	0	1	7.43	1	0.6	0.25	0.02	1.38	1	0.15	0.13	0.02
232	3	55	2	4500	3	7	1	4	1	4	0	1	7	100	1	4	2	0	1	7.43	1	0.6	0.25	0.02	1.38	1	0.15	0.13	0.02
233	3	56	2	4000	1	40	1	1	1	4	1	30	0	0	1	4	3	0	1	6.6	1	0.6	0.25	0.02	1.36	0.37	0.15	0.13	0.01
234	3	56	2	4000	2	40	2	2	1	4	1	30	0	0	1	4	3	0	1	6.6	1	0.6	0.25	0.02	1.36	0.37	0.15	0.13	0.01
235	3	56	2	4000	3	13	2	4	1	4	1	30	0	0	1	4	3	0	1	6.6	1	0.6	0.25	0.02	1.36	0.37	0.15	0.13	0.01
236	3	56	2	4000	4	12	1	4	1	4	1	30	0	0	1	4	3	0	1	6.6	1	0.6	0.25	0.02	1.36	0.37	0.15	0.13	0.01
237	3	56	2	4000	5	8	1	4	1	4	1	30	0	0	1	4	3	0	1	6.6	1	0.6	0.25	0.02	1.36	0.37	0.15	0.13	0.01
238	3	56	2	4000	6	6	2	4	1	4	1	30	0	0	1	4	3	0	1	6.6	1	0.6	0.25	0.02	1.36	0.37	0.15	0.13	0.01
239	3	57	2	4500	1	40	1	1	1	4	0.5	30	0	0	30	4	3	0	1	7.43	1	0.6	0.25	1	1.36	0.37	0.15	32.5	1.79

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
240	3	57	2	4500	2	38	2	2	1	4	0.5	30	0	0	30	4	3	0	1	7.43	1	0.6	0.25	1	1.36	0.37	0.15	32.5	1.79
241	3	57	2	4500	3	13	2	4	1	4	0.5	30	0	0	30	4	3	0	1	7.43	1	0.6	0.25	1	1.36	0.37	0.15	32.5	1.79
242	3	57	2	4500	4	9	1	4	1	4	0.5	30	0	0	30	4	3	0	1	7.43	1	0.6	0.25	1	1.36	0.37	0.15	32.5	1.79
243	3	58	2	450	1	50	1	1	1	4	0.5	10	0	0	120	4	2	0	1	0.74	1	0.6	0.25	0.92	1.37	0.72	0.15	32.3	3.46
244	3	58	2	450	2	48	2	2	1	4	0.5	10	0	0	120	4	2	0	1	0.74	1	0.6	0.25	0.92	1.37	0.72	0.15	32.3	3.46
245	3	58	2	450	3	14	1	4	1	4	0.5	10	0	0	120	4	2	0	1	0.74	1	0.6	0.25	0.92	1.37	0.72	0.15	32.3	3.46
246	3	58	2	450	4	10	2	4	1	4	0.5	10	0	0	120	4	2	0	1	0.74	1	0.6	0.25	0.92	1.37	0.72	0.15	32.3	3.46
247	3	59	2	6000	1	43	1	1	1	4	0.5	15	0	0	1	4	3	0	1	9.9	1	0.6	0.25	0.03	1.37	0.61	0.15	0.34	0.03
248	3	59	2	6000	2	40	2	2	1	4	0.5	15	0	0	1	4	3	0	1	9.9	1	0.6	0.25	0.03	1.37	0.61	0.15	0.34	0.03
249	3	59	2	6000	3	13	1	4	1	4	0.5	15	0	0	1	4	3	0	1	9.9	1	0.6	0.25	0.03	1.37	0.61	0.15	0.34	0.03
250	3	59	2	6000	4	10	2	4	1	4	0.5	15	0	0	1	4	3	0	1	9.9	1	0.6	0.25	0.03	1.37	0.61	0.15	0.34	0.03
251	3	59	2	6000	5	9	1	4	1	4	0.5	15	0	0	1	4	3	0	1	9.9	1	0.6	0.25	0.03	1.37	0.61	0.15	0.34	0.03
252	3	60	2	4000	1	36	1	1	1	4	0.5	30	1	0	60	3	4	0	1	6.6	1	0.6	0.33	1	1.36	0.37	0.2	32.5	2.39
253	3	60	2	4000	2	33	2	2	1	4	0.5	30	1	0	60	3	4	0	1	6.6	1	0.6	0.33	1	1.36	0.37	0.2	32.5	2.39
254	3	60	2	4000	3	13	2	4	1	4	0.5	30	1	0	60	3	4	0	1	6.6	1	0.6	0.33	1	1.36	0.37	0.2	32.5	2.39
255	3	60	2	4000	4	12	2	4	1	4	0.5	30	1	0	60	3	4	0	1	6.6	1	0.6	0.33	1	1.36	0.37	0.2	32.5	2.39
256	3	60	2	4000	5	11	1	4	1	4	0.5	30	1	0	60	3	4	0	1	6.6	1	0.6	0.33	1	1.36	0.37	0.2	32.5	2.39
257	4	61	2	3655	1	38	1	1	12	4	12	42	7	48	360	0	1	4	1	6.03	0.95	0.4	1	3	1.35	0	0.38	134	0
258	4	61	2	3655	2	30	2	2	12	4	12	42	7	48	360	0	1	4	1	6.03	0.95	0.4	1	3	1.35	0	0.38	134	0
259	4	61	2	3655	3	6	1	4	12	4	12	42	7	48	360	0	1	4	1	6.03	0.95	0.4	1	3	1.35	0	0.38	134	0
260	4	61	2	3655	4	4	1	4	12	4	12	42	7	48	360	0	1	4	1	6.03	0.95	0.4	1	3	1.35	0	0.38	134	0
261	4	61	2	3655	5	3	2	4	12	4	12	42	7	48	360	0	1	4	1	6.03	0.95	0.4	1	3	1.35	0	0.38	134	0
262	4	62	2	3300	1	25	1	1	0	0	0	0	0	0	0	0	0	0	1	5.45	0.95	0.4	1	0	1.38	1	0.38	0	0
263	4	62	2	3300	2	22	2	2	0	0	0	0	0	0	0	0	0	0	1	5.45	0.95	0.4	1	0	1.38	1	0.38	0	0
264	4	62	2	3300	3	3	2	4	0	0	0	0	0	0	0	0	0	0	1	5.45	0.95	0.4	1	0	1.38	1	0.38	0	0
265	4	63	2	3000	1	32	1	1	23	4	67	100	7	55	600	0	0	0.82	1	4.95	0.95	0.4	1	5	1.3	0	0.38	175	0
266	4	63	2	3000	2	27	2	2	23	4	67	100	7	55	600	0	0	0.82	1	4.95	0.95	0.4	1	5	1.3	0	0.38	175	0
267	4	63	2	3000	3	4	1	4	23	4	67	100	7	55	600	0	0	0.82	1	4.95	0.95	0.4	1	5	1.3	0	0.38	175	0
268	4	64	4	3000	1	60	1	1	21	4	12	10	5	225	600	0	0	18.8	1	4.95	0.95	0.4	1	5	1.37	0	0.38	328	0
269	4	64	4	3000	2	40	2	2	21	4	12	10	5	225	600	0	0	18.8	1	4.95	0.95	0.4	1	5	1.37	0	0.38	328	0
270	4	64	4	3000	3	18	1	3	21	4	12	10	5	225	600	0	0	18.8	1	4.95	0.95	0.4	1	5	1.37	0	0.38	328	0
271	4	64	4	3000	4	15	1	3	21	4	12	10	5	225	600	0	0	18.8	1	4.95	0.95	0.4	1	5	1.37	0	0.38	328	0
272	4	64	4	3000	5	6	2	4	21	4	12	10	5	225	600	0	0	18.8	1	4.95	0.95	0.4	1	5	1.37	0	0.38	328	0
273	4	64	4	3000	6	4	1	4	21	4	12	10	5	225	600	0	0	18.8	1	4.95	0.95	0.4	1	5	1.37	0	0.38	328	0
274	4	65	2	2400	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	3.96	0.95	0.4	1	0	1.38	1	0.38	0	0
275	4	65	2	2400	2	30	2	2	0	0	0	0	0	0	0	0	0	0	1	3.96	0.95	0.4	1	0	1.38	1	0.38	0	0
276	4	65	2	2400	3	8	1	4	0	0	0	0	0	0	0	0	0	0	1	3.96	0.95	0.4	1	0	1.38	1	0.38	0	0
277	4	65	2	2400	4	6	1	4	0	0	0	0	0	0	0	0	0	0	1	3.96	0.95	0.4	1	0	1.38	1	0.38	0	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
278	4	65	2	2400	5	3	2	4	0	0	0	0	0	0	0	0	0	0	1	3.96	0.95	0.4	1	0	1.38	1	0.38	0	0
279	4	66	2	1500	1	38	1	1	123	4	68	120	7	52	600	0	0	0.76	1	2.48	0.95	0.4	1	20	1.28	0	0.38	867	0
280	4	66	2	1500	2	30	2	2	123	4	68	120	7	52	600	0	0	0.76	1	2.48	0.95	0.4	1	20	1.28	0	0.38	867	0
281	4	66	2	1500	3	4	1	4	123	4	68	120	7	52	600	0	0	0.76	1	2.48	0.95	0.4	1	20	1.28	0	0.38	867	0
282	4	67	4	4000	1	40	1	1	123	4	30	30	5	500	600	0	0	16.7	1	6.6	0.95	0.4	1	5	1.36	0	0.38	289	0
283	4	67	4	4000	2	35	2	2	123	4	30	30	5	500	600	0	0	16.7	1	6.6	0.95	0.4	1	5	1.36	0	0.38	289	0
284	4	67	4	4000	3	16	1	3	123	4	30	30	5	500	600	0	0	16.7	1	6.6	0.95	0.4	1	5	1.36	0	0.38	289	0
285	4	67	4	4000	4	14	1	4	123	4	30	30	5	500	600	0	0	16.7	1	6.6	0.95	0.4	1	5	1.36	0	0.38	289	0
286	4	67	4	4000	5	11	2	4	123	4	30	30	5	500	600	0	0	16.7	1	6.6	0.95	0.4	1	5	1.36	0	0.38	289	0
287	4	67	4	4000	6	8	2	4	123	4	30	30	5	500	600	0	0	16.7	1	6.6	0.95	0.4	1	5	1.36	0	0.38	289	0
288	4	68	2	3600	1	30	1	1	12	4	0.5	10	0	0	180	0	0	0	1	5.94	0.95	0.4	1	1.5	1.37	0.72	0.38	62.9	17.2
289	4	68	2	3600	2	27	2	2	12	4	0.5	10	0	0	180	0	0	0	1	5.94	0.95	0.4	1	1.5	1.37	0.72	0.38	62.9	17.2
290	4	68	2	3600	3	2	1	4	12	4	0.5	10	0	0	180	0	0	0	1	5.94	0.95	0.4	1	1.5	1.37	0.72	0.38	62.9	17.2
291	4	68	2	3600	4	1	1	4	12	4	0.5	10	0	0	180	0	0	0	1	5.94	0.95	0.4	1	1.5	1.37	0.72	0.38	62.9	17.2
292	4	69	2	4000	1	25	1	1	12	4	0.5	10	0	0	600	0	0	0	1	6.6	0.95	0.4	1	10	1.37	0.72	0.38	848	232
293	4	69	2	4000	2	23	2	2	12	4	0.5	10	0	0	600	0	0	0	1	6.6	0.95	0.4	1	10	1.37	0.72	0.38	848	232
294	4	69	2	4000	3	3	2	4	12	4	0.5	10	0	0	600	0	0	0	1	6.6	0.95	0.4	1	10	1.37	0.72	0.38	848	232
295	4	70	2	3750	1	22	1	1	12	4	0.5	10	0	0	600	0	0	0	1	6.19	0.95	0.4	1	10	1.37	0.72	0.38	848	232
296	4	70	2	3750	2	19	2	2	12	4	0.5	10	0	0	600	0	0	0	1	6.19	0.95	0.4	1	10	1.37	0.72	0.38	848	232
297	4	70	2	3750	3	5	1	4	12	4	0.5	10	0	0	600	0	0	0	1	6.19	0.95	0.4	1	10	1.37	0.72	0.38	848	232
298	4	70	2	3750	4	2	1	4	12	4	0.5	10	0	0	600	0	0	0	1	6.19	0.95	0.4	1	10	1.37	0.72	0.38	848	232
299	4	71	2	3858	1	32	1	1	123	4	0.5	10	0	0	600	0	0	0	1	6.37	0.95	0.4	1	10	1.37	0.72	0.38	848	232
300	4	71	2	3858	2	30	2	2	123	4	0.5	10	0	0	600	0	0	0	1	6.37	0.95	0.4	1	10	1.37	0.72	0.38	848	232
301	4	71	2	3858	3	4	2	4	123	4	0.5	10	0	0	600	0	0	0	1	6.37	0.95	0.4	1	10	1.37	0.72	0.38	848	232
302	4	72	1	2500	1	25	1	1	12	4	0.5	10	0	0	600	0	1	0	1	4.13	0.95	0.4	1	10	1.37	0.72	0.38	848	232
303	4	72	1	2500	2	22	2	2	12	4	0.5	10	0	0	600	0	1	0	1	4.13	0.95	0.4	1	10	1.37	0.72	0.38	848	232
304	4	73	2	3000	1	25	1	1	123	4	12	40	7	30	600	0	0	2.5	1	4.95	0.95	0.4	1	10	1.35	0	0.38	691	0
305	4	73	2	3000	2	23	2	2	123	4	12	40	7	30	600	0	0	2.5	1	4.95	0.95	0.4	1	10	1.35	0	0.38	691	0
306	4	73	2	3000	3	3	1	4	123	4	12	40	7	30	600	0	0	2.5	1	4.95	0.95	0.4	1	10	1.35	0	0.38	691	0
307	4	74	2	3500	1	23	1	1	123	4	12	15	5	250	600	0	0	20.8	1	5.78	0.95	0.4	1	10	1.37	0	0.38	821	0
308	4	74	2	3500	2	22	2	2	123	4	12	15	5	250	600	0	0	20.8	1	5.78	0.95	0.4	1	10	1.37	0	0.38	821	0
309	4	74	2	3500	3	6	1	4	123	4	12	15	5	250	600	0	0	20.8	1	5.78	0.95	0.4	1	10	1.37	0	0.38	821	0
310	4	75	1	3000	1	26	1	1	12	4	0.5	10	0	0	600	0	0	0	1	4.95	0.95	0.4	1	10	1.37	0.72	0.38	848	232
311	4	75	1	3000	2	22	1	2	12	4	0.5	10	0	0	600	0	0	0	1	4.95	0.95	0.4	1	10	1.37	0.72	0.38	848	232
312	4	76	2	3000	1	25	1	1	123	4	0.5	10	0	0	600	0	0	0	1	4.95	0.95	0.4	1	10	1.37	0.72	0.38	848	232
313	4	76	2	3000	2	20	2	2	123	4	0.5	10	0	0	600	0	0	0	1	4.95	0.95	0.4	1	10	1.37	0.72	0.38	848	232
314	4	76	2	3000	3	2	2	4	123	4	0.5	10	0	0	600	0	0	0	1	4.95	0.95	0.4	1	10	1.37	0.72	0.38	848	232
315	4	77	2	4500	1	28	1	1	123	4	67	100	7	30	600	0	0	0.45	1	7.43	0.95	0.4	1	10	1.3	0	0.38	429	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
316	4	77	2	4500	2	25	2	2	123	4	67	100	7	30	600	0	0	0.45	1	7.43	0.95	0.4	1	10	1.3	0	0.38	429	0
317	4	77	2	4500	3	5	2	4	123	4	67	100	7	30	600	0	0	0.45	1	7.43	0.95	0.4	1	10	1.3	0	0.38	429	0
318	4	77	2	4500	4	2	1	4	123	4	67	100	7	30	600	0	0	0.45	1	7.43	0.95	0.4	1	10	1.3	0	0.38	429	0
319	4	78	2	3600	1	27	1	1	123	4	12	15	5	300	600	0	0	25	1	5.94	0.95	0.4	1	5	1.37	0	0.38	318	0
320	4	78	2	3600	2	25	2	2	123	4	12	15	5	300	600	0	0	25	1	5.94	0.95	0.4	1	5	1.37	0	0.38	318	0
321	4	78	2	3600	3	7	1	4	123	4	12	15	5	300	600	0	0	25	1	5.94	0.95	0.4	1	5	1.37	0	0.38	318	0
322	4	79	2	6000	1	23	1	1	123	4	0.5	10	0	0	600	0	0	0	1	9.9	0.95	0.4	1	5	1.37	0.72	0.38	328	89.8
323	4	79	2	6000	2	20	2	2	123	4	0.5	10	0	0	600	0	0	0	1	9.9	0.95	0.4	1	5	1.37	0.72	0.38	328	89.8
324	4	79	2	6000	3	3	1	4	123	4	0.5	10	0	0	600	0	0	0	1	9.9	0.95	0.4	1	5	1.37	0.72	0.38	328	89.8
325	4	80	1	9000	1	40	1	1	12	4	12	15	5	300	600	0	0	25	1	14.9	0.95	0.4	1	5	1.37	0	0.38	318	0
326	4	80	1	9000	2	35	2	2	12	4	12	15	5	300	600	0	0	25	1	14.9	0.95	0.4	1	5	1.37	0	0.38	318	0
327	5	81	2	10000	1	32	1	1	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.2	1	0	1.38	1	0.2	0	0
328	5	81	2	10000	2	27	2	2	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.2	1	0	1.38	1	0.2	0	0
329	5	81	2	10000	3	11	1	4	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.2	1	0	1.38	1	0.2	0	0
330	5	81	2	10000	4	7	2	4	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.2	1	0	1.38	1	0.2	0	0
331	5	81	2	10000	5	2	2	4	0	0	0	0	0	0	0	0	0	0	1	16.5	1	0.2	1	0	1.38	1	0.2	0	0
332	5	82	1	5000	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	8.25	1	0.2	1	0	1.38	1	0.2	0	0
333	5	82	1	5000	2	25	2	2	0	0	0	0	0	0	0	0	0	0	1	8.25	1	0.2	1	0	1.38	1	0.2	0	0
334	5	83	2	8000	1	50	1	1	0	0	0	0	0	0	0	0	0	0	1	13.2	1	0.2	1	0	1.38	1	0.2	0	0
335	5	83	2	8000	2	43	2	2	0	0	0	0	0	0	0	0	0	0	1	13.2	1	0.2	1	0	1.38	1	0.2	0	0
336	5	83	2	8000	3	12	1	4	0	0	0	0	0	0	0	0	0	0	1	13.2	1	0.2	1	0	1.38	1	0.2	0	0
337	5	84	1	6000	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	9.9	1	0.2	1	0	1.38	1	0.2	0	0
338	5	84	1	6000	2	20	2	2	0	0	0	0	0	0	0	0	0	0	1	9.9	1	0.2	1	0	1.38	1	0.2	0	0
339	5	85	1	6000	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	9.9	1	0.2	1	0	1.38	1	0.2	0	0
340	5	85	1	6000	2	25	2	2	0	0	0	0	0	0	0	0	0	0	1	9.9	1	0.2	1	0	1.38	1	0.2	0	0
341	5	86	1	4500	1	20	1	1	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.2	1	0	1.38	1	0.2	0	0
342	5	86	1	4500	2	20	2	2	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.2	1	0	1.38	1	0.2	0	0
343	5	87	1	4500	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.2	1	0	1.38	1	0.2	0	0
344	5	87	1	4500	2	20	2	2	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.2	1	0	1.38	1	0.2	0	0
345	5	88	2	11000	1	50	1	1	0	0	0	0	0	0	0	0	0	0	1	18.2	1	0.2	1	0	1.38	1	0.2	0	0
346	5	88	2	11000	2	40	2	2	0	0	0	0	0	0	0	0	0	0	1	18.2	1	0.2	1	0	1.38	1	0.2	0	0
347	5	88	2	11000	3	10	2	4	0	0	0	0	0	0	0	0	0	0	1	18.2	1	0.2	1	0	1.38	1	0.2	0	0
348	5	89	1	4500	1	50	1	1	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.2	1	0	1.38	1	0.2	0	0
349	5	89	1	4500	2	35	2	2	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.2	1	0	1.38	1	0.2	0	0
350	5	90	1	4500	1	26	1	1	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.2	1	0	1.38	1	0.2	0	0
351	5	90	1	4500	2	20	2	2	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.2	1	0	1.38	1	0.2	0	0
352	5	91	1	2000	1	60	1	1	0	0	0	0	0	0	0	0	0	0	1	3.3	1	0.2	1	0	1.38	1	0.2	0	0
353	5	91	1	2000	2	40	2	2	0	0	0	0	0	0	0	0	0	0	1	3.3	1	0.2	1	0	1.38	1	0.2	0	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
354	5	92	1	3000	1	21	1	1	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.2	1	0	1.38	1	0.2	0	0
355	5	92	1	3000	2	20	2	2	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.2	1	0	1.38	1	0.2	0	0
356	5	93	1	5500	1	28	1	1	0	0	0	0	0	0	0	0	0	0	1	9.08	1	0.2	1	0	1.38	1	0.2	0	0
357	5	93	1	5500	2	20	2	2	0	0	0	0	0	0	0	0	0	0	1	9.08	1	0.2	1	0	1.38	1	0.2	0	0
358	5	94	1	3000	1	27	1	1	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.2	1	0	1.38	1	0.2	0	0
359	5	94	1	3000	2	20	2	2	0	0	0	0	0	0	0	0	0	0	1	4.95	1	0.2	1	0	1.38	1	0.2	0	0
360	5	95	1	4500	1	26	1	1	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.2	1	0	1.38	1	0.2	0	0
361	5	95	1	4500	2	20	2	2	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.2	1	0	1.38	1	0.2	0	0
362	5	96	2	5600	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	9.24	1	0.2	1	0	1.38	1	0.2	0	0
363	5	96	2	5600	2	21	2	2	0	0	0	0	0	0	0	0	0	0	1	9.24	1	0.2	1	0	1.38	1	0.2	0	0
364	5	96	2	5600	3	4	1	4	0	0	0	0	0	0	0	0	0	0	1	9.24	1	0.2	1	0	1.38	1	0.2	0	0
365	5	97	1	3500	1	27	1	1	0	0	0	0	0	0	0	0	0	0	1	5.78	1	0.2	1	0	1.38	1	0.2	0	0
366	5	97	1	3500	2	20	2	2	0	0	0	0	0	0	0	0	0	0	1	5.78	1	0.2	1	0	1.38	1	0.2	0	0
367	5	98	1	4000	1	33	1	1	0	0	0	0	0	0	0	0	0	0	1	6.6	1	0.2	1	0	1.38	1	0.2	0	0
368	5	98	1	4000	2	20	2	2	0	0	0	0	0	0	0	0	0	0	1	6.6	1	0.2	1	0	1.38	1	0.2	0	0
369	5	99	1	4500	1	30	1	1	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.2	1	0	1.38	1	0.2	0	0
370	5	99	1	4500	2	22	2	2	0	0	0	0	0	0	0	0	0	0	1	7.43	1	0.2	1	0	1.38	1	0.2	0	0
371	5	100	2	4000	1	28	1	1	0	0	0	0	0	0	0	0	0	0	1	6.6	1	0.2	1	0	1.38	1	0.2	0	0
372	5	100	2	4000	2	26	2	2	0	0	0	0	0	0	0	0	0	0	1	6.6	1	0.2	1	0	1.38	1	0.2	0	0
373	5	100	2	4000	3	5	2	4	0	0	0	0	0	0	0	0	0	0	1	6.6	1	0.2	1	0	1.38	1	0.2	0	0

EXPLANATION OF LEGENDS AND VALUES USED

IDENTIFICATION		ACTIVITY DATA		DERIVED PARAMETERS		BM COMPONENTS	
IDNUM	Individual ID (Global)	ID	Individual responsible	m	Cost per km	BM1	Transporation component
CLUST	Cluster Number	FRQ	Frequency	RELE	Activity relevance (0,1)	BM2	Spatial component
HHN	Household Number	DST	Distance (one way)	ALPHAI	Value of time parameter	BM3	Temporal component
LCS	Life Cycle Stage	TTI	Travel time (one way)	RHO	Level of activity parameter	BM	Accessibility benefits measure
HHINC	Household Income	MOD	Travel mode	c	Model calibration parameter		
ID2.1	Household Individual ID	CST	Travel cost	omega	Activity attraction parameter		
AGE	Age	ATI	Activity duration	h	Temporal utility measure		
SEX	Sex	SCA	Scale	GAMMA	Marginal utility of time		
type	Individual Type	LOC	Number of locations				

TABLE D-2 BM DEVELOPMENT FOR ALL INDIVIDUALS (KHUZDAR)

ACTIVITY= WORK 1 <<CODE

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
1	1	1	4	22000	1	60	1	1	1		2	45	0	0	360			0	1	146	0.44	0.5	1	1	1.35	0.22	0.22	30	1.49
2	1	1	4	22000	2	35	2	2	0		0	0	0	0	0			0	1	146	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
3	1	1	4	22000	3	25	1	3	1		2	45	0	0	360			0	0	146	0.44	0.5	0	1	0	0.22	0	1	0
4	1	1	4	22000	4	20	2	3	1		0	0	0	0	240			0	0	146	0.44	0.5	0	1	0	1	0	1	0
5	1	1	4	22000	5	22	1	3	1		2	45	0	0	360			0	0	146	0.44	0.5	0	1	0	0.22	0	1	0
6	1	1	4	22000	6	16	2	3	1		0	0	0	0	240			0	0	146	0.44	0.5	0	1	0	1	0	1	0
7	1	1	4	22000	7	6	1	4	0		0	0	0	0	0			0	0	146	0.44	0.5	0	1	0	1	0	1	0
8	1	1	4	22000	8	2	1	4	0		0	0	0	0	0			0	0	146	0.44	0.5	0	1	0	1	0	1	0
9	1	2	4	2000	1	43	1	1	1		0	0	0	0	0			0	1	13.3	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
10	1	2	4	2000	2	40	2	2	0		0	0	0	0	0			0	1	13.3	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
11	1	2	4	2000	3	20	1	3	1		7	15	7	10	720			1.43	0	13.3	0.44	0.5	0	1	0	0.13	0	1	0
12	1	2	4	2000	4	12	2	4	0		0	0	0	0	0			0	0	13.3	0.44	0.5	0	1	0	1	0	1	0
13	1	2	4	2000	5	10	1	4	0		0	0	0	0	0			0	0	13.3	0.44	0.5	0	1	0	1	0	1	0
14	1	2	4	2000	6	8	1	4	0		0	0	0	0	0			0	0	13.3	0.44	0.5	0	1	0	1	0	1	0
15	1	2	4	2000	7	7	2	4	0		0	0	0	0	0			0	0	13.3	0.44	0.5	0	1	0	1	0	1	0
16	1	2	4	2000	8	5	1	4	0		0	0	0	0	0			0	0	13.3	0.44	0.5	0	1	0	1	0	1	0
17	1	2	4	2000	9	2	1	4	0		0	0	0	0	0			0	0	13.3	0.44	0.5	0	1	0	1	0	1	0
18	1	3	4	3500	1	50	1	1	1		25	0	0	0	540			0	1	23.3	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
19	1	3	4	3500	2	45	2	2	0		0	0	0	0	0			0	1	23.3	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
20	1	3	4	3500	3	25	1	3	1		25	0	0	0	540			0	0	23.3	0.44	0.5	0	1	0	1	0	1	0
21	1	3	4	3500	4	18	1	3	0		0	0	0	0	0			0	0	23.3	0.44	0.5	0	1	0	1	0	1	0
22	1	3	4	3500	5	10	2	4	0		0	0	0	0	0			0	0	23.3	0.44	0.5	0	1	0	1	0	1	0
23	1	3	4	3500	6	7	2	4	0		0	0	0	0	0			0	0	23.3	0.44	0.5	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
24	1	3	4	3500	7	3	1	4	0		0	0	0	0	0			0	0	23.3	0.44	0.5	0	1	0	1	0	1	0
25	1	4	2	2000	1	35	1	1	1		7	15	7	10	480			1.43	1	13.3	0.44	0.5	1	1	1.37	0.13	0.22	35.2	1.05
26	1	4	2	2000	2	27	2	2	0		0	0	0	0	0			0	1	13.3	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
27	1	4	2	2000	3	5	1	4	0		0	0	0	0	0			0	0	13.3	0.44	0.5	0	1	0	1	0	1	0
28	1	4	2	2000	4	3	1	4	0		0	0	0	0	0			0	0	13.3	0.44	0.5	0	1	0	1	0	1	0
29	1	4	2	2000	5	1	2	4	0		0	0	0	0	0			0	0	13.3	0.44	0.5	0	1	0	1	0	1	0
30	1	5	2	3000	1	40	1	1	1		0.5	20	0	0	300			0	1	20	0.44	0.5	1	1	1.36	0.51	0.22	34.3	3.91
31	1	5	2	3000	2	30	2	2	0		0	0	0	0	0			0	1	20	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
32	1	5	2	3000	3	5	2	4	0		0	0	0	0	0			0	0	20	0.44	0.5	0	1	0	1	0	1	0
33	1	6	1	8000	1	28	1	1	1		4	15	5	0	360			0	1	53.2	0.44	0.5	1	1	1.37	0.61	0.22	35.2	4.74
34	1	6	1	8000	2	60	2	2	0		0	0	0	0	0			0	1	53.2	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
35	1	6	1	8000	3	26	1	3	0		0	0	0	0	0			0	0	53.2	0.44	0.5	0	1	0	1	0	1	0
36	1	6	1	8000	4	23	1	3	0		0	0	0	0	0			0	0	53.2	0.44	0.5	0	1	0	1	0	1	0
37	1	7	2	2000	1	30	1	1	1		7	30	7	0	600			0	1	13.3	0.44	0.5	1	1	1.36	0.37	0.22	32.5	2.66
38	1	7	2	2000	2	25	2	2	0		0	0	0	0	0			0	1	13.3	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
39	1	7	2	2000	3	3	1	4	0		0	0	0	0	0			0	0	13.3	0.44	0.5	0	1	0	1	0	1	0
40	1	7	2	2000	4	1	1	4	0		0	0	0	0	0			0	0	13.3	0.44	0.5	0	1	0	1	0	1	0
41	1	8	2	5000	1	40	1	1	1		1.5	15	0	0	420			0	1	33.3	0.44	0.5	1	1	1.37	0.61	0.22	35.2	4.74
42	1	8	2	5000	2	35	2	2	0		0	0	0	0	0			0	1	33.3	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
43	1	8	2	5000	3	80	2	3	0		0	0	0	0	0			0	0	33.3	0.44	0.5	0	1	0	1	0	1	0
44	1	8	2	5000	4	15	2	3	0		0	0	0	0	0			0	0	33.3	0.44	0.5	0	1	0	1	0	1	0
45	1	8	2	5000	5	13	1	4	0		0	0	0	0	0			0	0	33.3	0.44	0.5	0	1	0	1	0	1	0
46	1	9	4	7000	1	40	1	1	1		0.5	10	2	0	420			0	1	46.6	0.44	0.5	1	1	1.37	0.72	0.22	36.1	5.75
47	1	9	4	7000	2	35	2	2	0		0	0	0	0	0			0	1	46.6	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
48	1	9	4	7000	3	18	1	3	0		0	0	0	0	0			0	0	46.6	0.44	0.5	0	1	0	1	0	1	0
49	1	9	4	7000	4	8	1	4	0		0	0	0	0	0			0	0	46.6	0.44	0.5	0	1	0	1	0	1	0
50	1	9	4	7000	5	5	2	4	0		0	0	0	0	0			0	0	46.6	0.44	0.5	0	1	0	1	0	1	0
51	1	10	4	1500	1	45	1	1	1		20	0	0	0	600			0	1	9.98	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
52	1	10	4	1500	2	32	2	2	0		0	0	0	0	0			0	1	9.98	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
53	1	10	4	1500	3	21	1	3	0		0	0	0	0	0			0	0	9.98	0.44	0.5	0	1	0	1	0	1	0
54	1	10	4	1500	4	18	1	3	0		0	0	0	0	0			0	0	9.98	0.44	0.5	0	1	0	1	0	1	0
55	1	10	4	1500	5	15	2	3	0		0	0	0	0	0			0	0	9.98	0.44	0.5	0	1	0	1	0	1	0
56	1	10	4	1500	6	10	2	4	0		0	0	0	0	0			0	0	9.98	0.44	0.5	0	1	0	1	0	1	0
57	1	10	4	1500	7	6	1	4	0		0	0	0	0	0			0	0	9.98	0.44	0.5	0	1	0	1	0	1	0
58	1	11	4	9500	1	75	1	1	0		0	0	0	0	0			0	1	63.2	0.44	0.5	1	1	1.38	1	0.22	37.9	8.43
59	1	11	4	9500	2	43	1	2	1		1.5	15	5	0	420			0	1	63.2	0.44	0.5	1	1	1.37	0.61	0.22	35.2	4.74

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
60	1	11	4	9500	3	36	2	3	0		0	0	0	0	0			0	0	63.2	0.44	0.5	0	1	0	1	0	1	0
61	1	11	4	9500	4	37	1	3	1		1.5	30	4	0	360			0	0	63.2	0.44	0.5	0	1	0	0.37	0	1	0
62	1	11	4	9500	5	26	2	3	0		0	0	0	0	0			0	0	63.2	0.44	0.5	0	1	0	1	0	1	0
63	1	11	4	9500	6	18	1	3	0		0	0	0	0	0			0	0	63.2	0.44	0.5	0	1	0	1	0	1	0
64	1	11	4	9500	7	7	1	4	0		0	0	0	0	0			0	0	63.2	0.44	0.5	0	1	0	1	0	1	0
65	1	11	4	9500	8	10	1	4	0		0	0	0	0	0			0	0	63.2	0.44	0.5	0	1	0	1	0	1	0
66	1	11	4	9500	9	16	1	3	0		0	0	0	0	0			0	0	63.2	0.44	0.5	0	1	0	1	0	1	0
67	1	11	4	9500	10	6	1	4	0		0	0	0	0	0			0	0	63.2	0.44	0.5	0	1	0	1	0	1	0
68	2	12	4	1500	1	30	1	1	1		7	60	0	0	480			0	1	9.98	0.25	0.5	1	1	1.33	0.14	0.13	27.6	0.47
69	2	12	4	1500	2	45	2	2	0		0	0	0	0	0			0	1	9.98	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
70	2	12	4	1500	3	25	2	3	0		0	0	0	0	0			0	0	9.98	0.25	0.5	0	1	0	1	0	1	0
71	2	12	4	1500	4	22	2	3	0		0	0	0	0	0			0	0	9.98	0.25	0.5	0	1	0	1	0	1	0
72	2	12	4	1500	5	15	1	3	0		0	0	0	0	0			0	0	9.98	0.25	0.5	0	1	0	1	0	1	0
73	2	12	4	1500	6	8	1	4	0		0	0	0	0	0			0	0	9.98	0.25	0.5	0	1	0	1	0	1	0
74	2	12	4	1500	7	1	2	4	0		0	0	0	0	0			0	0	9.98	0.25	0.5	0	1	0	1	0	1	0
75	2	13	3	3500	1	40	1	1	1		8	40	7	5	600			0.63	1	23.3	0.25	0.5	1	1	1.35	0.17	0.13	30.8	0.66
76	2	13	3	3500	2	35	2	2	0		0	0	0	0	0			0	1	23.3	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
77	2	13	3	3500	3	16	1	3	0		0	0	0	0	0			0	0	23.3	0.25	0.5	0	1	0	1	0	1	0
78	2	14	3	3000	1	25	1	1	1		7	10	4	5	360			0.71	1	20	0.25	0.5	1	1	1.37	0.43	0.13	36.1	1.96
79	2	14	3	3000	2	50	2	2	0		0	0	0	0	0			0	1	20	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
80	2	14	3	3000	3	16	2	3	0		0	0	0	0	0			0	0	20	0.25	0.5	0	1	0	1	0	1	0
81	2	15	2	7000	1	49	1	1	1		8	75	0	0	600			0	1	46.6	0.25	0.5	1	1	1.32	0.08	0.13	25.2	0.26
82	2	15	2	7000	2	47	2	2	0		0	0	0	0	0			0	1	46.6	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
83	2	15	2	7000	3	25	2	3	0		0	0	0	0	0			0	0	46.6	0.25	0.5	0	1	0	1	0	1	0
84	2	15	2	7000	4	24	1	3	1		8	25	1	0	720			0	0	46.6	0.25	0.5	0	1	0	0.43	0	1	0
85	2	15	2	7000	5	22	1	3	1		8	25	1	0	720			0	0	46.6	0.25	0.5	0	1	0	0.43	0	1	0
86	2	15	2	7000	6	4	1	4	0		0	0	0	0	0			0	0	46.6	0.25	0.5	0	1	0	1	0	1	0
87	2	15	2	7000	7	3	1	4	0		0	0	0	0	0			0	0	46.6	0.25	0.5	0	1	0	1	0	1	0
88	2	15	2	7000	8	1	1	4	0		0	0	0	0	0			0	0	46.6	0.25	0.5	0	1	0	1	0	1	0
89	2	15	2	7000	9	3	1	4	0		0	0	0	0	0			0	0	46.6	0.25	0.5	0	1	0	1	0	1	0
90	2	15	2	7000	10	2	2	4	0		0	0	0	0	0			0	0	46.6	0.25	0.5	0	1	0	1	0	1	0
91	2	15	2	7000	11	1	1	4	0		0	0	0	0	0			0	0	46.6	0.25	0.5	0	1	0	1	0	1	0
92	2	16	3	8500	1	60	1	1	1		0.5	30	0	0	300			0	1	56.5	0.25	0.5	1	1	1.36	0.37	0.13	32.5	1.5
93	2	16	3	8500	2	55	2	2	0		0	0	0	0	0			0	1	56.5	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
94	2	16	3	8500	3	22	1	3	1		7	60	0	0	300			0	0	56.5	0.25	0.5	0	1	0	0.14	0	1	0
95	2	16	3	8500	4	18	1	3	1		0.5	30	0	0	300			0	0	56.5	0.25	0.5	0	1	0	0.37	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
96	2	17	4	6000	1	50	1	1	1		7	15	7	10	720			1.43	1	39.9	0.25	0.5	1	1	1.37	0.37	0.13	35.2	1.62
97	2	17	4	6000	2	45	2	2	0		0	0	0	0	0			0	1	39.9	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
98	2	17	4	6000	3	30	1	3	1		7	15	7	10	720			1.43	0	39.9	0.25	0.5	0	1	0	0.37	0	1	0
99	2	17	4	6000	4	22	1	3	0		0	0	0	0	0			0	0	39.9	0.25	0.5	0	1	0	1	0	1	0
100	2	17	4	6000	5	15	2	3	0		0	0	0	0	0			0	0	39.9	0.25	0.5	0	1	0	1	0	1	0
101	2	17	4	6000	6	28	2	3	0		0	0	0	0	0			0	0	39.9	0.25	0.5	0	1	0	1	0	1	0
102	2	17	4	6000	7	20	2	3	0		0	0	0	0	0			0	0	39.9	0.25	0.5	0	1	0	1	0	1	0
103	2	17	4	6000	8	12	1	4	0		0	0	0	0	0			0	0	39.9	0.25	0.5	0	1	0	1	0	1	0
104	2	17	4	6000	9	10	1	4	0		0	0	0	0	0			0	0	39.9	0.25	0.5	0	1	0	1	0	1	0
105	2	17	4	6000	10	6	1	4	0		0	0	0	0	0			0	0	39.9	0.25	0.5	0	1	0	1	0	1	0
106	2	18	3	4500	1	45	1	1	1		7	60	0	0	480			0	1	29.9	0.25	0.5	1	1	1.33	0.14	0.13	27.6	0.47
107	2	18	3	4500	2	38	2	2	0		0	0	0	0	0			0	1	29.9	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
108	2	18	3	4500	3	25	1	3	1		7	0	0	0	540			0	0	29.9	0.25	0.5	0	1	0	1	0	1	0
109	2	18	3	4500	4	15	1	3	1		7	0	0	0	540			0	0	29.9	0.25	0.5	0	1	0	1	0	1	0
110	2	18	3	4500	5	20	2	3	0		0	0	0	0	0			0	0	29.9	0.25	0.5	0	1	0	1	0	1	0
111	2	19	2	1500	1	35	1	1	1		0.5	20	0	0	480			0	1	9.98	0.25	0.5	1	1	1.36	0.51	0.13	34.3	2.2
112	2	19	2	1500	2	20	2	2	0		0	0	0	0	0			0	1	9.98	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
113	2	19	2	1500	3	3	2	4	0		0	0	0	0	0			0	0	9.98	0.25	0.5	0	1	0	1	0	1	0
114	2	19	2	1500	4	1	2	4	0		0	0	0	0	0			0	0	9.98	0.25	0.5	0	1	0	1	0	1	0
115	2	20	4	2000	1	45	1	1	1		2	20	0	0	480			0	1	13.3	0.25	0.5	1	1	1.36	0.51	0.13	34.3	2.2
116	2	20	4	2000	2	42	2	2	0		0	0	0	0	0			0	1	13.3	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
117	2	20	4	2000	3	28	1	3	0		0	0	0	0	0			0	0	13.3	0.25	0.5	0	1	0	1	0	1	0
118	2	20	4	2000	4	22	2	3	0		0	0	0	0	0			0	0	13.3	0.25	0.5	0	1	0	1	0	1	0
119	2	20	4	2000	5	16	2	3	0		0	0	0	0	0			0	0	13.3	0.25	0.5	0	1	0	1	0	1	0
120	2	20	4	2000	6	3	1	4	0		0	0	0	0	0			0	0	13.3	0.25	0.5	0	1	0	1	0	1	0
121	2	20	4	2000	7	1	2	4	0		0	0	0	0	0			0	0	13.3	0.25	0.5	0	1	0	1	0	1	0
122	2	21	4	5500	1	60	1	1	1		7	60	0	0	360			0	1	36.6	0.25	0.5	1	1	1.33	0.14	0.13	27.6	0.47
123	2	21	4	5500	2	21	1	2	1		0	0	8	0	360			0	1	36.6	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
124	2	21	4	5500	3	16	1	3	0		0	0	0	0	0			0	0	36.6	0.25	0.5	0	1	0	1	0	1	0
125	2	21	4	5500	4	14	2	4	0		0	0	0	0	0			0	0	36.6	0.25	0.5	0	1	0	1	0	1	0
126	2	21	4	5500	5	12	2	4	0		0	0	0	0	0			0	0	36.6	0.25	0.5	0	1	0	1	0	1	0
127	2	21	4	5500	6	9	2	4	0		0	0	0	0	0			0	0	36.6	0.25	0.5	0	1	0	1	0	1	0
128	2	22	2	4200	1	35	1	1	1		7	60	0	0	480			0	1	27.9	0.25	0.5	1	1	1.33	0.14	0.13	27.6	0.47
129	2	22	2	4200	2	22	2	2	0		0	0	0	0	0			0	1	27.9	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
130	2	22	2	4200	3	10	1	4	1		7	60	0	0	480			0	0	27.9	0.25	0.5	0	1	0	0.14	0	1	0
131	2	22	2	4200	4	8	2	4	0		0	0	0	0	0			0	0	27.9	0.25	0.5	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
132	2	23	2	2500	1	30	1	1	1		0	0	0	0	600			0	1	16.6	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
133	2	23	2	2500	2	27	2	2	0		0	0	0	0	0			0	1	16.6	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
134	2	23	2	2500	3	10	1	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0
135	2	23	2	2500	4	8	1	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0
136	2	23	2	2500	5	6	1	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0
137	2	23	2	2500	6	5	1	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0
138	2	24	4	1500	1	45	1	1	1		0.25	20	0	0	300			0	1	9.98	0.25	0.5	1	1	1.36	0.51	0.13	34.3	2.2
139	2	24	4	1500	2	40	2	2	0		0	0	0	0	0			0	1	9.98	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
140	2	24	4	1500	3	21	1	3	0		0	0	0	0	0			0	0	9.98	0.25	0.5	0	1	0	1	0	1	0
141	2	24	4	1500	4	15	1	3	1		0.5	20	0	0	300			0	0	9.98	0.25	0.5	0	1	0	0.51	0	1	0
142	2	24	4	1500	5	18	2	3	0		0	0	0	0	0			0	0	9.98	0.25	0.5	0	1	0	1	0	1	0
143	2	25	2	2500	1	30	1	1	1		0	0	0	0	600			0	1	16.6	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
144	2	25	2	2500	2	27	2	2	0		0	0	0	0	0			0	1	16.6	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
145	2	25	2	2500	3	10	1	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0
146	2	25	2	2500	4	8	1	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0
147	2	25	2	2500	5	6	1	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0
148	2	25	2	2500	6	5	1	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0
149	2	26	4	7600	1	65	1	1	1		0	0	0	0	0			0	1	50.5	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
150	2	26	4	7600	2	58	2	2	0		0	0	0	0	0			0	1	50.5	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
151	2	26	4	7600	3	33	1	3	1		7.5	30	2	0	360			0	0	50.5	0.25	0.5	0	1	0	0.37	0	1	0
152	2	26	4	7600	4	21	1	3	1		7.5	30	7	0	360			0	0	50.5	0.25	0.5	0	1	0	0.37	0	1	0
153	2	26	4	7600	5	20	2	3	0		0	0	0	0	0			0	0	50.5	0.25	0.5	0	1	0	1	0	1	0
154	2	26	4	7600	6	18	1	3	0		0	0	0	0	0			0	0	50.5	0.25	0.5	0	1	0	1	0	1	0
155	2	26	4	7600	7	17	1	3	0		0	0	0	0	0			0	0	50.5	0.25	0.5	0	1	0	1	0	1	0
156	2	26	4	7600	8	13	2	4	0		0	0	0	0	0			0	0	50.5	0.25	0.5	0	1	0	1	0	1	0
157	2	27	2	8000	1	50	1	1	1		0.5	20	0	0	300			0	1	53.2	0.25	0.5	1	1	1.36	0.51	0.13	34.3	2.2
158	2	27	2	8000	2	45	2	2	1		0	0	0	0	180			0	1	53.2	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
159	2	27	2	8000	3	25	1	3	1		0.5	20	0	0	300			0	0	53.2	0.25	0.5	0	1	0	0.51	0	1	0
160	2	27	2	8000	4	22	2	3	1		0	0	0	0	180			0	0	53.2	0.25	0.5	0	1	0	1	0	1	0
161	2	27	2	8000	5	10	1	4	0		0	0	0	0	0			0	0	53.2	0.25	0.5	0	1	0	1	0	1	0
162	2	27	2	8000	6	8	1	4	0		0	0	0	0	0			0	0	53.2	0.25	0.5	0	1	0	1	0	1	0
163	2	27	2	8000	7	2	2	4	0		0	0	0	0	0			0	0	53.2	0.25	0.5	0	1	0	1	0	1	0
164	2	28	2	5000	1	33	1	1	1		7.5	40	7	0	480			0	1	33.3	0.25	0.5	1	1	1.35	0.26	0.13	30.8	1.02
165	2	28	2	5000	2	29	2	2	0		0	0	0	0	0			0	1	33.3	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
166	2	28	2	5000	3	5	1	4	0		0	0	0	0	0			0	0	33.3	0.25	0.5	0	1	0	1	0	1	0
167	2	28	2	5000	4	3	2	4	0		0	0	0	0	0			0	0	33.3	0.25	0.5	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
168	2	29	4	3000	1	48	1	1	0		0	0	0	0	0			0	1	20	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
169	2	29	4	3000	2	42	2	2	0		0	0	0	0	0			0	1	20	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
170	2	29	4	3000	3	27	1	3	1		7	60	0	0	360			0	0	20	0.25	0.5	0	1	0	0.14	0	1	0
171	2	29	4	3000	4	22	2	3	0		0	0	0	0	0			0	0	20	0.25	0.5	0	1	0	1	0	1	0
172	2	29	4	3000	5	18	2	3	0		0	0	0	0	0			0	0	20	0.25	0.5	0	1	0	1	0	1	0
173	2	29	4	3000	6	6	1	4	0		0	0	0	0	0			0	0	20	0.25	0.5	0	1	0	1	0	1	0
174	2	29	4	3000	7	5	1	4	0		0	0	0	0	0			0	0	20	0.25	0.5	0	1	0	1	0	1	0
175	2	30	2	8000	1	45	1	1	1		3	30	8	0	600			0	1	53.2	0.25	0.5	1	1	1.36	0.37	0.13	32.5	1.5
176	2	30	2	8000	2	40	2	2	0		0	0	0	0	0			0	1	53.2	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
177	2	30	2	8000	3	23	1	3	1		5	45	0	0	600			0	0	53.2	0.25	0.5	0	1	0	0.22	0	1	0
178	2	30	2	8000	4	21	1	3	1		0.5	5	0	0	720			0	0	53.2	0.25	0.5	0	1	0	0.85	0	1	0
179	2	30	2	8000	5	12	1	4	0		0	0	0	0	0			0	0	53.2	0.25	0.5	0	1	0	1	0	1	0
180	2	30	2	8000	6	10	1	4	0		0	0	0	0	0			0	0	53.2	0.25	0.5	0	1	0	1	0	1	0
181	2	30	2	8000	7	8	2	4	0		0	0	0	0	0			0	0	53.2	0.25	0.5	0	1	0	1	0	1	0
182	2	30	2	8000	8	6	2	4	0		0	0	0	0	0			0	0	53.2	0.25	0.5	0	1	0	1	0	1	0
183	2	30	2	8000	9	23	2	3	0		0	0	0	0	0			0	0	53.2	0.25	0.5	0	1	0	1	0	1	0
184	2	31	1	7500	1	40	1	1	1		0	0	0	0	600			0	1	49.9	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
185	2	31	1	7500	2	23	1	2	1		0	0	0	0	600			0	1	49.9	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
186	2	31	1	7500	3	22	1	3	1		0	0	0	0	600			0	0	49.9	0.25	0.5	0	1	0	1	0	1	0
187	2	31	1	7500	4	38	2	3	0		0	0	0	0	0			0	0	49.9	0.25	0.5	0	1	0	1	0	1	0
188	2	31	1	7500	5	20	2	3	0		0	0	0	0	0			0	0	49.9	0.25	0.5	0	1	0	1	0	1	0
189	2	32	2	2500	1	28	1	1	1		0	0	0	0	480			0	1	16.6	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
190	2	32	2	2500	2	22	2	2	0		0	0	0	0	0			0	1	16.6	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
191	2	32	2	2500	3	3	1	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0
192	2	32	2	2500	4	1	1	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0
193	2	33	4	6800	1	55	1	1	1		0	0	0	0	0			0	1	45.2	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
194	2	33	4	6800	2	30	1	2	1		720	720	7	0	720			0	1	45.2	0.25	0.5	1	1	0	0	0.13	1	0
195	2	33	4	6800	3	28	1	3	1		0	0	x	0	600			0	0	45.2	0.25	0.5	0	1	0	1	0	1	0
196	2	33	4	6800	4	25	1	3	0		0	0	0	0	0			0	0	45.2	0.25	0.5	0	1	0	1	0	1	0
197	2	33	4	6800	5	18	1	3	0		0	0	0	0	0			0	0	45.2	0.25	0.5	0	1	0	1	0	1	0
198	2	33	4	6800	6	25	2	3	0		0	0	0	0	0			0	0	45.2	0.25	0.5	0	1	0	1	0	1	0
199	2	33	4	6800	7	10	2	4	0		0	0	0	0	0			0	0	45.2	0.25	0.5	0	1	0	1	0	1	0
200	2	33	4	6800	8	7	2	4	0		0	0	0	0	0			0	0	45.2	0.25	0.5	0	1	0	1	0	1	0
201	2	34	2	2500	1	35	1	1	1		0	0	0	0	600			0	1	16.6	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
202	2	34	2	2500	2	27	2	2	0		0	0	0	0	0			0	1	16.6	0.25	0.5	1	1	1.38	1	0.13	37.9	4.74
203	2	34	2	2500	3	7	1	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
204	2	34	2	2500	4	3	1	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0
205	2	34	2	2500	5	5	2	4	0		0	0	0	0	0			0	0	16.6	0.25	0.5	0	1	0	1	0	1	0
206	3	35	2	16500	1	60	1	1	1		2.5	60	0	0	720			0	1	110	0.94	0.6	1	1	1.33	0.14	0.57	27.6	2.11
207	3	35	2	16500	2	52	2	2	0		0	0	0	0	0			0	1	110	0.94	0.6	1	1	1.38	1	0.57	37.9	21.4
208	3	35	2	16500	3	30	1	3	1		3	70	0	0	720			0	0	110	0.94	0.6	0	1	0	0.1	0	1	0
209	3	35	2	16500	4	28	1	3	1		0	0	6	0	600			0	0	110	0.94	0.6	0	1	0	1	0	1	0
210	3	35	2	16500	5	25	1	3	1		15	60	4	50	360			3.33	0	110	0.94	0.6	0	1	0	0.05	0	1	0
211	3	35	2	16500	6	20	1	3	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
212	3	35	2	16500	7	25	2	3	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
213	3	35	2	16500	8	24	2	3	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
214	3	35	2	16500	9	23	2	3	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
215	3	35	2	16500	10	17	2	3	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
216	3	35	2	16500	11	10	1	4	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
217	3	35	2	16500	12	8	1	4	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
218	3	35	2	16500	13	2	1	4	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
219	3	35	2	16500	14	2	1	4	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
220	3	35	2	16500	15	6	2	4	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
221	3	35	2	16500	16	4	2	4	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
222	3	35	2	16500	17	2	2	4	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
223	3	35	2	16500	18	2	2	4	0		0	0	0	0	0			0	0	110	0.94	0.6	0	1	0	1	0	1	0
224	3	36	2	4800	1	45	1	1	1		0	0	1	0	720			0	1	31.9	0.94	0.6	1	1	1.38	1	0.57	37.9	21.4
225	3	36	2	4800	2	35	2	2	0		0	0	0	0	0			0	1	31.9	0.94	0.6	1	1	1.38	1	0.57	37.9	21.4
226	3	36	2	4800	3	23	1	3	1		0	0	8	0	0			0	0	31.9	0.94	0.6	0	1	0	1	0	1	0
227	3	36	2	4800	4	10	1	4	0		0	0	0	0	0			0	0	31.9	0.94	0.6	0	1	0	1	0	1	0
228	3	36	2	4800	5	5	1	4	0		0	0	0	0	0			0	0	31.9	0.94	0.6	0	1	0	1	0	1	0
229	3	36	2	4800	6	18	2	3	0		0	0	0	0	0			0	0	31.9	0.94	0.6	0	1	0	1	0	1	0
230	3	36	2	4800	7	7	2	4	0		0	0	0	0	0			0	0	31.9	0.94	0.6	0	1	0	1	0	1	0
231	3	36	2	4800	8	1	2	4	0		0	0	0	0	0			0	0	31.9	0.94	0.6	0	1	0	1	0	1	0
232	3	37	2	2800	1	35	1	1	1		5	20	4	0	600			0	1	18.6	0.94	0.6	1	1	1.36	0.51	0.57	34.3	9.95
233	3	37	2	2800	2	28	2	2	0		0	0	0	0	0			0	1	18.6	0.94	0.6	1	1	1.38	1	0.57	37.9	21.4
234	3	37	2	2800	3	20	2	3	0		0	0	0	0	0			0	0	18.6	0.94	0.6	0	1	0	1	0	1	0
235	3	37	2	2800	4	50	2	3	0		0	0	0	0	0			0	0	18.6	0.94	0.6	0	1	0	1	0	1	0
236	3	37	2	2800	5	10	1	4	0		0	0	0	0	0			0	0	18.6	0.94	0.6	0	1	0	1	0	1	0
237	3	37	2	2800	6	3	1	4	0		0	0	0	0	0			0	0	18.6	0.94	0.6	0	1	0	1	0	1	0
238	3	37	2	2800	7	8	1	4	0		0	0	0	0	0			0	0	18.6	0.94	0.6	0	1	0	1	0	1	0
239	3	38	4	4500	1	50	1	1	1		3	25	4	20	360			6.67	1	29.9	0.94	0.6	1	1	1.36	0.11	0.57	33.4	2.16

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
240	3	38	4	4500	2	45	2	2	0		0	0	0	0	0			0	1	29.9	0.94	0.6	1	1	1.38	1	0.57	37.9	21.4
241	3	38	4	4500	3	20	2	3	0		0	0	0	0	0			0	0	29.9	0.94	0.6	0	1	0	1	0	1	0
242	3	38	4	4500	4	19	2	3	0		0	0	0	0	0			0	0	29.9	0.94	0.6	0	1	0	1	0	1	0
243	3	38	4	4500	5	7	2	4	0		0	0	0	0	0			0	0	29.9	0.94	0.6	0	1	0	1	0	1	0
244	3	38	4	4500	6	7	2	4	0		0	0	0	0	0			0	0	29.9	0.94	0.6	0	1	0	1	0	1	0
245	3	38	4	4500	7	12	1	4	0		0	0	0	0	0			0	0	29.9	0.94	0.6	0	1	0	1	0	1	0
246	3	38	4	4500	8	10	1	4	0		0	0	0	0	0			0	0	29.9	0.94	0.6	0	1	0	1	0	1	0
247	3	38	4	4500	9	6	1	4	0		0	0	0	0	0			0	0	29.9	0.94	0.6	0	1	0	1	0	1	0
248	3	39	2	2500	1	22	1	1	1		5	75	2	0	11			0	1	16.6	0.94	0.6	1	1	1.32	0.08	0.57	25.2	1.17
249	3	39	2	2500	2	60	2	2	0		0	0	0	0	0			0	1	16.6	0.94	0.6	1	1	1.38	1	0.57	37.9	21.4
250	3	39	2	2500	3	20	2	3	0		0	0	0	0	0			0	0	16.6	0.94	0.6	0	1	0	1	0	1	0
251	3	39	2	2500	4	3	1	4	0		0	0	0	0	0			0	0	16.6	0.94	0.6	0	1	0	1	0	1	0
252	3	40	2	3000	1	35	1	1	1		5	35	2	0	420			0	1	20	0.94	0.6	1	1	1.35	0.31	0.57	31.7	5.58
253	3	40	2	3000	2	24	1	2	0		0	0	0	0	0			0	1	20	0.94	0.6	1	1	1.38	1	0.57	37.9	21.4
254	3	40	2	3000	3	56	2	3	0		0	0	0	0	0			0	0	20	0.94	0.6	0	1	0	1	0	1	0
255	3	40	2	3000	4	27	2	3	0		0	0	0	0	0			0	0	20	0.94	0.6	0	1	0	1	0	1	0
256	3	40	2	3000	5	21	2	3	0		0	0	0	0	0			0	0	20	0.94	0.6	0	1	0	1	0	1	0
257	3	40	2	3000	6	11	1	4	0		0	0	0	0	0			0	0	20	0.94	0.6	0	1	0	1	0	1	0
258	3	40	2	3000	7	4	1	4	0		0	0	0	0	0			0	0	20	0.94	0.6	0	1	0	1	0	1	0
259	3	41	2	1500	1	40	1	1	1		0	0	0	0	300			0	1	9.98	0.94	0.6	1	1	1.38	1	0.57	37.9	21.4
260	3	41	2	1500	2	35	2	2	0		0	0	0	0	0			0	1	9.98	0.94	0.6	1	1	1.38	1	0.57	37.9	21.4
261	3	41	2	1500	3	14	1	4	0		0	0	0	0	0			0	0	9.98	0.94	0.6	0	1	0	1	0	1	0
262	3	41	2	1500	4	10	1	4	0		0	0	0	0	0			0	0	9.98	0.94	0.6	0	1	0	1	0	1	0
263	3	41	2	1500	5	8	2	4	0		0	0	0	0	0			0	0	9.98	0.94	0.6	0	1	0	1	0	1	0
264	3	42	2	3500	1	26	1	1	1		4.5	60	0	0	360			0	1	23.3	0.94	0.6	1	1	1.33	0.14	0.57	27.6	2.11
265	3	42	2	3500	2	24	1	2	0		0	0	0	0	0			0	1	23.3	0.94	0.6	1	1	1.38	1	0.57	37.9	21.4
266	3	42	2	3500	3	22	2	3	0		0	0	0	0	0			0	0	23.3	0.94	0.6	0	1	0	1	0	1	0
267	3	42	2	3500	4	17	2	3	0		0	0	0	0	0			0	0	23.3	0.94	0.6	0	1	0	1	0	1	0
268	3	42	2	3500	5	5	2	4	0		0	0	0	0	0			0	0	23.3	0.94	0.6	0	1	0	1	0	1	0
269	3	42	2	3500	6	1	2	4	0		0	0	0	0	0			0	0	23.3	0.94	0.6	0	1	0	1	0	1	0
270	3	42	2	3500	7	1	1	4	0		0	0	0	0	0			0	0	23.3	0.94	0.6	0	1	0	1	0	1	0
271	3	42	2	3500	8	2	2	4	0		0	0	0	0	0			0	0	23.3	0.94	0.6	0	1	0	1	0	1	0
272	3	43	4	4000	1	40	1	1	1		2.5	50	0	0	720			0	1	26.6	0.94	0.6	1	1	1.34	0.19	0.57	29.2	3.11
273	3	43	4	4000	2	35	2	2	0		0	0	0	0	0			0	1	26.6	0.94	0.6	1	1	1.38	1	0.57	37.9	21.4
274	3	43	4	4000	3	20	1	3	1		0.5	10	0	0	240			0	0	26.6	0.94	0.6	0	1	0	0.72	0	1	0
275	3	43	4	4000	4	16	2	3	0		0	0	0	0	0			0	0	26.6	0.94	0.6	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
276	3	43	4	4000	5	11	1	4	0		0	0	0	0	0			0	0	26.6	0.94	0.6	0	1	0	1	0	1	0
277	3	43	4	4000	6	8	2	4	0		0	0	0	0	0			0	0	26.6	0.94	0.6	0	1	0	1	0	1	0
278	3	43	4	4000	7	6	2	4	0		0	0	0	0	0			0	0	26.6	0.94	0.6	0	1	0	1	0	1	0
279	3	43	4	4000	8	1	1	4	0		0	0	0	0	0			0	0	26.6	0.94	0.6	0	1	0	1	0	1	0
280	4	44	4	3200	1	35	1	1	1		5	40	7	0	420			0	1	21.3	0.35	0.5	1	1	1.35	0.26	0.17	30.8	1.41
281	4	44	4	3200	2	55	2	2	0		0	0	0	0	0			0	1	21.3	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
282	4	44	4	3200	3	30	2	3	0		0	0	0	0	0			0	0	21.3	0.35	0.5	0	1	0	1	0	1	0
283	4	44	4	3200	4	8	2	4	0		0	0	0	0	0			0	0	21.3	0.35	0.5	0	1	0	1	0	1	0
284	4	44	4	3200	5	6	2	4	0		0	0	0	0	0			0	0	21.3	0.35	0.5	0	1	0	1	0	1	0
285	4	44	4	3200	6	4	2	4	0		0	0	0	0	0			0	0	21.3	0.35	0.5	0	1	0	1	0	1	0
286	4	44	4	3200	7	2	1	4	0		0	0	0	0	0			0	0	21.3	0.35	0.5	0	1	0	1	0	1	0
287	4	44	4	3200	8	15	1	3	0		0	0	0	0	0			0	0	21.3	0.35	0.5	0	1	0	1	0	1	0
288	4	44	4	3200	9	13	1	4	0		0	0	0	0	0			0	0	21.3	0.35	0.5	0	1	0	1	0	1	0
289	4	44	4	3200	10	7	1	4	0		0	0	0	0	0			0	0	21.3	0.35	0.5	0	1	0	1	0	1	0
290	4	44	4	3200	11	4	1	4	0		0	0	0	0	0			0	0	21.3	0.35	0.5	0	1	0	1	0	1	0
291	4	45	2	6000	1	45	1	1	1		0.5	10	0	0	300			0	1	39.9	0.35	0.5	1	1	1.37	0.72	0.17	36.1	4.47
292	4	45	2	6000	2	40	2	2	0		0	0	0	0	0			0	1	39.9	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
293	4	45	2	6000	3	25	2	3	0		0	0	0	0	0			0	0	39.9	0.35	0.5	0	1	0	1	0	1	0
294	4	45	2	6000	4	25	1	3	1		0.5	30	0	0	300			0	0	39.9	0.35	0.5	0	1	0	0.37	0	1	0
295	4	45	2	6000	5	20	1	3	0		0	0	0	0	0			0	0	39.9	0.35	0.5	0	1	0	1	0	1	0
296	4	45	2	6000	6	10	1	4	0		0	0	0	0	0			0	0	39.9	0.35	0.5	0	1	0	1	0	1	0
297	4	45	2	6000	7	5	2	4	0		0	0	0	0	0			0	0	39.9	0.35	0.5	0	1	0	1	0	1	0
298	4	46	4	3000	1	72	1	1	0		0	0	0	0	0			0	1	20	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
299	4	46	4	3000	2	45	1	2	1		25	7	0	0	1			0	1	20	0.35	0.5	1	1	1.37	0.79	0.17	36.6	5.02
300	4	46	4	3000	3	33	2	3	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0
301	4	46	4	3000	4	19	1	3	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0
302	4	46	4	3000	5	13	2	4	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0
303	4	46	4	3000	6	10	2	4	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0
304	4	47	4	6000	1	45	1	1	1		4.5	25	5	0	480			0	1	39.9	0.35	0.5	1	1	1.36	0.43	0.17	33.4	2.51
305	4	47	4	6000	2	40	2	2	0		0	0	0	0	0			0	1	39.9	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
306	4	47	4	6000	3	19	2	3	0		0	0	0	0	0			0	0	39.9	0.35	0.5	0	1	0	1	0	1	0
307	4	47	4	6000	4	17	2	3	0		0	0	0	0	0			0	0	39.9	0.35	0.5	0	1	0	1	0	1	0
308	4	47	4	6000	5	13	1	4	0		0	0	0	0	0			0	0	39.9	0.35	0.5	0	1	0	1	0	1	0
309	4	47	4	6000	6	10	2	4	0		0	0	0	0	0			0	0	39.9	0.35	0.5	0	1	0	1	0	1	0
310	4	47	4	6000	7	8	2	4	0		0	0	0	0	0			0	0	39.9	0.35	0.5	0	1	0	1	0	1	0
311	4	47	4	6000	8	33	1	3	1		4	20	7	0	420			0	0	39.9	0.35	0.5	0	1	0	0.51	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
312	4	47	4	6000	9	19	2	3	0		0	0	0	0	0			0	0	39.9	0.35	0.5	0	1	0	1	0	1	0
313	4	48	2	2000	1	35	1	1	1		4.5	25	2	0	720			0	1	13.3	0.35	0.5	1	1	1.36	0.43	0.17	33.4	2.51
314	4	48	2	2000	2	32	2	2	0		0	0	0	0	0			0	1	13.3	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
315	4	48	2	2000	3	35	2	3	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
316	4	48	2	2000	4	8	1	4	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
317	4	48	2	2000	5	7	1	4	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
318	4	48	2	2000	6	6	1	4	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
319	4	48	2	2000	7	5	1	4	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
320	4	48	2	2000	8	4	1	4	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
321	4	48	2	2000	9	2	1	4	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
322	4	48	2	2000	10	2	1	4	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
323	4	48	2	2000	11	11	2	4	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
324	4	48	2	2000	12	9	2	4	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
325	4	48	2	2000	13	7	2	4	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
326	4	48	2	2000	14	5	2	4	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
327	4	49	3	2000	1	45	1	1	1		3	15	2	0	720			0	1	13.3	0.35	0.5	1	1	1.37	0.61	0.17	35.2	3.69
328	4	49	3	2000	2	40	2	2	0		0	0	0	0	0			0	1	13.3	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
329	4	49	3	2000	3	65	2	3	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
330	4	49	3	2000	4	7	1	4	0		0	0	0	0	0			0	0	13.3	0.35	0.5	0	1	0	1	0	1	0
331	4	50	1	2000	1	70	1	1	1		0.5	45	0	0	300			0	1	13.3	0.35	0.5	1	1	1.35	0.22	0.17	30	1.16
332	4	50	1	2000	2	60	2	2	0		0	0	0	0	0			0	1	13.3	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
333	4	51	4	4000	1	45	1	1	1		0.5	10	0	0	300			0	1	26.6	0.35	0.5	1	1	1.37	0.72	0.17	36.1	4.47
334	4	51	4	4000	2	40	2	2	0		0	0	0	0	0			0	1	26.6	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
335	4	51	4	4000	3	22	1	3	1		0.5	20	0	0	300			0	0	26.6	0.35	0.5	0	1	0	0.51	0	1	0
336	4	51	4	4000	4	17	1	3	0		0	0	0	0	0			0	0	26.6	0.35	0.5	0	1	0	1	0	1	0
337	4	51	4	4000	5	5	1	4	0		0	0	0	0	0			0	0	26.6	0.35	0.5	0	1	0	1	0	1	0
338	4	52	3	5000	1	43	1	1	1		2	0	0	0	600			0	1	33.3	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
339	4	52	3	5000	2	21	1	2	1		2	0	0	0	420			0	1	33.3	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
340	4	52	3	5000	3	40	2	3	0		0	0	0	0	0			0	0	33.3	0.35	0.5	0	1	0	1	0	1	0
341	4	52	3	5000	4	17	2	3	0		0	0	0	0	0			0	0	33.3	0.35	0.5	0	1	0	1	0	1	0
342	4	52	3	5000	5	15	2	3	0		0	0	0	0	0			0	0	33.3	0.35	0.5	0	1	0	1	0	1	0
343	4	52	3	5000	6	14	2	4	0		0	0	0	0	0			0	0	33.3	0.35	0.5	0	1	0	1	0	1	0
344	4	53	3	3000	1	53	1	1	1		4.5	25	7	5	480			1.11	1	20	0.35	0.5	1	1	1.36	0.26	0.17	33.4	1.52
345	4	53	3	3000	2	40	2	2	0		0	0	0	0	0			0	1	20	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
346	4	53	3	3000	3	22	1	3	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0
347	4	53	3	3000	4	21	1	3	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
348	4	53	3	3000	5	16	2	3	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0
349	4	54	3	20000	1	60	1	1	1		10	40	5	80	60			8	1	133	0.35	0.5	1	1	1.35	0.08	0.17	30.8	0.42
350	4	54	3	20000	2	42	2	2	0		0	0	0	0	0			0	1	133	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
351	4	54	3	20000	3	25	1	3	0		0	0	0	0	0			0	0	133	0.35	0.5	0	1	0	1	0	1	0
352	4	54	3	20000	4	19	2	3	0		0	0	0	0	0			0	0	133	0.35	0.5	0	1	0	1	0	1	0
353	4	54	3	20000	5	17	2	3	0		0	0	0	0	0			0	0	133	0.35	0.5	0	1	0	1	0	1	0
354	4	55	2	8000	1	50	1	1	1		5	30	7	10	600			2	1	53.2	0.35	0.5	1	1	1.36	0.25	0.17	32.5	1.42
355	4	55	2	8000	2	47	2	2	0		0	0	0	0	0			0	1	53.2	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
356	4	55	2	8000	3	30	1	3	1		3	15	7	0	720			0	0	53.2	0.35	0.5	0	1	0	0.61	0	1	0
357	4	55	2	8000	4	25	1	3	1		1	20	0	0	480			0	0	53.2	0.35	0.5	0	1	0	0.51	0	1	0
358	4	55	2	8000	5	23	2	3	0		0	0	0	0	0			0	0	53.2	0.35	0.5	0	1	0	1	0	1	0
359	4	55	2	8000	6	19	2	3	0		0	0	0	0	0			0	0	53.2	0.35	0.5	0	1	0	1	0	1	0
360	4	55	2	8000	7	3	1	4	0		0	0	0	0	0			0	0	53.2	0.35	0.5	0	1	0	1	0	1	0
361	4	55	2	8000	8	1	1	4	0		0	0	0	0	0			0	0	53.2	0.35	0.5	0	1	0	1	0	1	0
362	4	56	4	3000	1	30	1	1	1		25	45	7	0	720			0	1	20	0.35	0.5	1	1	1.35	0.22	0.17	30	1.16
363	4	56	4	3000	2	28	2	2	0		0	0	0	0	0			0	1	20	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
364	4	56	4	3000	3	25	2	3	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0
365	4	56	4	3000	4	17	1	3	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0
366	4	56	4	3000	5	2	2	4	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0
367	4	57	3	3000	1	25	1	1	1		0.5	15	0	0	300			0	1	20	0.35	0.5	1	1	1.37	0.61	0.17	35.2	3.69
368	4	57	3	3000	2	21	2	2	0		0	0	0	0	0			0	1	20	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
369	4	57	3	3000	3	23	1	3	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0
370	4	57	3	3000	4	5	1	4	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0
371	4	57	3	3000	5	3	1	4	0		0	0	0	0	0			0	0	20	0.35	0.5	0	1	0	1	0	1	0
372	4	58	2	3500	1	65	1	1	0		0	0	0	0	0			0	1	23.3	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
373	4	58	2	3500	2	50	2	2	0		0	0	0	0	0			0	1	23.3	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
374	4	58	2	3500	3	30	1	3	1		4.5	30	7	0	300			0	0	23.3	0.35	0.5	0	1	0	0.37	0	1	0
375	4	58	2	3500	4	27	1	3	0		0	0	0	0	0			0	0	23.3	0.35	0.5	0	1	0	1	0	1	0
376	4	58	2	3500	5	12	1	4	0		0	0	0	0	0			0	0	23.3	0.35	0.5	0	1	0	1	0	1	0
377	4	58	2	3500	6	25	2	3	0		0	0	0	0	0			0	0	23.3	0.35	0.5	0	1	0	1	0	1	0
378	4	58	2	3500	7	21	2	3	0		0	0	0	0	0			0	0	23.3	0.35	0.5	0	1	0	1	0	1	0
379	4	59	2	2500	1	55	1	1	1		4.5	25	1	0	600			0	1	16.6	0.35	0.5	1	1	1.36	0.43	0.17	33.4	2.51
380	4	59	2	2500	2	54	2	2	0		0	0	0	0	0			0	1	16.6	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
381	4	59	2	2500	3	40	2	3	0		0	0	0	0	0			0	0	16.6	0.35	0.5	0	1	0	1	0	1	0
382	4	59	2	2500	4	35	1	3	1		25	1	0	0	1			0	0	16.6	0.35	0.5	0	1	0	0.97	0	1	0
383	4	59	2	2500	5	30	1	3	0		0	0	0	0	0			0	0	16.6	0.35	0.5	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
384	4	59	2	2500	6	30	2	3	0		0	0	0	0	0			0	0	16.6	0.35	0.5	0	1	0	1	0	1	0
385	4	59	2	2500	7	20	2	3	0		0	0	0	0	0			0	0	16.6	0.35	0.5	0	1	0	1	0	1	0
386	4	59	2	2500	8	5	1	4	0		0	0	0	0	0			0	0	16.6	0.35	0.5	0	1	0	1	0	1	0
387	4	59	2	2500	9	3	1	4	0		0	0	0	0	0			0	0	16.6	0.35	0.5	0	1	0	1	0	1	0
388	4	59	2	2500	10	1	1	4	0		0	0	0	0	0			0	0	16.6	0.35	0.5	0	1	0	1	0	1	0
389	4	60	2	4200	1	23	1	1	1		5	0	0	0	1			0	1	27.9	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
390	4	60	2	4200	2	21	2	2	0		0	0	0	0	0			0	1	27.9	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
391	4	60	2	4200	3	1	2	4	0		0	0	0	0	0			0	0	27.9	0.35	0.5	0	1	0	1	0	1	0
392	4	61	1	3500	1	25	1	1	1		4.5	10	4	0	720			0	1	23.3	0.35	0.5	1	1	1.37	0.72	0.17	36.1	4.47
393	4	61	1	3500	2	40	2	2	0		0	0	0	0	0			0	1	23.3	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
394	4	62	1	4000	1	35	1	1	1		8	30	7	0	480			0	1	26.6	0.35	0.5	1	1	1.36	0.37	0.17	32.5	2.07
395	4	62	1	4000	2	21	2	2	0		0	0	0	0	0			0	1	26.6	0.35	0.5	1	1	1.38	1	0.17	37.9	6.56
											ACTIVITY=			SCHOOL			2	<<CODE											
1	1	1	4	22000	1	60	1	1	1		0	0	0	0	0			0	0	36.3	0	0	0	1	0	1	0	1	0
2	1	1	4	22000	2	35	2	2	0		0	0	0	0	0			0	0	36.3	0	0	0	1	0	1	0	1	0
3	1	1	4	22000	3	25	1	3	1		0	0	0	0	0			0	1	36.3	0.2	0.25	1	1	1.38	1	0.05	37.9	1.91
4	1	1	4	22000	4	20	2	3	1		0	0	0	0	0			0	1	36.3	0	0	1	1	1.38	1	0	37.9	0
5	1	1	4	22000	5	22	1	3	1		0	0	0	0	0			0	1	36.3	0.2	0.25	1	1	1.38	1	0.05	37.9	1.91
6	1	1	4	22000	6	16	2	3	1		0	0	0	0	0			0	1	36.3	0	0	1	1	1.38	1	0	37.9	0
7	1	1	4	22000	7	6	1	4	0		0	0	0	0	0			0	1	36.3	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
8	1	1	4	22000	8	2	1	4	0		0	0	0	0	0			0	1	36.3	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
9	1	2	4	2000	1	43	1	1	1		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
10	1	2	4	2000	2	40	2	2	0		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
11	1	2	4	2000	3	20	1	3	1		0	0	0	0	0			0	1	3.3	0.2	0.25	1	1	1.38	1	0.05	37.9	1.91
12	1	2	4	2000	4	12	2	4	0		0	0	0	0	0			0	1	3.3	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
13	1	2	4	2000	5	10	1	4	0		0	0	0	0	0			0	1	3.3	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
14	1	2	4	2000	6	8	1	4	0		0	0	0	0	0			0	1	3.3	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
15	1	2	4	2000	7	7	2	4	0		0	0	0	0	0			0	1	3.3	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
16	1	2	4	2000	8	5	1	4	0		0	0	0	0	0			0	1	3.3	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
17	1	2	4	2000	9	2	1	4	0		0	0	0	0	0			0	1	3.3	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
18	1	3	4	3500	1	50	1	1	1		0	0	0	0	0			0	0	5.78	0	0	0	1	0	1	0	1	0
19	1	3	4	3500	2	45	2	2	0		0	0	0	0	0			0	0	5.78	0	0	0	1	0	1	0	1	0
20	1	3	4	3500	3	25	1	3	1		0	0	0	0	0			0	1	5.78	0.2	0.25	1	1	1.38	1	0.05	37.9	1.91
21	1	3	4	3500	4	18	1	3	0		0	0	0	0	0			0	1	5.78	0.2	0.25	1	1	1.38	1	0.05	37.9	1.91
22	1	3	4	3500	5	10	2	4	0		0	0	0	0	0			0	1	5.78	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
23	1	3	4	3500	6	7	2	4	0		0	0	0	0	0			0	1	5.78	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
24	1	3	4	3500	7	3	1	4	0		0	0	0	0	0			0	1	5.78	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
25	1	4	2	2000	1	35	1	1	1		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
26	1	4	2	2000	2	27	2	2	0		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
27	1	4	2	2000	3	5	1	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
28	1	4	2	2000	4	3	1	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
29	1	4	2	2000	5	1	2	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
30	1	5	2	3000	1	40	1	1	1		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
31	1	5	2	3000	2	30	2	2	0		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
32	1	5	2	3000	3	5	2	4	0		0	0	0	0	0			0	0	4.95	0.49	0.5	0	1	0	1	0	1	0
33	1	6	1	8000	1	28	1	1	1		0	0	0	0	0			0	0	13.2	0	0	0	1	0	1	0	1	0
34	1	6	1	8000	2	60	2	2	0		0	0	0	0	0			0	0	13.2	0	0	0	1	0	1	0	1	0
35	1	6	1	8000	3	26	1	3	0		0	0	0	0	0			0	0	13.2	0.2	0.25	0	1	0	1	0	1	0
36	1	6	1	8000	4	23	1	3	0		0	0	0	0	0			0	0	13.2	0.2	0.25	0	1	0	1	0	1	0
37	1	7	2	2000	1	30	1	1	1		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
38	1	7	2	2000	2	25	2	2	0		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
39	1	7	2	2000	3	3	1	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
40	1	7	2	2000	4	1	1	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
41	1	8	2	5000	1	40	1	1	1		0	0	0	0	0			0	0	8.25	0	0	0	1	0	1	0	1	0
42	1	8	2	5000	2	35	2	2	0		0	0	0	0	0			0	0	8.25	0	0	0	1	0	1	0	1	0
43	1	8	2	5000	3	80	2	3	0		0	0	0	0	0			0	1	8.25	0	0	1	1	1.38	1	0	37.9	0
44	1	8	2	5000	4	15	2	3	0		0	0	0	0	0			0	1	8.25	0	0	1	1	1.38	1	0	37.9	0
45	1	8	2	5000	5	13	1	4	0		0	0	0	0	0			0	0	8.25	0.49	0.5	0	1	0	1	0	1	0
46	1	9	4	7000	1	40	1	1	1		0	0	0	0	0			0	0	11.6	0	0	0	1	0	1	0	1	0
47	1	9	4	7000	2	35	2	2	0		0	0	0	0	0			0	0	11.6	0	0	0	1	0	1	0	1	0
48	1	9	4	7000	3	18	1	3	0		0	0	0	0	0			0	1	11.6	0.2	0.25	1	1	1.38	1	0.05	37.9	1.91
49	1	9	4	7000	4	8	1	4	0		0	0	0	0	0			0	1	11.6	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
50	1	9	4	7000	5	5	2	4	0		0	0	0	0	0			0	1	11.6	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
51	1	10	4	1500	1	45	1	1	1		0	0	0	0	0			0	0	2.48	0	0	0	1	0	1	0	1	0
52	1	10	4	1500	2	32	2	2	0		0	0	0	0	0			0	0	2.48	0	0	0	1	0	1	0	1	0
53	1	10	4	1500	3	21	1	3	0		0	0	0	0	0			0	1	2.48	0.2	0.25	1	1	1.38	1	0.05	37.9	1.91
54	1	10	4	1500	4	18	1	3	0		0	0	0	0	0			0	1	2.48	0.2	0.25	1	1	1.38	1	0.05	37.9	1.91
55	1	10	4	1500	5	15	2	3	0		0	0	0	0	0			0	1	2.48	0	0	1	1	1.38	1	0	37.9	0
56	1	10	4	1500	6	10	2	4	0		0	0	0	0	0			0	1	2.48	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
57	1	10	4	1500	7	6	1	4	0		0	0	0	0	0			0	1	2.48	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
58	1	11	4	9500	1	75	1	1	0		0	0	0	0	0			0	0	15.7	0	0	0	1	0	1	0	1	0
59	1	11	4	9500	2	43	1	2	1		0	0	0	0	0			0	0	15.7	0	0	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
60	1	11	4	9500	3	36	2	3	0		0	0	0	0	0			0	1	15.7	0	0	1	1	1.38	1	0	37.9	0
61	1	11	4	9500	4	37	1	3	1		0	0	0	0	0			0	1	15.7	0.2	0.25	1	1	1.38	1	0.05	37.9	1.91
62	1	11	4	9500	5	26	2	3	0		0	0	0	0	0			0	1	15.7	0	0	1	1	1.38	1	0	37.9	0
63	1	11	4	9500	6	18	1	3	0		0	0	0	0	0			0	1	15.7	0.2	0.25	1	1	1.38	1	0.05	37.9	1.91
64	1	11	4	9500	7	7	1	4	0		0	0	0	0	0			0	1	15.7	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
65	1	11	4	9500	8	10	1	4	0		0	0	0	0	0			0	1	15.7	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
66	1	11	4	9500	9	16	1	3	0		0	0	0	0	0			0	1	15.7	0.2	0.25	1	1	1.38	1	0.05	37.9	1.91
67	1	11	4	9500	10	6	1	4	0		0	0	0	0	0			0	1	15.7	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
68	2	12	4	1500	1	30	1	1	1		0	0	0	0	0			0	0	2.48	0	0	0	1	0	1	0	1	0
69	2	12	4	1500	2	45	2	2	0		0	0	0	0	0			0	0	2.48	0	0	0	1	0	1	0	1	0
70	2	12	4	1500	3	25	2	3	0		0	0	0	0	0			0	1	2.48	0	0	1	1	1.38	1	0	37.9	0
71	2	12	4	1500	4	22	2	3	0		0	0	0	0	0			0	1	2.48	0	0	1	1	1.38	1	0	37.9	0
72	2	12	4	1500	5	15	1	3	0		0	0	0	0	0			0	1	2.48	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
73	2	12	4	1500	6	8	1	4	0		0	0	0	0	0			0	1	2.48	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
74	2	12	4	1500	7	1	2	4	0		0	0	0	0	0			0	1	2.48	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
75	2	13	3	3500	1	40	1	1	1		0	0	0	0	0			0	0	5.78	0	0	0	1	0	1	0	1	0
76	2	13	3	3500	2	35	2	2	0		0	0	0	0	0			0	0	5.78	0	0	0	1	0	1	0	1	0
77	2	13	3	3500	3	16	1	3	0		0	0	0	0	0			0	0	5.78	0.05	0.13	0	1	0	1	0	1	0
78	2	14	3	3000	1	25	1	1	1		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
79	2	14	3	3000	2	50	2	2	0		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
80	2	14	3	3000	3	16	2	3	0		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
81	2	15	2	7000	1	49	1	1	1		0	0	0	0	0			0	0	11.6	0	0	0	1	0	1	0	1	0
82	2	15	2	7000	2	47	2	2	0		0	0	0	0	0			0	0	11.6	0	0	0	1	0	1	0	1	0
83	2	15	2	7000	3	25	2	3	0		0	0	0	0	0			0	1	11.6	0	0	1	1	1.38	1	0	37.9	0
84	2	15	2	7000	4	24	1	3	1		0	0	0	0	0			0	1	11.6	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
85	2	15	2	7000	5	22	1	3	1		0	0	0	0	0			0	1	11.6	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
86	2	15	2	7000	6	4	1	4	0		0	0	0	0	0			0	0	11.6	0.49	0.5	0	1	0	1	0	1	0
87	2	15	2	7000	7	3	1	4	0		0	0	0	0	0			0	0	11.6	0.49	0.5	0	1	0	1	0	1	0
88	2	15	2	7000	8	1	1	4	0		0	0	0	0	0			0	0	11.6	0.49	0.5	0	1	0	1	0	1	0
89	2	15	2	7000	9	3	1	4	0		0	0	0	0	0			0	0	11.6	0.49	0.5	0	1	0	1	0	1	0
90	2	15	2	7000	10	2	2	4	0		0	0	0	0	0			0	0	11.6	0.49	0.5	0	1	0	1	0	1	0
91	2	15	2	7000	11	1	1	4	0		0	0	0	0	0			0	0	11.6	0.49	0.5	0	1	0	1	0	1	0
92	2	16	3	8500	1	60	1	1	1		0	0	0	0	0			0	0	14	0	0	0	1	0	1	0	1	0
93	2	16	3	8500	2	55	2	2	0		0	0	0	0	0			0	0	14	0	0	0	1	0	1	0	1	0
94	2	16	3	8500	3	22	1	3	1		0	0	0	0	0			0	0	14	0.05	0.13	0	1	0	1	0	1	0
95	2	16	3	8500	4	18	1	3	1		0	0	0	0	0			0	0	14	0.05	0.13	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
96	2	17	4	6000	1	50	1	1	1		0	0	0	0	0			0	0	9.9	0	0	0	1	0	1	0	1	0
97	2	17	4	6000	2	45	2	2	0		0	0	0	0	0			0	0	9.9	0	0	0	1	0	1	0	1	0
98	2	17	4	6000	3	30	1	3	1		0	0	0	0	0			0	1	9.9	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
99	2	17	4	6000	4	22	1	3	0		0	0	0	0	0			0	1	9.9	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
100	2	17	4	6000	5	15	2	3	0		0	0	0	0	0			0	1	9.9	0	0	1	1	1.38	1	0	37.9	0
101	2	17	4	6000	6	28	2	3	0		0	0	0	0	0			0	1	9.9	0	0	1	1	1.38	1	0	37.9	0
102	2	17	4	6000	7	20	2	3	0		0	0	0	0	0			0	1	9.9	0	0	1	1	1.38	1	0	37.9	0
103	2	17	4	6000	8	12	1	4	0		0	0	0	0	0			0	1	9.9	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
104	2	17	4	6000	9	10	1	4	0		0	0	0	0	0			0	1	9.9	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
105	2	17	4	6000	10	6	1	4	0		0	0	0	0	0			0	1	9.9	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
106	2	18	3	4500	1	45	1	1	1		0	0	0	0	0			0	0	7.43	0	0	0	1	0	1	0	1	0
107	2	18	3	4500	2	38	2	2	0		0	0	0	0	0			0	0	7.43	0	0	0	1	0	1	0	1	0
108	2	18	3	4500	3	25	1	3	1		0	0	0	0	0			0	0	7.43	0.05	0.13	0	1	0	1	0	1	0
109	2	18	3	4500	4	15	1	3	1		0	0	0	0	0			0	0	7.43	0.05	0.13	0	1	0	1	0	1	0
110	2	18	3	4500	5	20	2	3	0		0	0	0	0	0			0	0	7.43	0	0	0	1	0	1	0	1	0
111	2	19	2	1500	1	35	1	1	1		0	0	0	0	0			0	0	2.48	0	0	0	1	0	1	0	1	0
112	2	19	2	1500	2	20	2	2	0		0	0	0	0	0			0	0	2.48	0	0	0	1	0	1	0	1	0
113	2	19	2	1500	3	3	2	4	0		0	0	0	0	0			0	0	2.48	0.49	0.5	0	1	0	1	0	1	0
114	2	19	2	1500	4	1	2	4	0		0	0	0	0	0			0	0	2.48	0.49	0.5	0	1	0	1	0	1	0
115	2	20	4	2000	1	45	1	1	1		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
116	2	20	4	2000	2	42	2	2	0		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
117	2	20	4	2000	3	28	1	3	0		0	0	0	0	0			0	1	3.3	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
118	2	20	4	2000	4	22	2	3	0		0	0	0	0	0			0	1	3.3	0	0	1	1	1.38	1	0	37.9	0
119	2	20	4	2000	5	16	2	3	0		0	0	0	0	0			0	1	3.3	0	0	1	1	1.38	1	0	37.9	0
120	2	20	4	2000	6	3	1	4	0		0	0	0	0	0			0	1	3.3	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
121	2	20	4	2000	7	1	2	4	0		0	0	0	0	0			0	1	3.3	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
122	2	21	4	5500	1	60	1	1	1		0	0	0	0	0			0	0	9.08	0	0	0	1	0	1	0	1	0
123	2	21	4	5500	2	21	1	2	1		0	0	0	0	0			0	0	9.08	0	0	0	1	0	1	0	1	0
124	2	21	4	5500	3	16	1	3	0		0	0	0	0	0			0	1	9.08	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
125	2	21	4	5500	4	14	2	4	0		0	0	0	0	0			0	1	9.08	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
126	2	21	4	5500	5	12	2	4	0		0	0	0	0	0			0	1	9.08	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
127	2	21	4	5500	6	9	2	4	0		0	0	0	0	0			0	1	9.08	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
128	2	22	2	4200	1	35	1	1	1		0	0	0	0	0			0	0	6.93	0	0	0	1	0	1	0	1	0
129	2	22	2	4200	2	22	2	2	0		0	0	0	0	0			0	0	6.93	0	0	0	1	0	1	0	1	0
130	2	22	2	4200	3	10	1	4	1		0	0	0	0	0			0	0	6.93	0.49	0.5	0	1	0	1	0	1	0
131	2	22	2	4200	4	8	2	4	0		0	0	0	0	0			0	0	6.93	0.49	0.5	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
132	2	23	2	2500	1	30	1	1	1		0	0	0	0	0			0	0	4.13	0	0	0	1	0	1	0	1	0
133	2	23	2	2500	2	27	2	2	0		0	0	0	0	0			0	0	4.13	0	0	0	1	0	1	0	1	0
134	2	23	2	2500	3	10	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
135	2	23	2	2500	4	8	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
136	2	23	2	2500	5	6	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
137	2	23	2	2500	6	5	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
138	2	24	4	1500	1	45	1	1	1		0	0	0	0	0			0	0	2.48	0	0	0	1	0	1	0	1	0
139	2	24	4	1500	2	40	2	2	0		0	0	0	0	0			0	0	2.48	0	0	0	1	0	1	0	1	0
140	2	24	4	1500	3	21	1	3	0		0	0	0	0	0			0	1	2.48	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
141	2	24	4	1500	4	15	1	3	1		7	45	0	0	300			0	1	2.48	0.05	0.13	1	1	1.35	0.22	0.01	30	0.04
142	2	24	4	1500	5	18	2	3	0		0	0	0	0	0			0	1	2.48	0	0	1	1	1.38	1	0	37.9	0
143	2	25	2	2500	1	30	1	1	1		0	0	0	0	0			0	0	4.13	0	0	0	1	0	1	0	1	0
144	2	25	2	2500	2	27	2	2	0		0	0	0	0	0			0	0	4.13	0	0	0	1	0	1	0	1	0
145	2	25	2	2500	3	10	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
146	2	25	2	2500	4	8	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
147	2	25	2	2500	5	6	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
148	2	25	2	2500	6	5	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
149	2	26	4	7600	1	65	1	1	1		0	0	0	0	0			0	0	12.5	0	0	0	1	0	1	0	1	0
150	2	26	4	7600	2	58	2	2	0		0	0	0	0	0			0	0	12.5	0	0	0	1	0	1	0	1	0
151	2	26	4	7600	3	33	1	3	1		0	0	0	0	0			0	1	12.5	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
152	2	26	4	7600	4	21	1	3	1		0	0	0	0	0			0	1	12.5	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
153	2	26	4	7600	5	20	2	3	0		0	0	0	0	0			0	1	12.5	0	0	1	1	1.38	1	0	37.9	0
154	2	26	4	7600	6	18	1	3	0		0	0	0	0	0			0	1	12.5	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
155	2	26	4	7600	7	17	1	3	0		0	0	0	0	0			0	1	12.5	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
156	2	26	4	7600	8	13	2	4	0		0	0	0	0	0			0	1	12.5	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
157	2	27	2	8000	1	50	1	1	1		0	0	0	0	0			0	0	13.2	0	0	0	1	0	1	0	1	0
158	2	27	2	8000	2	45	2	2	1		0	0	0	0	0			0	0	13.2	0	0	0	1	0	1	0	1	0
159	2	27	2	8000	3	25	1	3	1		0	0	0	0	0			0	1	13.2	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
160	2	27	2	8000	4	22	2	3	1		0	0	0	0	0			0	1	13.2	0	0	1	1	1.38	1	0	37.9	0
161	2	27	2	8000	5	10	1	4	0		0	0	0	0	0			0	0	13.2	0.49	0.5	0	1	0	1	0	1	0
162	2	27	2	8000	6	8	1	4	0		0	0	0	0	0			0	0	13.2	0.49	0.5	0	1	0	1	0	1	0
163	2	27	2	8000	7	2	2	4	0		0	0	0	0	0			0	0	13.2	0.49	0.5	0	1	0	1	0	1	0
164	2	28	2	5000	1	33	1	1	1		0	0	0	0	0			0	0	8.25	0	0	0	1	0	1	0	1	0
165	2	28	2	5000	2	29	2	2	0		0	0	0	0	0			0	0	8.25	0	0	0	1	0	1	0	1	0
166	2	28	2	5000	3	5	1	4	0		0	0	0	0	0			0	0	8.25	0.49	0.5	0	1	0	1	0	1	0
167	2	28	2	5000	4	3	2	4	0		0	0	0	0	0			0	0	8.25	0.49	0.5	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
168	2	29	4	3000	1	48	1	1	0		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
169	2	29	4	3000	2	42	2	2	0		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
170	2	29	4	3000	3	27	1	3	1		0	0	0	0	0			0	1	4.95	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
171	2	29	4	3000	4	22	2	3	0		0	0	0	0	0			0	1	4.95	0	0	1	1	1.38	1	0	37.9	0
172	2	29	4	3000	5	18	2	3	0		0	0	0	0	0			0	1	4.95	0	0	1	1	1.38	1	0	37.9	0
173	2	29	4	3000	6	6	1	4	0		0	0	0	0	0			0	1	4.95	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
174	2	29	4	3000	7	5	1	4	0		0	0	0	0	0			0	1	4.95	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
175	2	30	2	8000	1	45	1	1	1		0	0	0	0	0			0	0	13.2	0	0	0	1	0	1	0	1	0
176	2	30	2	8000	2	40	2	2	0		0	0	0	0	0			0	0	13.2	0	0	0	1	0	1	0	1	0
177	2	30	2	8000	3	23	1	3	1		0	0	0	0	0			0	1	13.2	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
178	2	30	2	8000	4	21	1	3	1		0	0	0	0	0			0	1	13.2	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
179	2	30	2	8000	5	12	1	4	0		0	0	0	0	0			0	0	13.2	0.49	0.5	0	1	0	1	0	1	0
180	2	30	2	8000	6	10	1	4	0		0	0	0	0	0			0	0	13.2	0.49	0.5	0	1	0	1	0	1	0
181	2	30	2	8000	7	8	2	4	0		0	0	0	0	0			0	0	13.2	0.49	0.5	0	1	0	1	0	1	0
182	2	30	2	8000	8	6	2	4	0		0	0	0	0	0			0	0	13.2	0.49	0.5	0	1	0	1	0	1	0
183	2	30	2	8000	9	23	2	3	0		0	0	0	0	0			0	1	13.2	0	0	1	1	1.38	1	0	37.9	0
184	2	31	1	7500	1	40	1	1	1		0	0	0	0	0			0	0	12.4	0	0	0	1	0	1	0	1	0
185	2	31	1	7500	2	23	1	2	1		0	0	0	0	0			0	0	12.4	0	0	0	1	0	1	0	1	0
186	2	31	1	7500	3	22	1	3	1		0	0	0	0	0			0	0	12.4	0.05	0.13	0	1	0	1	0	1	0
187	2	31	1	7500	4	38	2	3	0		0	0	0	0	0			0	0	12.4	0	0	0	1	0	1	0	1	0
188	2	31	1	7500	5	20	2	3	0		0	0	0	0	0			0	0	12.4	0	0	0	1	0	1	0	1	0
189	2	32	2	2500	1	28	1	1	1		0	0	0	0	0			0	0	4.13	0	0	0	1	0	1	0	1	0
190	2	32	2	2500	2	22	2	2	0		0	0	0	0	0			0	0	4.13	0	0	0	1	0	1	0	1	0
191	2	32	2	2500	3	3	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
192	2	32	2	2500	4	1	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
193	2	33	4	6800	1	55	1	1	1		0	0	0	0	0			0	0	11.2	0	0	0	1	0	1	0	1	0
194	2	33	4	6800	2	30	1	2	1		0	0	0	0	0			0	0	11.2	0	0	0	1	0	1	0	1	0
195	2	33	4	6800	3	28	1	3	1		0	0	0	0	0			0	1	11.2	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
196	2	33	4	6800	4	25	1	3	0		0	0	0	0	0			0	1	11.2	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
197	2	33	4	6800	5	18	1	3	0		0	0	0	0	0			0	1	11.2	0.05	0.13	1	1	1.38	1	0.01	37.9	0.25
198	2	33	4	6800	6	25	2	3	0		0	0	0	0	0			0	1	11.2	0	0	1	1	1.38	1	0	37.9	0
199	2	33	4	6800	7	10	2	4	0		0	0	0	0	0			0	1	11.2	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
200	2	33	4	6800	8	7	2	4	0		0	0	0	0	0			0	1	11.2	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
201	2	34	2	2500	1	35	1	1	1		0	0	0	0	0			0	0	4.13	0	0	0	1	0	1	0	1	0
202	2	34	2	2500	2	27	2	2	0		0	0	0	0	0			0	0	4.13	0	0	0	1	0	1	0	1	0
203	2	34	2	2500	3	7	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
204	2	34	2	2500	4	3	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
205	2	34	2	2500	5	5	2	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
206	3	35	2	16500	1	60	1	1	1		0	0	0	0	0			0	0	27.2	0	0	0	1	0	1	0	1	0
207	3	35	2	16500	2	52	2	2	0		0	0	0	0	0			0	0	27.2	0	0	0	1	0	1	0	1	0
208	3	35	2	16500	3	30	1	3	1		0	0	0	0	0			0	1	27.2	0.55	0.67	1	1	1.38	1	0.37	37.9	13.9
209	3	35	2	16500	4	28	1	3	1		0	0	0	0	0			0	1	27.2	0.55	0.67	1	1	1.38	1	0.37	37.9	13.9
210	3	35	2	16500	5	25	1	3	1		0	0	0	0	0			0	1	27.2	0.55	0.67	1	1	1.38	1	0.37	37.9	13.9
211	3	35	2	16500	6	20	1	3	0		0	0	0	0	0			0	1	27.2	0.55	0.67	1	1	1.38	1	0.37	37.9	13.9
212	3	35	2	16500	7	25	2	3	0		0	0	0	0	0			0	1	27.2	0	0	1	1	1.38	1	0	37.9	0
213	3	35	2	16500	8	24	2	3	0		0	0	0	0	0			0	1	27.2	0	0	1	1	1.38	1	0	37.9	0
214	3	35	2	16500	9	23	2	3	0		0	0	0	0	0			0	1	27.2	0	0	1	1	1.38	1	0	37.9	0
215	3	35	2	16500	10	17	2	3	0		0	0	0	0	0			0	1	27.2	0	0	1	1	1.38	1	0	37.9	0
216	3	35	2	16500	11	10	1	4	0		0	0	0	0	0			0	0	27.2	1.01	0.5	0	1	0	1	0	1	0
217	3	35	2	16500	12	8	1	4	0		0	0	0	0	0			0	0	27.2	1.01	0.5	0	1	0	1	0	1	0
218	3	35	2	16500	13	2	1	4	0		0	0	0	0	0			0	0	27.2	1.01	0.5	0	1	0	1	0	1	0
219	3	35	2	16500	14	2	1	4	0		0	0	0	0	0			0	0	27.2	1.01	0.5	0	1	0	1	0	1	0
220	3	35	2	16500	15	6	2	4	0		0	0	0	0	0			0	0	27.2	1.01	0.5	0	1	0	1	0	1	0
221	3	35	2	16500	16	4	2	4	0		0	0	0	0	0			0	0	27.2	1.01	0.5	0	1	0	1	0	1	0
222	3	35	2	16500	17	2	2	4	0		0	0	0	0	0			0	0	27.2	1.01	0.5	0	1	0	1	0	1	0
223	3	35	2	16500	18	2	2	4	0		0	0	0	0	0			0	0	27.2	1.01	0.5	0	1	0	1	0	1	0
224	3	36	2	4800	1	45	1	1	1		0	0	0	0	0			0	0	7.92	0	0	0	1	0	1	0	1	0
225	3	36	2	4800	2	35	2	2	0		0	0	0	0	0			0	0	7.92	0	0	0	1	0	1	0	1	0
226	3	36	2	4800	3	23	1	3	1		0	0	0	0	0			0	1	7.92	0.55	0.67	1	1	1.38	1	0.37	37.9	13.9
227	3	36	2	4800	4	10	1	4	0		0	0	0	0	0			0	0	7.92	1.01	0.5	0	1	0	1	0	1	0
228	3	36	2	4800	5	5	1	4	0		0	0	0	0	0			0	0	7.92	1.01	0.5	0	1	0	1	0	1	0
229	3	36	2	4800	6	18	2	3	0		0	0	0	0	0			0	1	7.92	0	0	1	1	1.38	1	0	37.9	0
230	3	36	2	4800	7	7	2	4	0		0	0	0	0	0			0	0	7.92	1.01	0.5	0	1	0	1	0	1	0
231	3	36	2	4800	8	1	2	4	0		0	0	0	0	0			0	0	7.92	1.01	0.5	0	1	0	1	0	1	0
232	3	37	2	2800	1	35	1	1	1		0	0	0	0	0			0	0	4.62	0	0	0	1	0	1	0	1	0
233	3	37	2	2800	2	28	2	2	0		0	0	0	0	0			0	0	4.62	0	0	0	1	0	1	0	1	0
234	3	37	2	2800	3	20	2	3	0		0	0	0	0	0			0	1	4.62	0	0	1	1	1.38	1	0	37.9	0
235	3	37	2	2800	4	50	2	3	0		0	0	0	0	0			0	1	4.62	0	0	1	1	1.38	1	0	37.9	0
236	3	37	2	2800	5	10	1	4	0		0	0	0	0	0			0	0	4.62	1.01	0.5	0	1	0	1	0	1	0
237	3	37	2	2800	6	3	1	4	0		0	0	0	0	0			0	0	4.62	1.01	0.5	0	1	0	1	0	1	0
238	3	37	2	2800	7	8	1	4	0		0	0	0	0	0			0	0	4.62	1.01	0.5	0	1	0	1	0	1	0
239	3	38	4	4500	1	50	1	1	1		0	0	0	0	0			0	0	7.43	0	0	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
240	3	38	4	4500	2	45	2	2	0		0	0	0	0	0			0	0	7.43	0	0	0	1	0	1	0	1	0
241	3	38	4	4500	3	20	2	3	0		0	0	0	0	0			0	1	7.43	0	0	1	1	1.38	1	0	37.9	0
242	3	38	4	4500	4	19	2	3	0		0	0	0	0	0			0	1	7.43	0	0	1	1	1.38	1	0	37.9	0
243	3	38	4	4500	5	7	2	4	0		0	0	0	0	0			0	1	7.43	1.01	0.5	1	1	1.38	1	0.51	37.9	19.2
244	3	38	4	4500	6	7	2	4	0		0	0	0	0	0			0	1	7.43	1.01	0.5	1	1	1.38	1	0.51	37.9	19.2
245	3	38	4	4500	7	12	1	4	0		0	0	0	0	0			0	1	7.43	1.01	0.5	1	1	1.38	1	0.51	37.9	19.2
246	3	38	4	4500	8	10	1	4	0		0	0	0	0	0			0	1	7.43	1.01	0.5	1	1	1.38	1	0.51	37.9	19.2
247	3	38	4	4500	9	6	1	4	0		0	0	0	0	0			0	1	7.43	1.01	0.5	1	1	1.38	1	0.51	37.9	19.2
248	3	39	2	2500	1	22	1	1	1		0	0	0	0	0			0	0	4.13	0	0	0	1	0	1	0	1	0
249	3	39	2	2500	2	60	2	2	0		0	0	0	0	0			0	0	4.13	0	0	0	1	0	1	0	1	0
250	3	39	2	2500	3	20	2	3	0		0	0	0	0	0			0	1	4.13	0	0	1	1	1.38	1	0	37.9	0
251	3	39	2	2500	4	3	1	4	0		0	0	0	0	0			0	0	4.13	1.01	0.5	0	1	0	1	0	1	0
252	3	40	2	3000	1	35	1	1	1		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
253	3	40	2	3000	2	24	1	2	0		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
254	3	40	2	3000	3	56	2	3	0		0	0	0	0	0			0	1	4.95	0	0	1	1	1.38	1	0	37.9	0
255	3	40	2	3000	4	27	2	3	0		0	0	0	0	0			0	1	4.95	0	0	1	1	1.38	1	0	37.9	0
256	3	40	2	3000	5	21	2	3	0		0	0	0	0	0			0	1	4.95	0	0	1	1	1.38	1	0	37.9	0
257	3	40	2	3000	6	11	1	4	0		0	0	0	0	0			0	0	4.95	1.01	0.5	0	1	0	1	0	1	0
258	3	40	2	3000	7	4	1	4	0		0	0	0	0	0			0	0	4.95	1.01	0.5	0	1	0	1	0	1	0
259	3	41	2	1500	1	40	1	1	1		0	0	0	0	0			0	0	2.48	0	0	0	1	0	1	0	1	0
260	3	41	2	1500	2	35	2	2	0		0	0	0	0	0			0	0	2.48	0	0	0	1	0	1	0	1	0
261	3	41	2	1500	3	14	1	4	0		0	0	0	0	0			0	0	2.48	1.01	0.5	0	1	0	1	0	1	0
262	3	41	2	1500	4	10	1	4	0		0	0	0	0	0			0	0	2.48	1.01	0.5	0	1	0	1	0	1	0
263	3	41	2	1500	5	8	2	4	0		0	0	0	0	0			0	0	2.48	1.01	0.5	0	1	0	1	0	1	0
264	3	42	2	3500	1	26	1	1	1		0	0	0	0	0			0	0	5.78	0	0	0	1	0	1	0	1	0
265	3	42	2	3500	2	24	1	2	0		0	0	0	0	0			0	0	5.78	0	0	0	1	0	1	0	1	0
266	3	42	2	3500	3	22	2	3	0		0	0	0	0	0			0	1	5.78	0	0	1	1	1.38	1	0	37.9	0
267	3	42	2	3500	4	17	2	3	0		0	0	0	0	0			0	1	5.78	0	0	1	1	1.38	1	0	37.9	0
268	3	42	2	3500	5	5	2	4	0		0	0	0	0	0			0	0	5.78	1.01	0.5	0	1	0	1	0	1	0
269	3	42	2	3500	6	1	2	4	0		0	0	0	0	0			0	0	5.78	1.01	0.5	0	1	0	1	0	1	0
270	3	42	2	3500	7	1	1	4	0		0	0	0	0	0			0	0	5.78	1.01	0.5	0	1	0	1	0	1	0
271	3	42	2	3500	8	2	2	4	0		0	0	0	0	0			0	0	5.78	1.01	0.5	0	1	0	1	0	1	0
272	3	43	4	4000	1	40	1	1	1		0	0	0	0	0			0	0	6.6	0	0	0	1	0	1	0	1	0
273	3	43	4	4000	2	35	2	2	0		0	0	0	0	0			0	0	6.6	0	0	0	1	0	1	0	1	0
274	3	43	4	4000	3	20	1	3	1		0	0	0	0	0			0	1	6.6	0.55	0.67	1	1	1.38	1	0.37	37.9	13.9
275	3	43	4	4000	4	16	2	3	0		0	0	0	0	0			0	1	6.6	0	0	1	1	1.38	1	0	37.9	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
276	3	43	4	4000	5	11	1	4	0		0	0	0	0	0			0	1	6.6	1.01	0.5	1	1	1.38	1	0.51	37.9	19.2
277	3	43	4	4000	6	8	2	4	0		0	0	0	0	0			0	1	6.6	1.01	0.5	1	1	1.38	1	0.51	37.9	19.2
278	3	43	4	4000	7	6	2	4	0		0	0	0	0	0			0	1	6.6	1.01	0.5	1	1	1.38	1	0.51	37.9	19.2
279	3	43	4	4000	8	1	1	4	0		0	0	0	0	0			0	1	6.6	1.01	0.5	1	1	1.38	1	0.51	37.9	19.2
280	4	44	4	3200	1	35	1	1	1		0	0	0	0	0			0	0	5.28	0	0	0	1	0	1	0	1	0
281	4	44	4	3200	2	55	2	2	0		0	0	0	0	0			0	0	5.28	0	0	0	1	0	1	0	1	0
282	4	44	4	3200	3	30	2	3	0		0	0	0	0	0			0	1	5.28	0	0	1	1	1.38	1	0	37.9	0
283	4	44	4	3200	4	8	2	4	0		0	0	0	0	0			0	1	5.28	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
284	4	44	4	3200	5	6	2	4	0		0	0	0	0	0			0	1	5.28	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
285	4	44	4	3200	6	4	2	4	0		0	0	0	0	0			0	1	5.28	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
286	4	44	4	3200	7	2	1	4	0		0	0	0	0	0			0	1	5.28	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
287	4	44	4	3200	8	15	1	3	0		0	0	0	0	0			0	1	5.28	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03
288	4	44	4	3200	9	13	1	4	0		0	0	0	0	0			0	1	5.28	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
289	4	44	4	3200	10	7	1	4	0		0	0	0	0	0			0	1	5.28	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
290	4	44	4	3200	11	4	1	4	0		0	0	0	0	0			0	1	5.28	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
291	4	45	2	6000	1	45	1	1	1		0	0	0	0	0			0	0	9.9	0	0	0	1	0	1	0	1	0
292	4	45	2	6000	2	40	2	2	0		0	0	0	0	0			0	0	9.9	0	0	0	1	0	1	0	1	0
293	4	45	2	6000	3	25	2	3	0		0	0	0	0	0			0	1	9.9	0	0	1	1	1.38	1	0	37.9	0
294	4	45	2	6000	4	25	1	3	1		0	0	0	0	0			0	1	9.9	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03
295	4	45	2	6000	5	20	1	3	0		0	0	0	0	0			0	1	9.9	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03
296	4	45	2	6000	6	10	1	4	0		0	0	0	0	0			0	0	9.9	0.49	0.5	0	1	0	1	0	1	0
297	4	45	2	6000	7	5	2	4	0		0	0	0	0	0			0	0	9.9	0.49	0.5	0	1	0	1	0	1	0
298	4	46	4	3000	1	72	1	1	0		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
299	4	46	4	3000	2	45	1	2	1		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
300	4	46	4	3000	3	33	2	3	0		0	0	0	0	0			0	1	4.95	0	0	1	1	1.38	1	0	37.9	0
301	4	46	4	3000	4	19	1	3	0		0	0	0	0	0			0	1	4.95	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03
302	4	46	4	3000	5	13	2	4	0		0	0	0	0	0			0	1	4.95	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
303	4	46	4	3000	6	10	2	4	0		0	0	0	0	0			0	1	4.95	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
304	4	47	4	6000	1	45	1	1	1		0	0	0	0	0			0	0	9.9	0	0	0	1	0	1	0	1	0
305	4	47	4	6000	2	40	2	2	0		0	0	0	0	0			0	0	9.9	0	0	0	1	0	1	0	1	0
306	4	47	4	6000	3	19	2	3	0		0	0	0	0	0			0	1	9.9	0	0	1	1	1.38	1	0	37.9	0
307	4	47	4	6000	4	17	2	3	0		0	0	0	0	0			0	1	9.9	0	0	1	1	1.38	1	0	37.9	0
308	4	47	4	6000	5	13	1	4	0		0	0	0	0	0			0	1	9.9	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
309	4	47	4	6000	6	10	2	4	0		0	0	0	0	0			0	1	9.9	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
310	4	47	4	6000	7	8	2	4	0		0	0	0	0	0			0	1	9.9	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
311	4	47	4	6000	8	33	1	3	1		0	0	0	0	0			0	1	9.9	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
312	4	47	4	6000	9	19	2	3	0		0	0	0	0	0			0	1	9.9	0	0	1	1	1.38	1	0	37.9	0
313	4	48	2	2000	1	35	1	1	1		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
314	4	48	2	2000	2	32	2	2	0		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
315	4	48	2	2000	3	35	2	3	0		0	0	0	0	0			0	1	3.3	0	0	1	1	1.38	1	0	37.9	0
316	4	48	2	2000	4	8	1	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
317	4	48	2	2000	5	7	1	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
318	4	48	2	2000	6	6	1	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
319	4	48	2	2000	7	5	1	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
320	4	48	2	2000	8	4	1	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
321	4	48	2	2000	9	2	1	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
322	4	48	2	2000	10	2	1	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
323	4	48	2	2000	11	11	2	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
324	4	48	2	2000	12	9	2	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
325	4	48	2	2000	13	7	2	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
326	4	48	2	2000	14	5	2	4	0		0	0	0	0	0			0	0	3.3	0.49	0.5	0	1	0	1	0	1	0
327	4	49	3	2000	1	45	1	1	1		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
328	4	49	3	2000	2	40	2	2	0		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
329	4	49	3	2000	3	65	2	3	0		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
330	4	49	3	2000	4	7	1	4	0		0	0	0	0	0			0	1	3.3	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
331	4	50	1	2000	1	70	1	1	1		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
332	4	50	1	2000	2	60	2	2	0		0	0	0	0	0			0	0	3.3	0	0	0	1	0	1	0	1	0
333	4	51	4	4000	1	45	1	1	1		0	0	0	0	0			0	0	6.6	0	0	0	1	0	1	0	1	0
334	4	51	4	4000	2	40	2	2	0		0	0	0	0	0			0	0	6.6	0	0	0	1	0	1	0	1	0
335	4	51	4	4000	3	22	1	3	1		0	0	0	0	0			0	1	6.6	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03
336	4	51	4	4000	4	17	1	3	0		0	0	0	0	0			0	1	6.6	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03
337	4	51	4	4000	5	5	1	4	0		0	0	0	0	0			0	1	6.6	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
338	4	52	3	5000	1	43	1	1	1		0	0	0	0	0			0	0	8.25	0	0	0	1	0	1	0	1	0
339	4	52	3	5000	2	21	1	2	1		0	0	0	0	0			0	0	8.25	0	0	0	1	0	1	0	1	0
340	4	52	3	5000	3	40	2	3	0		0	0	0	0	0			0	0	8.25	0	0	0	1	0	1	0	1	0
341	4	52	3	5000	4	17	2	3	0		0	0	0	0	0			0	0	8.25	0	0	0	1	0	1	0	1	0
342	4	52	3	5000	5	15	2	3	0		0	0	0	0	0			0	0	8.25	0	0	0	1	0	1	0	1	0
343	4	52	3	5000	6	14	2	4	0		0	0	0	0	0			0	1	8.25	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
344	4	53	3	3000	1	53	1	1	1		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
345	4	53	3	3000	2	40	2	2	0		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
346	4	53	3	3000	3	22	1	3	0		0	0	0	0	0			0	0	4.95	0.14	0.2	0	1	0	1	0	1	0
347	4	53	3	3000	4	21	1	3	0		0	0	0	0	0			0	0	4.95	0.14	0.2	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
348	4	53	3	3000	5	16	2	3	0		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
349	4	54	3	20000	1	60	1	1	1		4.5	15	5	40	420			8.89	0	33	0	0	0	1	0	0.05	0	1	0
350	4	54	3	20000	2	42	2	2	0		0	0	0	0	0			0	0	33	0	0	0	1	0	1	0	1	0
351	4	54	3	20000	3	25	1	3	0		0	0	0	0	0			0	0	33	0.14	0.2	0	1	0	1	0	1	0
352	4	54	3	20000	4	19	2	3	0		0	0	0	0	0			0	0	33	0	0	0	1	0	1	0	1	0
353	4	54	3	20000	5	17	2	3	0		0	0	0	0	0			0	0	33	0	0	0	1	0	1	0	1	0
354	4	55	2	8000	1	50	1	1	1		0	0	0	0	0			0	0	13.2	0	0	0	1	0	1	0	1	0
355	4	55	2	8000	2	47	2	2	0		0	0	0	0	0			0	0	13.2	0	0	0	1	0	1	0	1	0
356	4	55	2	8000	3	30	1	3	1		0	0	0	0	0			0	1	13.2	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03
357	4	55	2	8000	4	25	1	3	1		0	0	0	0	0			0	1	13.2	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03
358	4	55	2	8000	5	23	2	3	0		0	0	0	0	0			0	1	13.2	0	0	1	1	1.38	1	0	37.9	0
359	4	55	2	8000	6	19	2	3	0		0	0	0	0	0			0	1	13.2	0	0	1	1	1.38	1	0	37.9	0
360	4	55	2	8000	7	3	1	4	0		0	0	0	0	0			0	0	13.2	0.49	0.5	0	1	0	1	0	1	0
361	4	55	2	8000	8	1	1	4	0		0	0	0	0	0			0	0	13.2	0.49	0.5	0	1	0	1	0	1	0
362	4	56	4	3000	1	30	1	1	1		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
363	4	56	4	3000	2	28	2	2	0		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
364	4	56	4	3000	3	25	2	3	0		0	0	0	0	0			0	1	4.95	0	0	1	1	1.38	1	0	37.9	0
365	4	56	4	3000	4	17	1	3	0		0	0	0	0	0			0	1	4.95	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03
366	4	56	4	3000	5	2	2	4	0		0	0	0	0	0			0	1	4.95	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
367	4	57	3	3000	1	25	1	1	1		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
368	4	57	3	3000	2	21	2	2	0		0	0	0	0	0			0	0	4.95	0	0	0	1	0	1	0	1	0
369	4	57	3	3000	3	23	1	3	0		0	0	0	0	0			0	0	4.95	0.14	0.2	0	1	0	1	0	1	0
370	4	57	3	3000	4	5	1	4	0		0	0	0	0	0			0	1	4.95	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
371	4	57	3	3000	5	3	1	4	0		0	0	0	0	0			0	1	4.95	0.49	0.5	1	1	1.38	1	0.25	37.9	9.32
372	4	58	2	3500	1	65	1	1	0		0	0	0	0	0			0	0	5.78	0	0	0	1	0	1	0	1	0
373	4	58	2	3500	2	50	2	2	0		0	0	0	0	0			0	0	5.78	0	0	0	1	0	1	0	1	0
374	4	58	2	3500	3	30	1	3	1		0	0	0	0	0			0	1	5.78	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03
375	4	58	2	3500	4	27	1	3	0		0	0	0	0	0			0	1	5.78	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03
376	4	58	2	3500	5	12	1	4	0		0	0	0	0	0			0	0	5.78	0.49	0.5	0	1	0	1	0	1	0
377	4	58	2	3500	6	25	2	3	0		0	0	0	0	0			0	1	5.78	0	0	1	1	1.38	1	0	37.9	0
378	4	58	2	3500	7	21	2	3	0		0	0	0	0	0			0	1	5.78	0	0	1	1	1.38	1	0	37.9	0
379	4	59	2	2500	1	55	1	1	1		0	0	0	0	0			0	0	4.13	0	0	0	1	0	1	0	1	0
380	4	59	2	2500	2	54	2	2	0		0	0	0	0	0			0	0	4.13	0	0	0	1	0	1	0	1	0
381	4	59	2	2500	3	40	2	3	0		0	0	0	0	0			0	1	4.13	0	0	1	1	1.38	1	0	37.9	0
382	4	59	2	2500	4	35	1	3	1		0	0	0	0	0			0	1	4.13	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03
383	4	59	2	2500	5	30	1	3	0		0	0	0	0	0			0	1	4.13	0.14	0.2	1	1	1.38	1	0.03	37.9	1.03

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
384	4	59	2	2500	6	30	2	3	0		0	0	0	0	0			0	1	4.13	0	0	1	1	1.38	1	0	37.9	0
385	4	59	2	2500	7	20	2	3	0		0	0	0	0	0			0	1	4.13	0	0	1	1	1.38	1	0	37.9	0
386	4	59	2	2500	8	5	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
387	4	59	2	2500	9	3	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
388	4	59	2	2500	10	1	1	4	0		0	0	0	0	0			0	0	4.13	0.49	0.5	0	1	0	1	0	1	0
389	4	60	2	4200	1	23	1	1	1		0	0	0	0	0			0	0	6.93	0	0	0	1	0	1	0	1	0
390	4	60	2	4200	2	21	2	2	0		0	0	0	0	0			0	0	6.93	0	0	0	1	0	1	0	1	0
391	4	60	2	4200	3	1	2	4	0		0	0	0	0	0			0	0	6.93	0.49	0.5	0	1	0	1	0	1	0
392	4	61	1	3500	1	25	1	1	1		0	0	0	0	0			0	0	5.78	0	0	0	1	0	1	0	1	0
393	4	61	1	3500	2	40	2	2	0		0	0	0	0	0			0	0	5.78	0	0	0	1	0	1	0	1	0
394	4	62	1	4000	1	35	1	1	1		0	0	0	0	0			0	0	6.6	0	0	0	1	0	1	0	1	0
395	4	62	1	4000	2	21	2	2	0		0	0	0	0	0			0	0	6.6	0	0	0	1	0	1	0	1	0
											ACTIVITY=			MARKET			3	<<CODE			start col(for hh data)=					39			
1	1	1	4	22000	1	60	1	1	3	2	7	10	7	10	120	4	0	1.43	1	36.3	0.2	0.25	0.25	12	1.18	0.41	0.01	418	2.18
2	1	1	4	22000	2	35	2	2	3	2	7	10	7	10	120	4	0	1.43	1	36.3	0.2	0.25	0.25	12	1.37	0.41	0.01	1089	5.68
3	1	1	4	22000	3	25	1	3	3	2	7	10	7	10	120	4	0	1.43	1	36.3	0.2	0.25	0.25	12	1.18	0.41	0.01	418	2.18
4	1	1	4	22000	4	20	2	3	3	2	7	10	7	10	120	4	0	1.43	1	36.3	0.2	0.25	0.25	12	1.27	0.41	0.01	635	3.31
5	1	1	4	22000	5	22	1	3	3	2	7	10	7	10	120	4	0	1.43	1	36.3	0.2	0.25	0.25	12	1.18	0.41	0.01	418	2.18
6	1	1	4	22000	6	16	2	3	3	2	7	10	7	10	120	4	0	1.43	1	36.3	0.2	0.25	0.25	12	1.27	0.41	0.01	635	3.31
7	1	1	4	22000	7	6	1	4	3	2	7	10	7	10	120	4	0	1.43	1	36.3	0.2	0.25	0.25	12	1.37	0.41	0.01	1089	5.68
8	1	1	4	22000	8	2	1	4	3	2	7	10	7	10	120	4	0	1.43	1	36.3	0.2	0.25	0.25	12	1.37	0.41	0.01	1089	5.68
9	1	2	4	2000	1	43	1	1	3	2	7	15	7	10	60	4	0	1.43	1	3.3	0.2	0.25	0.25	4	1.37	0	0.01	234	0
10	1	2	4	2000	2	40	2	2	3	2	7	15	7	10	60	4	0	1.43	1	3.3	0.2	0.25	0.25	4	1.37	0	0.01	234	0
11	1	2	4	2000	3	20	1	3	3	2	7	15	7	10	60	4	0	1.43	1	3.3	0.2	0.25	0.25	4	0.7	0	0.01	16.4	0
12	1	2	4	2000	4	12	2	4	3	2	7	15	7	10	60	4	0	1.43	1	3.3	0.2	0.25	0.25	4	1.37	0	0.01	234	0
13	1	2	4	2000	5	10	1	4	3	2	7	15	7	10	60	4	0	1.43	1	3.3	0.2	0.25	0.25	4	1.37	0	0.01	234	0
14	1	2	4	2000	6	8	1	4	3	2	7	15	7	10	60	4	0	1.43	1	3.3	0.2	0.25	0.25	4	1.37	0	0.01	234	0
15	1	2	4	2000	7	7	2	4	3	2	7	15	7	10	60	4	0	1.43	1	3.3	0.2	0.25	0.25	4	1.37	0	0.01	234	0
16	1	2	4	2000	8	5	1	4	3	2	7	15	7	10	60	4	0	1.43	1	3.3	0.2	0.25	0.25	4	1.37	0	0.01	234	0
17	1	2	4	2000	9	2	1	4	3	2	7	15	7	10	60	4	0	1.43	1	3.3	0.2	0.25	0.25	4	1.37	0	0.01	234	0
18	1	3	4	3500	1	50	1	1	3	2	7	15	7	10	60	4	0	1.43	1	5.78	0.2	0.25	0.25	4	0.99	0.02	0.01	52.1	0.01
19	1	3	4	3500	2	45	2	2	3	2	7	15	7	10	60	4	0	1.43	1	5.78	0.2	0.25	0.25	4	1.37	0.02	0.01	234	0.06
20	1	3	4	3500	3	25	1	3	3	2	7	15	7	10	60	4	0	1.43	1	5.78	0.2	0.25	0.25	4	0.99	0.02	0.01	52.1	0.01
21	1	3	4	3500	4	18	1	3	3	2	7	15	7	10	60	4	0	1.43	1	5.78	0.2	0.25	0.25	4	1.37	0.02	0.01	234	0.06
22	1	3	4	3500	5	10	2	4	3	2	7	15	7	10	60	4	0	1.43	1	5.78	0.2	0.25	0.25	4	1.37	0.02	0.01	234	0.06
23	1	3	4	3500	6	7	2	4	3	2	7	15	7	10	60	4	0	1.43	1	5.78	0.2	0.25	0.25	4	1.37	0.02	0.01	234	0.06

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
24	1	3	4	3500	7	3	1	4	3	2	7	15	7	10	60	4	0	1.43	1	5.78	0.2	0.25	0.25	4	1.37	0.02	0.01	234	0.06
25	1	4	2	2000	1	35	1	1	1	1	7	15	7	10	240	3	0	1.43	1	3.3	0.2	0.25	0.33	16	1.06	0	0.02	301	0.01
26	1	4	2	2000	2	27	2	2	1	1	7	15	7	10	240	3	0	1.43	1	3.3	0.2	0.25	0.33	16	1.37	0	0.02	1562	0.04
27	1	4	2	2000	3	5	1	4	1	1	7	15	7	10	240	3	0	1.43	0	3.3	0.2	0.25	0	16	0	0	0	1	0
28	1	4	2	2000	4	3	1	4	1	1	7	15	7	10	240	3	0	1.43	0	3.3	0.2	0.25	0	16	0	0	0	1	0
29	1	4	2	2000	5	1	2	4	1	1	7	15	7	10	240	3	0	1.43	0	3.3	0.2	0.25	0	16	0	0	0	1	0
30	1	5	2	3000	1	40	1	1	1	2	7	20	7	10	50	1	0	1.43	1	4.95	0.2	0.25	1	2.5	1.21	0.01	0.05	70.5	0.03
31	1	5	2	3000	2	30	2	2	1	2	7	20	7	10	50	1	0	1.43	1	4.95	0.2	0.25	1	2.5	1.36	0.01	0.05	120	0.05
32	1	5	2	3000	3	5	2	4	1	2	7	20	7	10	50	1	0	1.43	0	4.95	0.2	0.25	0	2.5	0	0.01	0	1	0
33	1	6	1	8000	1	28	1	1	34	1	3	60	5	0	30	2	0	0	1	13.2	0.2	0.25	0.5	0.5	1.09	0.14	0.03	7.09	0.02
34	1	6	1	8000	2	60	2	2	34	1	3	60	5	0	30	2	0	0	1	13.2	0.2	0.25	0.5	0.5	1.33	0.14	0.03	10.9	0.04
35	1	6	1	8000	3	26	1	3	34	1	3	60	5	0	30	2	0	0	0	13.2	0.2	0.25	0	0.5	0	0.14	0	1	0
36	1	6	1	8000	4	23	1	3	34	1	3	60	5	0	30	2	0	0	0	13.2	0.2	0.25	0	0.5	0	0.14	0	1	0
37	1	7	2	2000	1	30	1	1	1	2	7	30	7	10	60	3	0	1.43	1	3.3	0.2	0.25	0.33	15	0.86	0	0.02	94.4	0
38	1	7	2	2000	2	25	2	2	1	2	7	30	7	10	60	3	0	1.43	1	3.3	0.2	0.25	0.33	15	1.36	0	0.02	1286	0.02
39	1	7	2	2000	3	3	1	4	1	2	7	30	7	10	60	3	0	1.43	0	3.3	0.2	0.25	0	15	0	0	0	1	0
40	1	7	2	2000	4	1	1	4	1	2	7	30	7	10	60	3	0	1.43	0	3.3	0.2	0.25	0	15	0	0	0	1	0
41	1	8	2	5000	1	40	1	1	125	2	7	15	7	5	240	4	0	0.71	1	8.25	0.2	0.25	0.25	16	1.12	0.18	0.01	418	0.95
42	1	8	2	5000	2	35	2	2	125	2	7	15	7	5	240	4	0	0.71	1	8.25	0.2	0.25	0.25	16	1.37	0.18	0.01	1562	3.56
43	1	8	2	5000	3	80	2	3	125	2	7	15	7	5	240	4	0	0.71	1	8.25	0.2	0.25	0.25	16	1.37	0.18	0.01	1562	3.56
44	1	8	2	5000	4	15	2	3	125	2	7	15	7	5	240	4	0	0.71	1	8.25	0.2	0.25	0.25	16	1.37	0.18	0.01	1562	3.56
45	1	8	2	5000	5	13	1	4	125	2	7	15	7	5	240	4	0	0.71	0	8.25	0.2	0.25	0	16	0	0.18	0	1	0
46	1	9	4	7000	1	40	1	1	23	2	7	30	7	5	240	2	0	0.71	1	11.6	0.2	0.25	0.5	8	1.09	0.15	0.03	161	0.63
47	1	9	4	7000	2	35	2	2	23	2	7	30	7	5	240	2	0	0.71	1	11.6	0.2	0.25	0.5	8	1.36	0.15	0.03	548	2.14
48	1	9	4	7000	3	18	1	3	23	2	7	30	7	5	240	2	0	0.71	1	11.6	0.2	0.25	0.5	8	1.36	0.15	0.03	548	2.14
49	1	9	4	7000	4	8	1	4	23	2	7	30	7	5	240	2	0	0.71	1	11.6	0.2	0.25	0.5	8	1.36	0.15	0.03	548	2.14
50	1	9	4	7000	5	5	2	4	23	2	7	30	7	5	240	2	0	0.71	1	11.6	0.2	0.25	0.5	8	1.36	0.15	0.03	548	2.14
51	1	10	4	1500	1	45	1	1	31	2	7	15	7	5	180	4	0	0.71	1	2.48	0.2	0.25	0.25	12	0.91	0.01	0.01	102	0.01
52	1	10	4	1500	2	32	2	2	31	2	7	15	7	5	180	4	0	0.71	1	2.48	0.2	0.25	0.25	12	1.37	0.01	0.01	1053	0.14
53	1	10	4	1500	3	21	1	3	31	2	7	15	7	5	180	4	0	0.71	1	2.48	0.2	0.25	0.25	12	1.37	0.01	0.01	1053	0.14
54	1	10	4	1500	4	18	1	3	31	2	7	15	7	5	180	4	0	0.71	1	2.48	0.2	0.25	0.25	12	1.37	0.01	0.01	1053	0.14
55	1	10	4	1500	5	15	2	3	31	2	7	15	7	5	180	4	0	0.71	1	2.48	0.2	0.25	0.25	12	1.37	0.01	0.01	1053	0.14
56	1	10	4	1500	6	10	2	4	31	2	7	15	7	5	180	4	0	0.71	1	2.48	0.2	0.25	0.25	12	1.37	0.01	0.01	1053	0.14
57	1	10	4	1500	7	6	1	4	31	2	7	15	7	5	180	4	0	0.71	1	2.48	0.2	0.25	0.25	12	1.37	0.01	0.01	1053	0.14
58	1	11	4	9500	1	75	1	1	24	1	7.5	20	45	0	300	3	0	0	1	15.7	0.2	0.25	0.33	15	1.36	0.51	0.02	1381	11.9
59	1	11	4	9500	2	43	1	2	24	1	7.5	20	45	0	300	3	0	0	1	15.7	0.2	0.25	0.33	15	1.11	0.51	0.02	364	3.15

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
60	1	11	4	9500	3	36	2	3	24	1	7.5	20	45	0	300	3	0	0	1	15.7	0.2	0.25	0.33	15	1.36	0.51	0.02	1381	11.9
61	1	11	4	9500	4	37	1	3	24	1	7.5	20	45	0	300	3	0	0	1	15.7	0.2	0.25	0.33	15	1.17	0.51	0.02	485	4.19
62	1	11	4	9500	5	26	2	3	24	1	7.5	20	45	0	300	3	0	0	1	15.7	0.2	0.25	0.33	15	1.36	0.51	0.02	1381	11.9
63	1	11	4	9500	6	18	1	3	24	1	7.5	20	45	0	300	3	0	0	1	15.7	0.2	0.25	0.33	15	1.36	0.51	0.02	1381	11.9
64	1	11	4	9500	7	7	1	4	24	1	7.5	20	45	0	300	3	0	0	1	15.7	0.2	0.25	0.33	15	1.36	0.51	0.02	1381	11.9
65	1	11	4	9500	8	10	1	4	24	1	7.5	20	45	0	300	3	0	0	1	15.7	0.2	0.25	0.33	15	1.36	0.51	0.02	1381	11.9
66	1	11	4	9500	9	16	1	3	24	1	7.5	20	45	0	300	3	0	0	1	15.7	0.2	0.25	0.33	15	1.36	0.51	0.02	1381	11.9
67	1	11	4	9500	10	6	1	4	24	1	7.5	20	45	0	300	3	0	0	1	15.7	0.2	0.25	0.33	15	1.36	0.51	0.02	1381	11.9
68	2	12	4	1500	1	30	1	1	1	1	7	60	0	0	120	1	0	0	1	2.48	0.05	0.13	1	2	0.95	0.14	0.01	20.6	0.02
69	2	12	4	1500	2	45	2	2	1	1	7	60	0	0	120	1	0	0	1	2.48	0.05	0.13	1	2	1.33	0.14	0.01	69.5	0.06
70	2	12	4	1500	3	25	2	3	1	1	7	60	0	0	120	1	0	0	1	2.48	0.05	0.13	1	2	1.33	0.14	0.01	69.5	0.06
71	2	12	4	1500	4	22	2	3	1	1	7	60	0	0	120	1	0	0	1	2.48	0.05	0.13	1	2	1.33	0.14	0.01	69.5	0.06
72	2	12	4	1500	5	15	1	3	1	1	7	60	0	0	120	1	0	0	1	2.48	0.05	0.13	1	2	1.33	0.14	0.01	69.5	0.06
73	2	12	4	1500	6	8	1	4	1	1	7	60	0	0	120	1	0	0	1	2.48	0.05	0.13	1	2	1.33	0.14	0.01	69.5	0.06
74	2	12	4	1500	7	1	2	4	1	1	7	60	0	0	120	1	0	0	1	2.48	0.05	0.13	1	2	1.33	0.14	0.01	69.5	0.06
75	2	13	3	3500	1	40	1	1	3	1	8	40	7	10	120	3	0	1.25	1	5.78	0.05	0.13	0.33	3	0.83	0.01	0	20.5	0
76	2	13	3	3500	2	35	2	2	3	1	8	40	7	10	120	3	0	1.25	1	5.78	0.05	0.13	0.33	3	1.35	0.01	0	136	0
77	2	13	3	3500	3	16	1	3	3	1	8	40	7	10	120	3	0	1.25	0	5.78	0.05	0.13	0	3	0	0.01	0	1	0
78	2	14	3	3000	1	25	1	1	1	1	7	10	4	15	60	2	0	2.14	1	4.95	0.05	0.13	0.5	6	1.18	0	0	184	0
79	2	14	3	3000	2	50	2	2	1	1	7	10	4	15	60	2	0	2.14	1	4.95	0.05	0.13	0.5	6	1.37	0	0	421	0
80	2	14	3	3000	3	16	2	3	1	1	7	10	4	15	60	2	0	2.14	0	4.95	0.05	0.13	0	6	0	0	0	1	0
81	2	15	2	7000	1	49	1	1	1	2	8	75	0	0	25	1	0	0	1	11.6	0.05	0.13	1	0.21	0.7	0.08	0.01	1.85	0
82	2	15	2	7000	2	47	2	2	1	2	8	75	0	0	25	1	0	0	1	11.6	0.05	0.13	1	0.21	1.32	0.08	0.01	3.17	0
83	2	15	2	7000	3	25	2	3	1	2	8	75	0	0	25	1	0	0	1	11.6	0.05	0.13	1	0.21	1.32	0.08	0.01	3.17	0
84	2	15	2	7000	4	24	1	3	1	2	8	75	0	0	25	1	0	0	1	11.6	0.05	0.13	1	0.21	0.42	0.08	0.01	1.45	0
85	2	15	2	7000	5	22	1	3	1	2	8	75	0	0	25	1	0	0	1	11.6	0.05	0.13	1	0.21	0.42	0.08	0.01	1.45	0
86	2	15	2	7000	6	4	1	4	1	2	8	75	0	0	25	1	0	0	0	11.6	0.05	0.13	0	0.21	0	0.08	0	1	0
87	2	15	2	7000	7	3	1	4	1	2	8	75	0	0	25	1	0	0	0	11.6	0.05	0.13	0	0.21	0	0.08	0	1	0
88	2	15	2	7000	8	1	1	4	1	2	8	75	0	0	25	1	0	0	0	11.6	0.05	0.13	0	0.21	0	0.08	0	1	0
89	2	15	2	7000	9	3	1	4	1	2	8	75	0	0	25	1	0	0	0	11.6	0.05	0.13	0	0.21	0	0.08	0	1	0
90	2	15	2	7000	10	2	2	4	1	2	8	75	0	0	25	1	0	0	0	11.6	0.05	0.13	0	0.21	0	0.08	0	1	0
91	2	15	2	7000	11	1	1	4	1	2	8	75	0	0	25	1	0	0	0	11.6	0.05	0.13	0	0.21	0	0.08	0	1	0
92	2	16	3	8500	1	60	1	1	3	1	7	60	0	0	180	2	0	0	1	14	0.05	0.13	0.5	3	1.15	0.14	0	61.6	0.03
93	2	16	3	8500	2	55	2	2	3	1	7	60	0	0	180	2	0	0	1	14	0.05	0.13	0.5	3	1.33	0.14	0	119	0.05
94	2	16	3	8500	3	22	1	3	3	1	7	60	0	0	180	2	0	0	0	14	0.05	0.13	0	3	0	0.14	0	1	0
95	2	16	3	8500	4	18	1	3	3	1	7	60	0	0	180	2	0	0	0	14	0.05	0.13	0	3	0	0.14	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
96	2	17	4	6000	1	50	1	1	8	2	7	15	7	10	120	4	0	1.43	1	9.9	0.05	0.13	0.25	8	0.7	0.08	0	26.7	0
97	2	17	4	6000	2	45	2	2	8	2	7	15	7	10	120	4	0	1.43	1	9.9	0.05	0.13	0.25	8	1.37	0.08	0	605	0.08
98	2	17	4	6000	3	30	1	3	8	2	7	15	7	10	120	4	0	1.43	1	9.9	0.05	0.13	0.25	8	0.7	0.08	0	26.7	0
99	2	17	4	6000	4	22	1	3	8	2	7	15	7	10	120	4	0	1.43	1	9.9	0.05	0.13	0.25	8	1.37	0.08	0	605	0.08
100	2	17	4	6000	5	15	2	3	8	2	7	15	7	10	120	4	0	1.43	1	9.9	0.05	0.13	0.25	8	1.37	0.08	0	605	0.08
101	2	17	4	6000	6	28	2	3	8	2	7	15	7	10	120	4	0	1.43	1	9.9	0.05	0.13	0.25	8	1.37	0.08	0	605	0.08
102	2	17	4	6000	7	20	2	3	8	2	7	15	7	10	120	4	0	1.43	1	9.9	0.05	0.13	0.25	8	1.37	0.08	0	605	0.08
103	2	17	4	6000	8	12	1	4	8	2	7	15	7	10	120	4	0	1.43	1	9.9	0.05	0.13	0.25	8	1.37	0.08	0	605	0.08
104	2	17	4	6000	9	10	1	4	8	2	7	15	7	10	120	4	0	1.43	1	9.9	0.05	0.13	0.25	8	1.37	0.08	0	605	0.08
105	2	17	4	6000	10	6	1	4	8	2	7	15	7	10	120	4	0	1.43	1	9.9	0.05	0.13	0.25	8	1.37	0.08	0	605	0.08
106	2	18	3	4500	1	45	1	1	1	1	7	60	0	0	480	1	0	0	1	7.43	0.05	0.13	1	8	0.95	0.14	0.01	76.8	0.07
107	2	18	3	4500	2	38	2	2	1	1	7	60	0	0	480	1	0	0	1	7.43	0.05	0.13	1	8	1.33	0.14	0.01	442	0.4
108	2	18	3	4500	3	25	1	3	1	1	7	60	0	0	480	1	0	0	0	7.43	0.05	0.13	0	8	0	0.14	0	1	0
109	2	18	3	4500	4	15	1	3	1	1	7	60	0	0	480	1	0	0	0	7.43	0.05	0.13	0	8	0	0.14	0	1	0
110	2	18	3	4500	5	20	2	3	1	1	7	60	0	0	480	1	0	0	0	7.43	0.05	0.13	0	8	0	0.14	0	1	0
111	2	19	2	1500	1	35	1	1	1	1	7.5	60	0	0	60	4	0	0	1	2.48	0.05	0.13	0.25	0.5	0.95	0.14	0	5.5	0
112	2	19	2	1500	2	20	2	2	1	1	7.5	60	0	0	60	4	0	0	1	2.48	0.05	0.13	0.25	0.5	1.33	0.14	0	10.9	0
113	2	19	2	1500	3	3	2	4	1	1	7.5	60	0	0	60	4	0	0	0	2.48	0.05	0.13	0	0.5	0	0.14	0	1	0
114	2	19	2	1500	4	1	2	4	1	1	7.5	60	0	0	60	4	0	0	0	2.48	0.05	0.13	0	0.5	0	0.14	0	1	0
115	2	20	4	2000	1	45	1	1	13	2	8	16	7	12	180	2	0	1.5	1	3.3	0.05	0.13	0.5	11.3	1.06	0	0	204	0
116	2	20	4	2000	2	42	2	2	13	2	8	16	7	12	180	2	0	1.5	1	3.3	0.05	0.13	0.5	11.3	1.37	0	0	958	0
117	2	20	4	2000	3	28	1	3	13	2	8	16	7	12	180	2	0	1.5	1	3.3	0.05	0.13	0.5	11.3	1.37	0	0	958	0
118	2	20	4	2000	4	22	2	3	13	2	8	16	7	12	180	2	0	1.5	1	3.3	0.05	0.13	0.5	11.3	1.37	0	0	958	0
119	2	20	4	2000	5	16	2	3	13	2	8	16	7	12	180	2	0	1.5	1	3.3	0.05	0.13	0.5	11.3	1.37	0	0	958	0
120	2	20	4	2000	6	3	1	4	13	2	8	16	7	12	180	2	0	1.5	1	3.3	0.05	0.13	0.5	11.3	1.37	0	0	958	0
121	2	20	4	2000	7	1	2	4	13	2	8	16	7	12	180	2	0	1.5	1	3.3	0.05	0.13	0.5	11.3	1.37	0	0	958	0
122	2	21	4	5500	1	60	1	1	21	2	7	60	0	0	120	5	0	0	1	9.08	0.05	0.13	0.2	2	1.09	0.14	0	32.3	0.01
123	2	21	4	5500	2	21	1	2	21	2	7	60	0	0	120	5	0	0	1	9.08	0.05	0.13	0.2	2	1.09	0.14	0	32.3	0.01
124	2	21	4	5500	3	16	1	3	21	2	7	60	0	0	120	5	0	0	1	9.08	0.05	0.13	0.2	2	1.33	0.14	0	69.5	0.01
125	2	21	4	5500	4	14	2	4	21	2	7	60	0	0	120	5	0	0	1	9.08	0.05	0.13	0.2	2	1.33	0.14	0	69.5	0.01
126	2	21	4	5500	5	12	2	4	21	2	7	60	0	0	120	5	0	0	1	9.08	0.05	0.13	0.2	2	1.33	0.14	0	69.5	0.01
127	2	21	4	5500	6	9	2	4	21	2	7	60	0	0	120	5	0	0	1	9.08	0.05	0.13	0.2	2	1.33	0.14	0	69.5	0.01
128	2	22	2	4200	1	35	1	1	1	1	7	60	0	0	120	1	0	0	1	6.93	0.05	0.13	1	2	0.95	0.14	0.01	20.6	0.02
129	2	22	2	4200	2	22	2	2	1	1	7	60	0	0	120	1	0	0	1	6.93	0.05	0.13	1	2	1.33	0.14	0.01	69.5	0.06
130	2	22	2	4200	3	10	1	4	1	1	7	60	0	0	120	1	0	0	0	6.93	0.05	0.13	0	2	0	0.14	0	1	0
131	2	22	2	4200	4	8	2	4	1	1	7	60	0	0	120	1	0	0	0	6.93	0.05	0.13	0	2	0	0.14	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
132	2	23	2	2500	1	30	1	1	13	2	7	60	0	0	180	2	0	0	1	4.13	0.05	0.13	0.5	3	0.76	0.14	0	15.2	0.01
133	2	23	2	2500	2	27	2	2	13	2	7	60	0	0	180	2	0	0	1	4.13	0.05	0.13	0.5	3	1.33	0.14	0	119	0.05
134	2	23	2	2500	3	10	1	4	13	2	7	60	0	0	180	2	0	0	0	4.13	0.05	0.13	0	3	0	0.14	0	1	0
135	2	23	2	2500	4	8	1	4	13	2	7	60	0	0	180	2	0	0	0	4.13	0.05	0.13	0	3	0	0.14	0	1	0
136	2	23	2	2500	5	6	1	4	13	2	7	60	0	0	180	2	0	0	0	4.13	0.05	0.13	0	3	0	0.14	0	1	0
137	2	23	2	2500	6	5	1	4	13	2	7	60	0	0	180	2	0	0	0	4.13	0.05	0.13	0	3	0	0.14	0	1	0
138	2	24	4	1500	1	45	1	1	13	1	7	60	0	0	180	1	0	0	1	2.48	0.05	0.13	1	3	1.15	0.14	0.01	61.6	0.06
139	2	24	4	1500	2	40	2	2	13	1	7	60	0	0	180	1	0	0	1	2.48	0.05	0.13	1	3	1.33	0.14	0.01	119	0.11
140	2	24	4	1500	3	21	1	3	13	1	7	60	0	0	180	1	0	0	1	2.48	0.05	0.13	1	3	1.33	0.14	0.01	119	0.11
141	2	24	4	1500	4	15	1	3	13	1	7	60	0	0	180	1	0	0	1	2.48	0.05	0.13	1	3	1.15	0.14	0.01	61.6	0.06
142	2	24	4	1500	5	18	2	3	13	1	7	60	0	0	180	1	0	0	1	2.48	0.05	0.13	1	3	1.33	0.14	0.01	119	0.11
143	2	25	2	2500	1	30	1	1	13	2	7	60	0	0	180	2	0	0	1	4.13	0.05	0.13	0.5	3	0.76	0.14	0	15.2	0.01
144	2	25	2	2500	2	27	2	2	13	2	7	60	0	0	180	2	0	0	1	4.13	0.05	0.13	0.5	3	1.33	0.14	0	119	0.05
145	2	25	2	2500	3	10	1	4	13	2	7	60	0	0	180	2	0	0	0	4.13	0.05	0.13	0	3	0	0.14	0	1	0
146	2	25	2	2500	4	8	1	4	13	2	7	60	0	0	180	2	0	0	0	4.13	0.05	0.13	0	3	0	0.14	0	1	0
147	2	25	2	2500	5	6	1	4	13	2	7	60	0	0	180	2	0	0	0	4.13	0.05	0.13	0	3	0	0.14	0	1	0
148	2	25	2	2500	6	5	1	4	13	2	7	60	0	0	180	2	0	0	0	4.13	0.05	0.13	0	3	0	0.14	0	1	0
149	2	26	4	7600	1	65	1	1	124	1	7.5	60	0	0	240	3	0	0	1	12.5	0.05	0.13	0.33	4	1.33	0.14	0	175	0.05
150	2	26	4	7600	2	58	2	2	124	1	7.5	60	0	0	240	3	0	0	1	12.5	0.05	0.13	0.33	4	1.33	0.14	0	175	0.05
151	2	26	4	7600	3	33	1	3	124	1	7.5	60	0	0	240	3	0	0	1	12.5	0.05	0.13	0.33	4	1.09	0.14	0	68.9	0.02
152	2	26	4	7600	4	21	1	3	124	1	7.5	60	0	0	240	3	0	0	1	12.5	0.05	0.13	0.33	4	1.09	0.14	0	68.9	0.02
153	2	26	4	7600	5	20	2	3	124	1	7.5	60	0	0	240	3	0	0	1	12.5	0.05	0.13	0.33	4	1.33	0.14	0	175	0.05
154	2	26	4	7600	6	18	1	3	124	1	7.5	60	0	0	240	3	0	0	1	12.5	0.05	0.13	0.33	4	1.33	0.14	0	175	0.05
155	2	26	4	7600	7	17	1	3	124	1	7.5	60	0	0	240	3	0	0	1	12.5	0.05	0.13	0.33	4	1.33	0.14	0	175	0.05
156	2	26	4	7600	8	13	2	4	124	1	7.5	60	0	0	240	3	0	0	1	12.5	0.05	0.13	0.33	4	1.33	0.14	0	175	0.05
157	2	27	2	8000	1	50	1	1	13	1	7	90	0	0	120	1	0	0	1	13.2	0.05	0.13	1	1	1.09	0.05	0.01	13.8	0
158	2	27	2	8000	2	45	2	2	13	1	7	90	0	0	120	1	0	0	1	13.2	0.05	0.13	1	1	1.2	0.05	0.01	17.7	0.01
159	2	27	2	8000	3	25	1	3	13	1	7	90	0	0	120	1	0	0	1	13.2	0.05	0.13	1	1	1.09	0.05	0.01	13.8	0
160	2	27	2	8000	4	22	2	3	13	1	7	90	0	0	120	1	0	0	1	13.2	0.05	0.13	1	1	1.2	0.05	0.01	17.7	0.01
161	2	27	2	8000	5	10	1	4	13	1	7	90	0	0	120	1	0	0	0	13.2	0.05	0.13	0	1	0	0.05	0	1	0
162	2	27	2	8000	6	8	1	4	13	1	7	90	0	0	120	1	0	0	0	13.2	0.05	0.13	0	1	0	0.05	0	1	0
163	2	27	2	8000	7	2	2	4	13	1	7	90	0	0	120	1	0	0	0	13.2	0.05	0.13	0	1	0	0.05	0	1	0
164	2	28	2	5000	1	33	1	1	1	1	7.5	80	0	0	240	2	0	0	1	8.25	0.05	0.13	0.5	6	0.89	0.07	0	43.4	0.01
165	2	28	2	5000	2	29	2	2	1	1	7.5	80	0	0	240	2	0	0	1	8.25	0.05	0.13	0.5	6	1.32	0.07	0	259	0.06
166	2	28	2	5000	3	5	1	4	1	1	7.5	80	0	0	240	2	0	0	0	8.25	0.05	0.13	0	6	0	0.07	0	1	0
167	2	28	2	5000	4	3	2	4	1	1	7.5	80	0	0	240	2	0	0	0	8.25	0.05	0.13	0	6	0	0.07	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
168	2	29	4	3000	1	48	1	1	13	1	7	20	7	10	240	2	0	1.43	1	4.95	0.05	0.13	0.5	12	1.36	0.01	0	1018	0.03
169	2	29	4	3000	2	42	2	2	13	1	7	20	7	10	240	2	0	1.43	1	4.95	0.05	0.13	0.5	12	1.36	0.01	0	1018	0.03
170	2	29	4	3000	3	27	1	3	13	1	7	20	7	10	240	2	0	1.43	1	4.95	0.05	0.13	0.5	12	1.17	0.01	0	374	0.01
171	2	29	4	3000	4	22	2	3	13	1	7	20	7	10	240	2	0	1.43	1	4.95	0.05	0.13	0.5	12	1.36	0.01	0	1018	0.03
172	2	29	4	3000	5	18	2	3	13	1	7	20	7	10	240	2	0	1.43	1	4.95	0.05	0.13	0.5	12	1.36	0.01	0	1018	0.03
173	2	29	4	3000	6	6	1	4	13	1	7	20	7	10	240	2	0	1.43	1	4.95	0.05	0.13	0.5	12	1.36	0.01	0	1018	0.03
174	2	29	4	3000	7	5	1	4	13	1	7	20	7	10	240	2	0	1.43	1	4.95	0.05	0.13	0.5	12	1.36	0.01	0	1018	0.03
175	2	30	2	8000	1	45	1	1	13	1	3	30	0	0	120	1	0	0	1	13.2	0.05	0.13	1	2.67	0.86	0.37	0.01	21.3	0.05
176	2	30	2	8000	2	40	2	2	13	1	3	30	0	0	120	1	0	0	1	13.2	0.05	0.13	1	2.67	1.36	0.37	0.01	123	0.3
177	2	30	2	8000	3	23	1	3	13	1	3	30	0	0	120	1	0	0	1	13.2	0.05	0.13	1	2.67	0.86	0.37	0.01	21.3	0.05
178	2	30	2	8000	4	21	1	3	13	1	3	30	0	0	120	1	0	0	1	13.2	0.05	0.13	1	2.67	0.64	0.37	0.01	9.65	0.02
179	2	30	2	8000	5	12	1	4	13	1	3	30	0	0	120	1	0	0	0	13.2	0.05	0.13	0	2.67	0	0.37	0	1	0
180	2	30	2	8000	6	10	1	4	13	1	3	30	0	0	120	1	0	0	0	13.2	0.05	0.13	0	2.67	0	0.37	0	1	0
181	2	30	2	8000	7	8	2	4	13	1	3	30	0	0	120	1	0	0	0	13.2	0.05	0.13	0	2.67	0	0.37	0	1	0
182	2	30	2	8000	8	6	2	4	13	1	3	30	0	0	120	1	0	0	0	13.2	0.05	0.13	0	2.67	0	0.37	0	1	0
183	2	30	2	8000	9	23	2	3	13	1	3	30	0	0	120	1	0	0	1	13.2	0.05	0.13	1	2.67	1.36	0.37	0.01	123	0.3
184	2	31	1	7500	1	40	1	1	1	2	7	60	0	0	30	3	0	0	1	12.4	0.05	0.13	0.33	0.5	0.76	0.14	0	3.9	0
185	2	31	1	7500	2	23	1	2	1	2	7	60	0	0	30	3	0	0	1	12.4	0.05	0.13	0.33	0.5	0.76	0.14	0	3.9	0
186	2	31	1	7500	3	22	1	3	1	2	7	60	0	0	30	3	0	0	0	12.4	0.05	0.13	0	0.5	0	0.14	0	1	0
187	2	31	1	7500	4	38	2	3	1	2	7	60	0	0	30	3	0	0	0	12.4	0.05	0.13	0	0.5	0	0.14	0	1	0
188	2	31	1	7500	5	20	2	3	1	2	7	60	0	0	30	3	0	0	0	12.4	0.05	0.13	0	0.5	0	0.14	0	1	0
189	2	32	2	2500	1	28	1	1	0	0	0	0	0	0	0	0	0	0	1	4.13	0.05	0.13	1	0	1.09	1	0.01	0	0
190	2	32	2	2500	2	22	2	2	0	0	0	0	0	0	0	0	0	0	1	4.13	0.05	0.13	1	0	1.38	1	0.01	0	0
191	2	32	2	2500	3	3	1	4	0	0	0	0	0	0	0	0	0	0	0	4.13	0.05	0.13	1	0	0	1	0.01	0	0
192	2	32	2	2500	4	1	1	4	0	0	0	0	0	0	0	0	0	0	0	4.13	0.05	0.13	1	0	0	1	0.01	0	0
193	2	33	4	6800	1	55	1	1	1234	1	7	60	0	0	60	1	0	0	1	11.2	0.05	0.13	1	1	1.33	0.14	0.01	27.6	0.02
194	2	33	4	6800	2	30	1	2	1234	1	7	60	0	0	60	1	0	0	1	11.2	0.05	0.13	1	1	0.5	0.14	0.01	3.46	0
195	2	33	4	6800	3	28	1	3	1234	1	7	60	0	0	60	1	0	0	1	11.2	0.05	0.13	1	1	0.76	0.14	0.01	6.6	0.01
196	2	33	4	6800	4	25	1	3	1234	1	7	60	0	0	60	1	0	0	1	11.2	0.05	0.13	1	1	1.33	0.14	0.01	27.6	0.02
197	2	33	4	6800	5	18	1	3	1234	1	7	60	0	0	60	1	0	0	1	11.2	0.05	0.13	1	1	1.33	0.14	0.01	27.6	0.02
198	2	33	4	6800	6	25	2	3	1234	1	7	60	0	0	60	1	0	0	1	11.2	0.05	0.13	1	1	1.33	0.14	0.01	27.6	0.02
199	2	33	4	6800	7	10	2	4	1234	1	7	60	0	0	60	1	0	0	1	11.2	0.05	0.13	1	1	1.33	0.14	0.01	27.6	0.02
200	2	33	4	6800	8	7	2	4	1234	1	7	60	0	0	60	1	0	0	1	11.2	0.05	0.13	1	1	1.33	0.14	0.01	27.6	0.02
201	2	34	2	2500	1	35	1	1	1	2	7	60	0	0	180	2	0	0	1	4.13	0.05	0.13	0.5	3	0.76	0.14	0	15.2	0.01
202	2	34	2	2500	2	27	2	2	1	2	7	60	0	0	180	2	0	0	1	4.13	0.05	0.13	0.5	3	1.33	0.14	0	119	0.05
203	2	34	2	2500	3	7	1	4	1	2	7	60	0	0	180	2	0	0	0	4.13	0.05	0.13	0	3	0	0.14	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
204	2	34	2	2500	4	3	1	4	1	2	7	60	0	0	180	2	0	0	0	4.13	0.05	0.13	0	3	0	0.14	0	1	0
205	2	34	2	2500	5	5	2	4	1	2	7	60	0	0	180	2	0	0	0	4.13	0.05	0.13	0	3	0	0.14	0	1	0
206	3	35	2	16500	1	60	1	1	345	2	2.5	60	0	0	120	3	0	0	1	27.2	1	1	0.33	2	0.5	0.14	0.33	4.9	0.22
207	3	35	2	16500	2	52	2	2	345	2	2.5	60	0	0	120	3	0	0	1	27.2	1	1	0.33	2	1.33	0.14	0.33	69.5	3.14
208	3	35	2	16500	3	30	1	3	345	2	2.5	60	0	0	120	3	0	0	1	27.2	1	1	0.33	2	0.5	0.14	0.33	4.9	0.22
209	3	35	2	16500	4	28	1	3	345	2	2.5	60	0	0	120	3	0	0	1	27.2	1	1	0.33	2	0.76	0.14	0.33	11.2	0.5
210	3	35	2	16500	5	25	1	3	345	2	2.5	60	0	0	120	3	0	0	1	27.2	1	1	0.33	2	1.09	0.14	0.33	32.3	1.46
211	3	35	2	16500	6	20	1	3	345	2	2.5	60	0	0	120	3	0	0	1	27.2	1	1	0.33	2	1.33	0.14	0.33	69.5	3.14
212	3	35	2	16500	7	25	2	3	345	2	2.5	60	0	0	120	3	0	0	1	27.2	1	1	0.33	2	1.33	0.14	0.33	69.5	3.14
213	3	35	2	16500	8	24	2	3	345	2	2.5	60	0	0	120	3	0	0	1	27.2	1	1	0.33	2	1.33	0.14	0.33	69.5	3.14
214	3	35	2	16500	9	23	2	3	345	2	2.5	60	0	0	120	3	0	0	1	27.2	1	1	0.33	2	1.33	0.14	0.33	69.5	3.14
215	3	35	2	16500	10	17	2	3	345	2	2.5	60	0	0	120	3	0	0	1	27.2	1	1	0.33	2	1.33	0.14	0.33	69.5	3.14
216	3	35	2	16500	11	10	1	4	345	2	2.5	60	0	0	120	3	0	0	0	27.2	1	1	0	2	0	0.14	0	1	0
217	3	35	2	16500	12	8	1	4	345	2	2.5	60	0	0	120	3	0	0	0	27.2	1	1	0	2	0	0.14	0	1	0
218	3	35	2	16500	13	2	1	4	345	2	2.5	60	0	0	120	3	0	0	0	27.2	1	1	0	2	0	0.14	0	1	0
219	3	35	2	16500	14	2	1	4	345	2	2.5	60	0	0	120	3	0	0	0	27.2	1	1	0	2	0	0.14	0	1	0
220	3	35	2	16500	15	6	2	4	345	2	2.5	60	0	0	120	3	0	0	0	27.2	1	1	0	2	0	0.14	0	1	0
221	3	35	2	16500	16	4	2	4	345	2	2.5	60	0	0	120	3	0	0	0	27.2	1	1	0	2	0	0.14	0	1	0
222	3	35	2	16500	17	2	2	4	345	2	2.5	60	0	0	120	3	0	0	0	27.2	1	1	0	2	0	0.14	0	1	0
223	3	35	2	16500	18	2	2	4	345	2	2.5	60	0	0	120	3	0	0	0	27.2	1	1	0	2	0	0.14	0	1	0
224	3	36	2	4800	1	45	1	1	131	1	3	65	0	0	180	2	0	0	1	7.92	1	1	0.5	2.77	0.47	0.11	0.5	5.24	0.3
225	3	36	2	4800	2	35	2	2	131	1	3	65	0	0	180	2	0	0	1	7.92	1	1	0.5	2.77	1.33	0.11	0.5	104	5.95
226	3	36	2	4800	3	23	1	3	131	1	3	65	0	0	180	2	0	0	1	7.92	1	1	0.5	2.77	1.33	0.11	0.5	104	5.95
227	3	36	2	4800	4	10	1	4	131	1	3	65	0	0	180	2	0	0	0	7.92	1	1	0	2.77	0	0.11	0	1	0
228	3	36	2	4800	5	5	1	4	131	1	3	65	0	0	180	2	0	0	0	7.92	1	1	0	2.77	0	0.11	0	1	0
229	3	36	2	4800	6	18	2	3	131	1	3	65	0	0	180	2	0	0	1	7.92	1	1	0.5	2.77	1.33	0.11	0.5	104	5.95
230	3	36	2	4800	7	7	2	4	131	1	3	65	0	0	180	2	0	0	0	7.92	1	1	0	2.77	0	0.11	0	1	0
231	3	36	2	4800	8	1	2	4	131	1	3	65	0	0	180	2	0	0	0	7.92	1	1	0	2.77	0	0.11	0	1	0
232	3	37	2	2800	1	35	1	1	1	1	2.5	60	0	0	120	4	0	0	1	4.62	1	1	0.25	1.02	0.76	0.14	0.25	6.69	0.23
233	3	37	2	2800	2	28	2	2	1	1	2.5	60	0	0	120	4	0	0	1	4.62	1	1	0.25	1.02	1.33	0.14	0.25	28.3	0.96
234	3	37	2	2800	3	20	2	3	1	1	2.5	60	0	0	120	4	0	0	1	4.62	1	1	0.25	1.02	1.33	0.14	0.25	28.3	0.96
235	3	37	2	2800	4	50	2	3	1	1	2.5	60	0	0	120	4	0	0	1	4.62	1	1	0.25	1.02	1.33	0.14	0.25	28.3	0.96
236	3	37	2	2800	5	10	1	4	1	1	2.5	60	0	0	120	4	0	0	0	4.62	1	1	0	1.02	0	0.14	0	1	0
237	3	37	2	2800	6	3	1	4	1	1	2.5	60	0	0	120	4	0	0	0	4.62	1	1	0	1.02	0	0.14	0	1	0
238	3	37	2	2800	7	8	1	4	1	1	2.5	60	0	0	120	4	0	0	0	4.62	1	1	0	1.02	0	0.14	0	1	0
239	3	38	4	4500	1	50	1	1	1	1	2.5	25	4	20	120	4	0	8	1	7.43	1	1	0.25	4.8	1.16	0	0.25	122	0.06

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
240	3	38	4	4500	2	45	2	2	1	1	2.5	25	4	20	120	4	0	8	1	7.43	1	1	0.25	4.8	1.36	0	0.25	283	0.14
241	3	38	4	4500	3	20	2	3	1	1	2.5	25	4	20	120	4	0	8	1	7.43	1	1	0.25	4.8	1.36	0	0.25	283	0.14
242	3	38	4	4500	4	19	2	3	1	1	2.5	25	4	20	120	4	0	8	1	7.43	1	1	0.25	4.8	1.36	0	0.25	283	0.14
243	3	38	4	4500	5	7	2	4	1	1	2.5	25	4	20	120	4	0	8	1	7.43	1	1	0.25	4.8	1.36	0	0.25	283	0.14
244	3	38	4	4500	6	7	2	4	1	1	2.5	25	4	20	120	4	0	8	1	7.43	1	1	0.25	4.8	1.36	0	0.25	283	0.14
245	3	38	4	4500	7	12	1	4	1	1	2.5	25	4	20	120	4	0	8	1	7.43	1	1	0.25	4.8	1.36	0	0.25	283	0.14
246	3	38	4	4500	8	10	1	4	1	1	2.5	25	4	20	120	4	0	8	1	7.43	1	1	0.25	4.8	1.36	0	0.25	283	0.14
247	3	38	4	4500	9	6	1	4	1	1	2.5	25	4	20	120	4	0	8	1	7.43	1	1	0.25	4.8	1.36	0	0.25	283	0.14
248	3	39	2	2500	1	22	1	1	1	1	5	75	2	0	180	2	0	0	1	4.13	1	1	0.5	2.4	1.32	0.08	0.5	79	3.24
249	3	39	2	2500	2	60	2	2	1	1	5	75	2	0	180	2	0	0	1	4.13	1	1	0.5	2.4	1.32	0.08	0.5	80.3	3.3
250	3	39	2	2500	3	20	2	3	1	1	5	75	2	0	180	2	0	0	1	4.13	1	1	0.5	2.4	1.32	0.08	0.5	80.3	3.3
251	3	39	2	2500	4	3	1	4	1	1	5	75	2	0	180	2	0	0	0	4.13	1	1	0	2.4	0	0.08	0	1	0
252	3	40	2	3000	1	35	1	1	1	1	3	30	2	0	60	2	0	0	1	4.95	1	1	0.5	2	1.09	0.37	0.5	35.3	6.48
253	3	40	2	3000	2	24	1	2	1	1	3	30	2	0	60	2	0	0	1	4.95	1	1	0.5	2	1.36	0.37	0.5	83.4	15.3
254	3	40	2	3000	3	56	2	3	1	1	3	30	2	0	60	2	0	0	1	4.95	1	1	0.5	2	1.36	0.37	0.5	83.4	15.3
255	3	40	2	3000	4	27	2	3	1	1	3	30	2	0	60	2	0	0	1	4.95	1	1	0.5	2	1.36	0.37	0.5	83.4	15.3
256	3	40	2	3000	5	21	2	3	1	1	3	30	2	0	60	2	0	0	1	4.95	1	1	0.5	2	1.36	0.37	0.5	83.4	15.3
257	3	40	2	3000	6	11	1	4	1	1	3	30	2	0	60	2	0	0	0	4.95	1	1	0	2	0	0.37	0	1	0
258	3	40	2	3000	7	4	1	4	1	1	3	30	2	0	60	2	0	0	0	4.95	1	1	0	2	0	0.37	0	1	0
259	3	41	2	1500	1	40	1	1	1	2	2.5	60	0	0	60	4	0	0	1	2.48	1	1	0.25	1	1.15	0.14	0.25	17.4	0.59
260	3	41	2	1500	2	35	2	2	1	2	2.5	60	0	0	60	4	0	0	1	2.48	1	1	0.25	1	1.33	0.14	0.25	27.6	0.93
261	3	41	2	1500	3	14	1	4	1	2	2.5	60	0	0	60	4	0	0	0	2.48	1	1	0	1	0	0.14	0	1	0
262	3	41	2	1500	4	10	1	4	1	2	2.5	60	0	0	60	4	0	0	0	2.48	1	1	0	1	0	0.14	0	1	0
263	3	41	2	1500	5	8	2	4	1	2	2.5	60	0	0	60	4	0	0	0	2.48	1	1	0	1	0	0.14	0	1	0
264	3	42	2	3500	1	26	1	1	12	1	2.5	45	0	0	120	2	0	0	1	5.78	1	1	0.5	2.67	1.12	0.22	0.5	51.3	5.72
265	3	42	2	3500	2	24	1	2	12	1	2.5	45	0	0	120	2	0	0	1	5.78	1	1	0.5	2.67	1.35	0.22	0.5	112	12.5
266	3	42	2	3500	3	22	2	3	12	1	2.5	45	0	0	120	2	0	0	1	5.78	1	1	0.5	2.67	1.35	0.22	0.5	112	12.5
267	3	42	2	3500	4	17	2	3	12	1	2.5	45	0	0	120	2	0	0	1	5.78	1	1	0.5	2.67	1.35	0.22	0.5	112	12.5
268	3	42	2	3500	5	5	2	4	12	1	2.5	45	0	0	120	2	0	0	0	5.78	1	1	0	2.67	0	0.22	0	1	0
269	3	42	2	3500	6	1	2	4	12	1	2.5	45	0	0	120	2	0	0	0	5.78	1	1	0	2.67	0	0.22	0	1	0
270	3	42	2	3500	7	1	1	4	12	1	2.5	45	0	0	120	2	0	0	0	5.78	1	1	0	2.67	0	0.22	0	1	0
271	3	42	2	3500	8	2	2	4	12	1	2.5	45	0	0	120	2	0	0	0	5.78	1	1	0	2.67	0	0.22	0	1	0
272	3	43	4	4000	1	40	1	1	1	2	2.5	50	0	0	60	1	0	0	1	6.6	1	1	1	1.2	0.55	0.19	1	4.39	0.83
273	3	43	4	4000	2	35	2	2	1	2	2.5	50	0	0	60	1	0	0	1	6.6	1	1	1	1.2	1.34	0.19	1	37.3	7.04
274	3	43	4	4000	3	20	1	3	1	2	2.5	50	0	0	60	1	0	0	1	6.6	1	1	1	1.2	1.21	0.19	1	26.3	4.97
275	3	43	4	4000	4	16	2	3	1	2	2.5	50	0	0	60	1	0	0	1	6.6	1	1	1	1.2	1.34	0.19	1	37.3	7.04

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
276	3	43	4	4000	5	11	1	4	1	2	2.5	50	0	0	60	1	0	0	1	6.6	1	1	1	1.2	1.34	0.19	1	37.3	7.04
277	3	43	4	4000	6	8	2	4	1	2	2.5	50	0	0	60	1	0	0	1	6.6	1	1	1	1.2	1.34	0.19	1	37.3	7.04
278	3	43	4	4000	7	6	2	4	1	2	2.5	50	0	0	60	1	0	0	1	6.6	1	1	1	1.2	1.34	0.19	1	37.3	7.04
279	3	43	4	4000	8	1	1	4	1	2	2.5	50	0	0	60	1	0	0	1	6.6	1	1	1	1.2	1.34	0.19	1	37.3	7.04
280	4	44	4	3200	1	35	1	1	1789	2	4.5	15	7	5	180	2	0	1.11	1	5.28	0.14	0.2	0.5	12	1.12	0.09	0.01	303	0.37
281	4	44	4	3200	2	55	2	2	1789	2	4.5	15	7	5	180	2	0	1.11	1	5.28	0.14	0.2	0.5	12	1.37	0.09	0.01	1053	1.3
282	4	44	4	3200	3	30	2	3	1789	2	4.5	15	7	5	180	2	0	1.11	1	5.28	0.14	0.2	0.5	12	1.37	0.09	0.01	1053	1.3
283	4	44	4	3200	4	8	2	4	1789	2	4.5	15	7	5	180	2	0	1.11	1	5.28	0.14	0.2	0.5	12	1.37	0.09	0.01	1053	1.3
284	4	44	4	3200	5	6	2	4	1789	2	4.5	15	7	5	180	2	0	1.11	1	5.28	0.14	0.2	0.5	12	1.37	0.09	0.01	1053	1.3
285	4	44	4	3200	6	4	2	4	1789	2	4.5	15	7	5	180	2	0	1.11	1	5.28	0.14	0.2	0.5	12	1.37	0.09	0.01	1053	1.3
286	4	44	4	3200	7	2	1	4	1789	2	4.5	15	7	5	180	2	0	1.11	1	5.28	0.14	0.2	0.5	12	1.37	0.09	0.01	1053	1.3
287	4	44	4	3200	8	15	1	3	1789	2	4.5	15	7	5	180	2	0	1.11	1	5.28	0.14	0.2	0.5	12	1.37	0.09	0.01	1053	1.3
288	4	44	4	3200	9	13	1	4	1789	2	4.5	15	7	5	180	2	0	1.11	1	5.28	0.14	0.2	0.5	12	1.37	0.09	0.01	1053	1.3
289	4	44	4	3200	10	7	1	4	1789	2	4.5	15	7	5	180	2	0	1.11	1	5.28	0.14	0.2	0.5	12	1.37	0.09	0.01	1053	1.3
290	4	44	4	3200	11	4	1	4	1789	2	4.5	15	7	5	180	2	0	1.11	1	5.28	0.14	0.2	0.5	12	1.37	0.09	0.01	1053	1.3
291	4	45	2	6000	1	45	1	1	14	1	4.5	20	7	5	180	1	0	1.11	1	9.9	0.14	0.2	1	9	1.21	0.19	0.03	333	1.69
292	4	45	2	6000	2	40	2	2	14	1	4.5	20	7	5	180	1	0	1.11	1	9.9	0.14	0.2	1	9	1.36	0.19	0.03	688	3.48
293	4	45	2	6000	3	25	2	3	14	1	4.5	20	7	5	180	1	0	1.11	1	9.9	0.14	0.2	1	9	1.36	0.19	0.03	688	3.48
294	4	45	2	6000	4	25	1	3	14	1	4.5	20	7	5	180	1	0	1.11	1	9.9	0.14	0.2	1	9	1.21	0.19	0.03	333	1.69
295	4	45	2	6000	5	20	1	3	14	1	4.5	20	7	5	180	1	0	1.11	1	9.9	0.14	0.2	1	9	1.36	0.19	0.03	688	3.48
296	4	45	2	6000	6	10	1	4	14	1	4.5	20	7	5	180	1	0	1.11	0	9.9	0.14	0.2	0	9	0	0.19	0	1	0
297	4	45	2	6000	7	5	2	4	14	1	4.5	20	7	5	180	1	0	1.11	0	9.9	0.14	0.2	0	9	0	0.19	0	1	0
298	4	46	4	3000	1	72	1	1	42	1	3	20	2	0	180	1	0	0	1	4.95	0.14	0.2	1	7.2	1.36	0.51	0.03	507	7.05
299	4	46	4	3000	2	45	1	2	42	1	3	20	2	0	180	1	0	0	1	4.95	0.14	0.2	1	7.2	1.36	0.51	0.03	506	7.04
300	4	46	4	3000	3	33	2	3	42	1	3	20	2	0	180	1	0	0	1	4.95	0.14	0.2	1	7.2	1.36	0.51	0.03	507	7.05
301	4	46	4	3000	4	19	1	3	42	1	3	20	2	0	180	1	0	0	1	4.95	0.14	0.2	1	7.2	1.36	0.51	0.03	507	7.05
302	4	46	4	3000	5	13	2	4	42	1	3	20	2	0	180	1	0	0	1	4.95	0.14	0.2	1	7.2	1.36	0.51	0.03	507	7.05
303	4	46	4	3000	6	10	2	4	42	1	3	20	2	0	180	1	0	0	1	4.95	0.14	0.2	1	7.2	1.36	0.51	0.03	507	7.05
304	4	47	4	6000	1	45	1	1	11	2	4.5	25	57	0	180	2	0	0	1	9.9	0.14	0.2	0.5	1.42	1.04	0.43	0.01	20.9	0.12
305	4	47	4	6000	2	40	2	2	11	2	4.5	25	57	0	180	2	0	0	1	9.9	0.14	0.2	0.5	1.42	1.36	0.43	0.01	53.6	0.32
306	4	47	4	6000	3	19	2	3	11	2	4.5	25	57	0	180	2	0	0	1	9.9	0.14	0.2	0.5	1.42	1.36	0.43	0.01	53.6	0.32
307	4	47	4	6000	4	17	2	3	11	2	4.5	25	57	0	180	2	0	0	1	9.9	0.14	0.2	0.5	1.42	1.36	0.43	0.01	53.6	0.32
308	4	47	4	6000	5	13	1	4	11	2	4.5	25	57	0	180	2	0	0	1	9.9	0.14	0.2	0.5	1.42	1.36	0.43	0.01	53.6	0.32
309	4	47	4	6000	6	10	2	4	11	2	4.5	25	57	0	180	2	0	0	1	9.9	0.14	0.2	0.5	1.42	1.36	0.43	0.01	53.6	0.32
310	4	47	4	6000	7	8	2	4	11	2	4.5	25	57	0	180	2	0	0	1	9.9	0.14	0.2	0.5	1.42	1.36	0.43	0.01	53.6	0.32
311	4	47	4	6000	8	33	1	3	11	2	4.5	25	57	0	180	2	0	0	1	9.9	0.14	0.2	0.5	1.42	1.1	0.43	0.01	25.2	0.15

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
312	4	47	4	6000	9	19	2	3	11	2	4.5	25	57	0	180	2	0	0	1	9.9	0.14	0.2	0.5	1.42	1.36	0.43	0.01	53.6	0.32
313	4	48	2	2000	1	35	1	1	1	1	4.5	15	7	10	90	2	0	2.22	1	3.3	0.14	0.2	0.5	6	0.7	0	0.01	21.8	0
314	4	48	2	2000	2	32	2	2	1	1	4.5	15	7	10	90	2	0	2.22	1	3.3	0.14	0.2	0.5	6	1.37	0	0.01	408	0.01
315	4	48	2	2000	3	35	2	3	1	1	4.5	15	7	10	90	2	0	2.22	1	3.3	0.14	0.2	0.5	6	1.37	0	0.01	408	0.01
316	4	48	2	2000	4	8	1	4	1	1	4.5	15	7	10	90	2	0	2.22	0	3.3	0.14	0.2	0	6	0	0	0	1	0
317	4	48	2	2000	5	7	1	4	1	1	4.5	15	7	10	90	2	0	2.22	0	3.3	0.14	0.2	0	6	0	0	0	1	0
318	4	48	2	2000	6	6	1	4	1	1	4.5	15	7	10	90	2	0	2.22	0	3.3	0.14	0.2	0	6	0	0	0	1	0
319	4	48	2	2000	7	5	1	4	1	1	4.5	15	7	10	90	2	0	2.22	0	3.3	0.14	0.2	0	6	0	0	0	1	0
320	4	48	2	2000	8	4	1	4	1	1	4.5	15	7	10	90	2	0	2.22	0	3.3	0.14	0.2	0	6	0	0	0	1	0
321	4	48	2	2000	9	2	1	4	1	1	4.5	15	7	10	90	2	0	2.22	0	3.3	0.14	0.2	0	6	0	0	0	1	0
322	4	48	2	2000	10	2	1	4	1	1	4.5	15	7	10	90	2	0	2.22	0	3.3	0.14	0.2	0	6	0	0	0	1	0
323	4	48	2	2000	11	11	2	4	1	1	4.5	15	7	10	90	2	0	2.22	0	3.3	0.14	0.2	0	6	0	0	0	1	0
324	4	48	2	2000	12	9	2	4	1	1	4.5	15	7	10	90	2	0	2.22	0	3.3	0.14	0.2	0	6	0	0	0	1	0
325	4	48	2	2000	13	7	2	4	1	1	4.5	15	7	10	90	2	0	2.22	0	3.3	0.14	0.2	0	6	0	0	0	1	0
326	4	48	2	2000	14	5	2	4	1	1	4.5	15	7	10	90	2	0	2.22	0	3.3	0.14	0.2	0	6	0	0	0	1	0
327	4	49	3	2000	1	45	1	1	1	1	4	20	2	0	60	2	0	0	1	3.3	0.14	0.2	0.5	4	0.68	0.51	0.01	15	0.1
328	4	49	3	2000	2	40	2	2	1	1	4	20	2	0	60	2	0	0	1	3.3	0.14	0.2	0.5	4	1.36	0.51	0.01	227	1.58
329	4	49	3	2000	3	65	2	3	1	1	4	20	2	0	60	2	0	0	0	3.3	0.14	0.2	0	4	0	0.51	0	1	0
330	4	49	3	2000	4	7	1	4	1	1	4	20	2	0	60	2	0	0	1	3.3	0.14	0.2	0.5	4	1.36	0.51	0.01	227	1.58
331	4	50	1	2000	1	70	1	1	12	2	4.5	20	7	5	120	2	0	1.11	1	3.3	0.14	0.2	0.5	0.94	1.21	0.02	0.01	21.6	0.01
332	4	50	1	2000	2	60	2	2	12	2	4.5	20	7	5	120	2	0	1.11	1	3.3	0.14	0.2	0.5	0.94	1.36	0.02	0.01	31.7	0.01
333	4	51	4	4000	1	45	1	1	13	2	4.5	20	7	5	120	2	0	1.11	1	6.6	0.14	0.2	0.5	6	1.21	0.11	0.01	204	0.31
334	4	51	4	4000	2	40	2	2	13	2	4.5	20	7	5	120	2	0	1.11	1	6.6	0.14	0.2	0.5	6	1.36	0.11	0.01	395	0.6
335	4	51	4	4000	3	22	1	3	13	2	4.5	20	7	5	120	2	0	1.11	1	6.6	0.14	0.2	0.5	6	1.21	0.11	0.01	204	0.31
336	4	51	4	4000	4	17	1	3	13	2	4.5	20	7	5	120	2	0	1.11	1	6.6	0.14	0.2	0.5	6	1.36	0.11	0.01	395	0.6
337	4	51	4	4000	5	5	1	4	13	2	4.5	20	7	5	120	2	0	1.11	1	6.6	0.14	0.2	0.5	6	1.36	0.11	0.01	395	0.6
338	4	52	3	5000	1	43	1	1	1	3	4.5	25	7	5	45	4	0	1.11	1	8.25	0.14	0.2	0.25	11.3	0.88	0.13	0.01	80.5	0.07
339	4	52	3	5000	2	21	1	2	1	3	4.5	25	7	5	45	4	0	1.11	1	8.25	0.14	0.2	0.25	11.3	1.1	0.13	0.01	248	0.22
340	4	52	3	5000	3	40	2	3	1	3	4.5	25	7	5	45	4	0	1.11	0	8.25	0.14	0.2	0	11.3	0	0.13	0	1	0
341	4	52	3	5000	4	17	2	3	1	3	4.5	25	7	5	45	4	0	1.11	0	8.25	0.14	0.2	0	11.3	0	0.13	0	1	0
342	4	52	3	5000	5	15	2	3	1	3	4.5	25	7	5	45	4	0	1.11	0	8.25	0.14	0.2	0	11.3	0	0.13	0	1	0
343	4	52	3	5000	6	14	2	4	1	3	4.5	25	7	5	45	4	0	1.11	1	8.25	0.14	0.2	0.25	11.3	1.36	0.13	0.01	901	0.79
344	4	53	3	3000	1	53	1	1	13	2	4.5	20	7	5	90	3	0	1.11	1	4.95	0.14	0.2	0.33	0.71	1.05	0.07	0.01	10.6	0.01
345	4	53	3	3000	2	40	2	2	13	2	4.5	20	7	5	90	3	0	1.11	1	4.95	0.14	0.2	0.33	0.71	1.36	0.07	0.01	21.4	0.01
346	4	53	3	3000	3	22	1	3	13	2	4.5	20	7	5	90	3	0	1.11	0	4.95	0.14	0.2	0	0.71	0	0.07	0	1	0
347	4	53	3	3000	4	21	1	3	13	2	4.5	20	7	5	90	3	0	1.11	0	4.95	0.14	0.2	0	0.71	0	0.07	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
348	4	53	3	3000	5	16	2	3	13	2	4.5	20	7	5	90	3	0	1.11	0	4.95	0.14	0.2	0	0.71	0	0.07	0	1	0
349	4	54	3	20000	1	60	1	1	13	3	4.5	15	4	20	60	3	0	4.44	1	33	0.14	0.2	0.33	4	1.35	0.18	0.01	215	0.35
350	4	54	3	20000	2	42	2	2	13	3	4.5	15	4	20	60	3	0	4.44	1	33	0.14	0.2	0.33	4	1.37	0.18	0.01	234	0.38
351	4	54	3	20000	3	25	1	3	13	3	4.5	15	4	20	60	3	0	4.44	0	33	0.14	0.2	0	4	0	0.18	0	1	0
352	4	54	3	20000	4	19	2	3	13	3	4.5	15	4	20	60	3	0	4.44	0	33	0.14	0.2	0	4	0	0.18	0	1	0
353	4	54	3	20000	5	17	2	3	13	3	4.5	15	4	20	60	3	0	4.44	0	33	0.14	0.2	0	4	0	0.18	0	1	0
354	4	55	2	8000	1	50	1	1	34	3	4.5	25	7	10	120	3	0	2.22	1	13.2	0.14	0.2	0.33	4.8	0.88	0.1	0.01	38.1	0.03
355	4	55	2	8000	2	47	2	2	34	3	4.5	25	7	10	120	3	0	2.22	1	13.2	0.14	0.2	0.33	4.8	1.36	0.1	0.01	283	0.24
356	4	55	2	8000	3	30	1	3	34	3	4.5	25	7	10	120	3	0	2.22	1	13.2	0.14	0.2	0.33	4.8	0.66	0.1	0.01	15.5	0.01
357	4	55	2	8000	4	25	1	3	34	3	4.5	25	7	10	120	3	0	2.22	1	13.2	0.14	0.2	0.33	4.8	1.04	0.1	0.01	74.4	0.06
358	4	55	2	8000	5	23	2	3	34	3	4.5	25	7	10	120	3	0	2.22	1	13.2	0.14	0.2	0.33	4.8	1.36	0.1	0.01	283	0.24
359	4	55	2	8000	6	19	2	3	34	3	4.5	25	7	10	120	3	0	2.22	1	13.2	0.14	0.2	0.33	4.8	1.36	0.1	0.01	283	0.24
360	4	55	2	8000	7	3	1	4	34	3	4.5	25	7	10	120	3	0	2.22	0	13.2	0.14	0.2	0	4.8	0	0.1	0	1	0
361	4	55	2	8000	8	1	1	4	34	3	4.5	25	7	10	120	3	0	2.22	0	13.2	0.14	0.2	0	4.8	0	0.1	0	1	0
362	4	56	4	3000	1	30	1	1	1	1	4.5	10	7	10	120	2	0	2.22	1	4.95	0.14	0.2	0.5	12	0.72	0.01	0.01	39.6	0.01
363	4	56	4	3000	2	28	2	2	1	1	4.5	10	7	10	120	2	0	2.22	1	4.95	0.14	0.2	0.5	12	1.37	0.01	0.01	1089	0.19
364	4	56	4	3000	3	25	2	3	1	1	4.5	10	7	10	120	2	0	2.22	1	4.95	0.14	0.2	0.5	12	1.37	0.01	0.01	1089	0.19
365	4	56	4	3000	4	17	1	3	1	1	4.5	10	7	10	120	2	0	2.22	1	4.95	0.14	0.2	0.5	12	1.37	0.01	0.01	1089	0.19
366	4	56	4	3000	5	2	2	4	1	1	4.5	10	7	10	120	2	0	2.22	1	4.95	0.14	0.2	0.5	12	1.37	0.01	0.01	1089	0.19
367	4	57	3	3000	1	25	1	1	1	2	4.5	20	7	10	120	2	0	2.22	1	4.95	0.14	0.2	0.5	6	1.21	0.01	0.01	204	0.02
368	4	57	3	3000	2	21	2	2	1	2	4.5	20	7	10	120	2	0	2.22	1	4.95	0.14	0.2	0.5	6	1.36	0.01	0.01	395	0.05
369	4	57	3	3000	3	23	1	3	1	2	4.5	20	7	10	120	2	0	2.22	0	4.95	0.14	0.2	0	6	0	0.01	0	1	0
370	4	57	3	3000	4	5	1	4	1	2	4.5	20	7	10	120	2	0	2.22	1	4.95	0.14	0.2	0.5	6	1.36	0.01	0.01	395	0.05
371	4	57	3	3000	5	3	1	4	1	2	4.5	20	7	10	120	2	0	2.22	1	4.95	0.14	0.2	0.5	6	1.36	0.01	0.01	395	0.05
372	4	58	2	3500	1	65	1	1	3	1	4.5	15	7	5	180	3	0	1.11	1	5.78	0.14	0.2	0.33	12	1.37	0.11	0.01	1053	1.02
373	4	58	2	3500	2	50	2	2	3	1	4.5	15	7	5	180	3	0	1.11	1	5.78	0.14	0.2	0.33	12	1.37	0.11	0.01	1053	1.02
374	4	58	2	3500	3	30	1	3	3	1	4.5	15	7	5	180	3	0	1.11	1	5.78	0.14	0.2	0.33	12	1.22	0.11	0.01	498	0.48
375	4	58	2	3500	4	27	1	3	3	1	4.5	15	7	5	180	3	0	1.11	1	5.78	0.14	0.2	0.33	12	1.37	0.11	0.01	1053	1.02
376	4	58	2	3500	5	12	1	4	3	1	4.5	15	7	5	180	3	0	1.11	0	5.78	0.14	0.2	0	12	0	0.11	0	1	0
377	4	58	2	3500	6	25	2	3	3	1	4.5	15	7	5	180	3	0	1.11	1	5.78	0.14	0.2	0.33	12	1.37	0.11	0.01	1053	1.02
378	4	58	2	3500	7	21	2	3	3	1	4.5	15	7	5	180	3	0	1.11	1	5.78	0.14	0.2	0.33	12	1.37	0.11	0.01	1053	1.02
379	4	59	2	2500	1	55	1	1	45	1	4.5	10	7	5	120	1	0	1.11	1	4.13	0.14	0.2	1	12	0.92	0.06	0.03	111	0.19
380	4	59	2	2500	2	54	2	2	45	1	4.5	10	7	5	120	1	0	1.11	1	4.13	0.14	0.2	1	12	1.37	0.06	0.03	1089	1.87
381	4	59	2	2500	3	40	2	3	45	1	4.5	10	7	5	120	1	0	1.11	1	4.13	0.14	0.2	1	12	1.37	0.06	0.03	1089	1.87
382	4	59	2	2500	4	35	1	3	45	1	4.5	10	7	5	120	1	0	1.11	1	4.13	0.14	0.2	1	12	1.37	0.06	0.03	1087	1.87
383	4	59	2	2500	5	30	1	3	45	1	4.5	10	7	5	120	1	0	1.11	1	4.13	0.14	0.2	1	12	1.37	0.06	0.03	1089	1.87

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
384	4	59	2	2500	6	30	2	3	45	1	4.5	10	7	5	120	1	0	1.11	1	4.13	0.14	0.2	1	12	1.37	0.06	0.03	1089	1.87
385	4	59	2	2500	7	20	2	3	45	1	4.5	10	7	5	120	1	0	1.11	1	4.13	0.14	0.2	1	12	1.37	0.06	0.03	1089	1.87
386	4	59	2	2500	8	5	1	4	45	1	4.5	10	7	5	120	1	0	1.11	0	4.13	0.14	0.2	0	12	0	0.06	0	1	0
387	4	59	2	2500	9	3	1	4	45	1	4.5	10	7	5	120	1	0	1.11	0	4.13	0.14	0.2	0	12	0	0.06	0	1	0
388	4	59	2	2500	10	1	1	4	45	1	4.5	10	7	5	120	1	0	1.11	0	4.13	0.14	0.2	0	12	0	0.06	0	1	0
389	4	60	2	4200	1	23	1	1	1	1	4.5	10	4	10	120	1	0	2.22	1	6.93	0.14	0.2	1	12	1.37	0.04	0.03	1087	1.18
390	4	60	2	4200	2	21	2	2	1	1	4.5	10	4	10	120	1	0	2.22	1	6.93	0.14	0.2	1	12	1.37	0.04	0.03	1089	1.18
391	4	60	2	4200	3	1	2	4	1	1	4.5	10	4	10	120	1	0	2.22	0	6.93	0.14	0.2	0	12	0	0.04	0	1	0
392	4	61	1	3500	1	25	1	1	1	1	4.5	15	4	10	60	2	0	2.22	1	5.78	0.14	0.2	0.5	3	0.7	0.02	0.01	13.4	0
393	4	61	1	3500	2	40	2	2	1	1	4.5	15	4	10	60	2	0	2.22	1	5.78	0.14	0.2	0.5	3	1.37	0.02	0.01	158	0.04
394	4	62	1	4000	1	35	1	1	1	1	4.5	10	7	5	30	2	0	1.11	1	6.6	0.14	0.2	0.5	3	1.07	0.16	0.01	53.7	0.11
395	4	62	1	4000	2	21	2	2	1	1	4.5	10	7	5	30	2	0	1.11	1	6.6	0.14	0.2	0.5	3	1.37	0.16	0.01	163	0.35
											ACTIVITY=			HEALTH			4	<<CODE		start col(for hh data)=						57			
1	1	1	4	22000	1	60	1	1	9	4	7	10	7	10	120	2	0	1.43	1	146	0.3	0.33	0.5	1	1.18	0.62	0.05	22.1	0.68
2	1	1	4	22000	2	35	2	2	9	4	7	10	7	10	120	2	0	1.43	1	146	0.3	0.33	0.5	1	1.37	0.62	0.05	36.1	1.11
3	1	1	4	22000	3	25	1	3	9	4	7	10	7	10	120	2	0	1.43	1	146	0.3	0.33	0.5	1	1.18	0.62	0.05	22.1	0.68
4	1	1	4	22000	4	20	2	3	9	4	7	10	7	10	120	2	0	1.43	1	146	0.3	0.33	0.5	1	1.27	0.62	0.05	27.4	0.84
5	1	1	4	22000	5	22	1	3	9	4	7	10	7	10	120	2	0	1.43	1	146	0.3	0.33	0.5	1	1.18	0.62	0.05	22.1	0.68
6	1	1	4	22000	6	16	2	3	9	4	7	10	7	10	120	2	0	1.43	1	146	0.3	0.33	0.5	1	1.27	0.62	0.05	27.4	0.84
7	1	1	4	22000	7	6	1	4	9	4	7	10	7	10	120	2	0	1.43	1	146	0.3	0.33	0.5	1	1.37	0.62	0.05	36.1	1.11
8	1	1	4	22000	8	2	1	4	9	4	7	10	7	10	120	2	0	1.43	1	146	0.3	0.33	0.5	1	1.37	0.62	0.05	36.1	1.11
9	1	2	4	2000	1	43	1	1	9	4	7	15	7	10	120	2	0	1.43	1	13.3	0.3	0.33	0.5	1	1.37	0.13	0.05	35.2	0.23
10	1	2	4	2000	2	40	2	2	9	4	7	15	7	10	120	2	0	1.43	1	13.3	0.3	0.33	0.5	1	1.37	0.13	0.05	35.2	0.23
11	1	2	4	2000	3	20	1	3	9	4	7	15	7	10	120	2	0	1.43	1	13.3	0.3	0.33	0.5	1	0.7	0.13	0.05	6.21	0.04
12	1	2	4	2000	4	12	2	4	9	4	7	15	7	10	120	2	0	1.43	1	13.3	0.3	0.33	0.5	1	1.37	0.13	0.05	35.2	0.23
13	1	2	4	2000	5	10	1	4	9	4	7	15	7	10	120	2	0	1.43	1	13.3	0.3	0.33	0.5	1	1.37	0.13	0.05	35.2	0.23
14	1	2	4	2000	6	8	1	4	9	4	7	15	7	10	120	2	0	1.43	1	13.3	0.3	0.33	0.5	1	1.37	0.13	0.05	35.2	0.23
15	1	2	4	2000	7	7	2	4	9	4	7	15	7	10	120	2	0	1.43	1	13.3	0.3	0.33	0.5	1	1.37	0.13	0.05	35.2	0.23
16	1	2	4	2000	8	5	1	4	9	4	7	15	7	10	120	2	0	1.43	1	13.3	0.3	0.33	0.5	1	1.37	0.13	0.05	35.2	0.23
17	1	2	4	2000	9	2	1	4	9	4	7	15	7	10	120	2	0	1.43	1	13.3	0.3	0.33	0.5	1	1.37	0.13	0.05	35.2	0.23
18	1	3	4	3500	1	50	1	1	9	4	7	15	7	10	180	2	0	1.43	1	23.3	0.3	0.33	0.5	1	0.99	0.26	0.05	13.2	0.17
19	1	3	4	3500	2	45	2	2	9	4	7	15	7	10	180	2	0	1.43	1	23.3	0.3	0.33	0.5	1	1.37	0.26	0.05	35.2	0.45
20	1	3	4	3500	3	25	1	3	9	4	7	15	7	10	180	2	0	1.43	1	23.3	0.3	0.33	0.5	1	0.99	0.26	0.05	13.2	0.17
21	1	3	4	3500	4	18	1	3	9	4	7	15	7	10	180	2	0	1.43	1	23.3	0.3	0.33	0.5	1	1.37	0.26	0.05	35.2	0.45
22	1	3	4	3500	5	10	2	4	9	4	7	15	7	10	180	2	0	1.43	1	23.3	0.3	0.33	0.5	1	1.37	0.26	0.05	35.2	0.45
23	1	3	4	3500	6	7	2	4	9	4	7	15	7	10	180	2	0	1.43	1	23.3	0.3	0.33	0.5	1	1.37	0.26	0.05	35.2	0.45

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
24	1	3	4	3500	7	3	1	4	9	4	7	15	7	10	180	2	0	1.43	1	23.3	0.3	0.33	0.5	1	1.37	0.26	0.05	35.2	0.45
25	1	4	2	2000	1	35	1	1	9	4	7	15	7	10	120	2	0	1.43	1	13.3	0.3	0.33	0.5	1	1.06	0.13	0.05	15.9	0.11
26	1	4	2	2000	2	27	2	2	9	4	7	15	7	10	120	2	0	1.43	1	13.3	0.3	0.33	0.5	1	1.37	0.13	0.05	35.2	0.23
27	1	4	2	2000	3	5	1	4	9	4	7	15	7	10	120	2	0	1.43	0	13.3	0.3	0.33	0	1	0	0.13	0	1	0
28	1	4	2	2000	4	3	1	4	9	4	7	15	7	10	120	2	0	1.43	0	13.3	0.3	0.33	0	1	0	0.13	0	1	0
29	1	4	2	2000	5	1	2	4	9	4	7	15	7	10	120	2	0	1.43	0	13.3	0.3	0.33	0	1	0	0.13	0	1	0
30	1	5	2	3000	1	40	1	1	18	4	7	20	7	10	0	3	0	1.43	1	20	0.3	0.33	0.33	1	1.21	0.19	0.03	23.2	0.14
31	1	5	2	3000	2	30	2	2	18	4	7	20	7	10	0	3	0	1.43	1	20	0.3	0.33	0.33	1	1.36	0.19	0.03	34.3	0.21
32	1	5	2	3000	3	5	2	4	18	4	7	20	7	10	0	3	0	1.43	0	20	0.3	0.33	0	1	0	0.19	0	1	0
33	1	6	1	8000	1	28	1	1	4	4	3	60	5	0	4	2	0	0	1	53.2	0.3	0.33	0.5	1	1.09	0.14	0.05	15.1	0.1
34	1	6	1	8000	2	60	2	2	4	4	3	60	5	0	4	2	0	0	1	53.2	0.3	0.33	0.5	1	1.33	0.14	0.05	27.6	0.18
35	1	6	1	8000	3	26	1	3	4	4	3	60	5	0	4	2	0	0	0	53.2	0.3	0.33	0	1	0	0.14	0	1	0
36	1	6	1	8000	4	23	1	3	4	4	3	60	5	0	4	2	0	0	0	53.2	0.3	0.33	0	1	0	0.14	0	1	0
37	1	7	2	2000	1	30	1	1	4	4	4	4	7	10	180	4	0	2.5	1	13.3	0.3	0.33	0.25	1	0.94	0.19	0.02	11.8	0.06
38	1	7	2	2000	2	25	2	2	4	4	4	4	7	10	180	4	0	2.5	1	13.3	0.3	0.33	0.25	1	1.38	0.19	0.02	37.2	0.18
39	1	7	2	2000	3	3	1	4	4	4	4	4	7	10	180	4	0	2.5	0	13.3	0.3	0.33	0	1	0	0.19	0	1	0
40	1	7	2	2000	4	1	1	4	4	4	4	4	7	10	180	4	0	2.5	0	13.3	0.3	0.33	0	1	0	0.19	0	1	0
41	1	8	2	5000	1	40	1	1	4	4	3	15	7	5	4	2	0	1.67	1	33.3	0.3	0.33	0.5	1	1.12	0.45	0.05	18.6	0.41
42	1	8	2	5000	2	35	2	2	4	4	3	15	7	5	4	2	0	1.67	1	33.3	0.3	0.33	0.5	1	1.37	0.45	0.05	35.2	0.78
43	1	8	2	5000	3	80	2	3	4	4	3	15	7	5	4	2	0	1.67	1	33.3	0.3	0.33	0.5	1	1.37	0.45	0.05	35.2	0.78
44	1	8	2	5000	4	15	2	3	4	4	3	15	7	5	4	2	0	1.67	1	33.3	0.3	0.33	0.5	1	1.37	0.45	0.05	35.2	0.78
45	1	8	2	5000	5	13	1	4	4	4	3	15	7	5	4	2	0	1.67	0	33.3	0.3	0.33	0	1	0	0.45	0	1	0
46	1	9	4	7000	1	40	1	1	123	4	7	30	7	5	4	2	0	0.71	1	46.6	0.3	0.33	0.5	1	1.09	0.3	0.05	16.5	0.24
47	1	9	4	7000	2	35	2	2	123	4	7	30	7	5	4	2	0	0.71	1	46.6	0.3	0.33	0.5	1	1.36	0.3	0.05	32.5	0.48
48	1	9	4	7000	3	18	1	3	123	4	7	30	7	5	4	2	0	0.71	1	46.6	0.3	0.33	0.5	1	1.36	0.3	0.05	32.5	0.48
49	1	9	4	7000	4	8	1	4	123	4	7	30	7	5	4	2	0	0.71	1	46.6	0.3	0.33	0.5	1	1.36	0.3	0.05	32.5	0.48
50	1	9	4	7000	5	5	2	4	123	4	7	30	7	5	4	2	0	0.71	1	46.6	0.3	0.33	0.5	1	1.36	0.3	0.05	32.5	0.48
51	1	10	4	1500	1	45	1	1	4	4	7	15	7	5	4	4	0	0.71	1	9.98	0.3	0.33	0.25	1	0.91	0.22	0.02	10.6	0.06
52	1	10	4	1500	2	32	2	2	4	4	7	15	7	5	4	4	0	0.71	1	9.98	0.3	0.33	0.25	1	1.37	0.22	0.02	35.2	0.19
53	1	10	4	1500	3	21	1	3	4	4	7	15	7	5	4	4	0	0.71	1	9.98	0.3	0.33	0.25	1	1.37	0.22	0.02	35.2	0.19
54	1	10	4	1500	4	18	1	3	4	4	7	15	7	5	4	4	0	0.71	1	9.98	0.3	0.33	0.25	1	1.37	0.22	0.02	35.2	0.19
55	1	10	4	1500	5	15	2	3	4	4	7	15	7	5	4	4	0	0.71	1	9.98	0.3	0.33	0.25	1	1.37	0.22	0.02	35.2	0.19
56	1	10	4	1500	6	10	2	4	4	4	7	15	7	5	4	4	0	0.71	1	9.98	0.3	0.33	0.25	1	1.37	0.22	0.02	35.2	0.19
57	1	10	4	1500	7	6	1	4	4	4	7	15	7	5	4	4	0	0.71	1	9.98	0.3	0.33	0.25	1	1.37	0.22	0.02	35.2	0.19
58	1	11	4	9500	1	75	1	1	4	4	7.5	20	45	0	4	1	0	0	1	63.2	0.3	0.33	1	1	1.36	0.51	0.1	34.3	1.74
59	1	11	4	9500	2	43	1	2	4	4	7.5	20	45	0	4	1	0	0	1	63.2	0.3	0.33	1	1	1.11	0.51	0.1	17.9	0.91

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA										DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
60	1	11	4	9500	3	36	2	3	4	4	7.5	20	45	0	4	1	0	0	1	63.2	0.3	0.33	1	1	1.36	0.51	0.1	34.3	1.74
61	1	11	4	9500	4	37	1	3	4	4	7.5	20	45	0	4	1	0	0	1	63.2	0.3	0.33	1	1	1.17	0.51	0.1	20.6	1.04
62	1	11	4	9500	5	26	2	3	4	4	7.5	20	45	0	4	1	0	0	1	63.2	0.3	0.33	1	1	1.36	0.51	0.1	34.3	1.74
63	1	11	4	9500	6	18	1	3	4	4	7.5	20	45	0	4	1	0	0	1	63.2	0.3	0.33	1	1	1.36	0.51	0.1	34.3	1.74
64	1	11	4	9500	7	7	1	4	4	4	7.5	20	45	0	4	1	0	0	1	63.2	0.3	0.33	1	1	1.36	0.51	0.1	34.3	1.74
65	1	11	4	9500	8	10	1	4	4	4	7.5	20	45	0	4	1	0	0	1	63.2	0.3	0.33	1	1	1.36	0.51	0.1	34.3	1.74
66	1	11	4	9500	9	16	1	3	4	4	7.5	20	45	0	4	1	0	0	1	63.2	0.3	0.33	1	1	1.36	0.51	0.1	34.3	1.74
67	1	11	4	9500	10	6	1	4	4	4	7.5	20	45	0	4	1	0	0	1	63.2	0.3	0.33	1	1	1.36	0.51	0.1	34.3	1.74
68	2	12	4	1500	1	30	1	1	8	4	7	60	0	0	120	1	0	0	1	9.98	0.26	0.29	1	1	0.95	0.14	0.08	10.6	0.11
69	2	12	4	1500	2	45	2	2	8	4	7	60	0	0	120	1	0	0	1	9.98	0.26	0.29	1	1	1.33	0.14	0.08	27.6	0.28
70	2	12	4	1500	3	25	2	3	8	4	7	60	0	0	120	1	0	0	1	9.98	0.26	0.29	1	1	1.33	0.14	0.08	27.6	0.28
71	2	12	4	1500	4	22	2	3	8	4	7	60	0	0	120	1	0	0	1	9.98	0.26	0.29	1	1	1.33	0.14	0.08	27.6	0.28
72	2	12	4	1500	5	15	1	3	8	4	7	60	0	0	120	1	0	0	1	9.98	0.26	0.29	1	1	1.33	0.14	0.08	27.6	0.28
73	2	12	4	1500	6	8	1	4	8	4	7	60	0	0	120	1	0	0	1	9.98	0.26	0.29	1	1	1.33	0.14	0.08	27.6	0.28
74	2	12	4	1500	7	1	2	4	8	4	7	60	0	0	120	1	0	0	1	9.98	0.26	0.29	1	1	1.33	0.14	0.08	27.6	0.28
75	2	13	3	3500	1	40	1	1	8	4	8	40	7	10	120	3	0	1.25	1	23.3	0.26	0.29	0.33	1	0.83	0.11	0.03	8.22	0.02
76	2	13	3	3500	2	35	2	2	8	4	8	40	7	10	120	3	0	1.25	1	23.3	0.26	0.29	0.33	1	1.35	0.11	0.03	30.8	0.09
77	2	13	3	3500	3	16	1	3	8	4	8	40	7	10	120	3	0	1.25	0	23.3	0.26	0.29	0	1	0	0.11	0	1	0
78	2	14	3	3000	1	25	1	1	4	4	7	10	4	15	120	4	0	2.14	1	20	0.26	0.29	0.25	1	1.18	0.16	0.02	22.1	0.07
79	2	14	3	3000	2	50	2	2	4	4	7	10	4	15	120	4	0	2.14	1	20	0.26	0.29	0.25	1	1.37	0.16	0.02	36.1	0.11
80	2	14	3	3000	3	16	2	3	4	4	7	10	4	15	120	4	0	2.14	0	20	0.26	0.29	0	1	0	0.16	0	1	0
81	2	15	2	7000	1	49	1	1	8	4	4	0	7	10	180	3	0	2.5	1	46.6	0.26	0.29	0.33	1	0.95	0.65	0.03	12.3	0.2
82	2	15	2	7000	2	47	2	2	8	4	4	0	7	10	180	3	0	2.5	1	46.6	0.26	0.29	0.33	1	1.38	0.65	0.03	37.9	0.62
83	2	15	2	7000	3	25	2	3	8	4	4	0	7	10	180	3	0	2.5	1	46.6	0.26	0.29	0.33	1	1.38	0.65	0.03	37.9	0.62
84	2	15	2	7000	4	24	1	3	8	4	4	0	7	10	180	3	0	2.5	1	46.6	0.26	0.29	0.33	1	0.76	0.65	0.03	7.42	0.12
85	2	15	2	7000	5	22	1	3	8	4	4	0	7	10	180	3	0	2.5	1	46.6	0.26	0.29	0.33	1	0.76	0.65	0.03	7.42	0.12
86	2	15	2	7000	6	4	1	4	8	4	4	0	7	10	180	3	0	2.5	0	46.6	0.26	0.29	0	1	0	0.65	0	1	0
87	2	15	2	7000	7	3	1	4	8	4	4	0	7	10	180	3	0	2.5	0	46.6	0.26	0.29	0	1	0	0.65	0	1	0
88	2	15	2	7000	8	1	1	4	8	4	4	0	7	10	180	3	0	2.5	0	46.6	0.26	0.29	0	1	0	0.65	0	1	0
89	2	15	2	7000	9	3	1	4	8	4	4	0	7	10	180	3	0	2.5	0	46.6	0.26	0.29	0	1	0	0.65	0	1	0
90	2	15	2	7000	10	2	2	4	8	4	4	0	7	10	180	3	0	2.5	0	46.6	0.26	0.29	0	1	0	0.65	0	1	0
91	2	15	2	7000	11	1	1	4	8	4	4	0	7	10	180	3	0	2.5	0	46.6	0.26	0.29	0	1	0	0.65	0	1	0
92	2	16	3	8500	1	60	1	1	8	4	7	60	0	0	120	4	0	0	1	56.5	0.26	0.29	0.25	1	1.15	0.14	0.02	17.4	0.04
93	2	16	3	8500	2	55	2	2	8	4	7	60	0	0	120	4	0	0	1	56.5	0.26	0.29	0.25	1	1.33	0.14	0.02	27.6	0.07
94	2	16	3	8500	3	22	1	3	8	4	7	60	0	0	120	4	0	0	0	56.5	0.26	0.29	0	1	0	0.14	0	1	0
95	2	16	3	8500	4	18	1	3	8	4	7	60	0	0	120	4	0	0	0	56.5	0.26	0.29	0	1	0	0.14	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
96	2	17	4	6000	1	50	1	1	4	4	7	15	7	10	180	5	0	1.43	1	39.9	0.26	0.29	0.2	1	0.7	0.37	0.02	6.21	0.03
97	2	17	4	6000	2	45	2	2	4	4	7	15	7	10	180	5	0	1.43	1	39.9	0.26	0.29	0.2	1	1.37	0.37	0.02	35.2	0.19
98	2	17	4	6000	3	30	1	3	4	4	7	15	7	10	180	5	0	1.43	1	39.9	0.26	0.29	0.2	1	0.7	0.37	0.02	6.21	0.03
99	2	17	4	6000	4	22	1	3	4	4	7	15	7	10	180	5	0	1.43	1	39.9	0.26	0.29	0.2	1	1.37	0.37	0.02	35.2	0.19
100	2	17	4	6000	5	15	2	3	4	4	7	15	7	10	180	5	0	1.43	1	39.9	0.26	0.29	0.2	1	1.37	0.37	0.02	35.2	0.19
101	2	17	4	6000	6	28	2	3	4	4	7	15	7	10	180	5	0	1.43	1	39.9	0.26	0.29	0.2	1	1.37	0.37	0.02	35.2	0.19
102	2	17	4	6000	7	20	2	3	4	4	7	15	7	10	180	5	0	1.43	1	39.9	0.26	0.29	0.2	1	1.37	0.37	0.02	35.2	0.19
103	2	17	4	6000	8	12	1	4	4	4	7	15	7	10	180	5	0	1.43	1	39.9	0.26	0.29	0.2	1	1.37	0.37	0.02	35.2	0.19
104	2	17	4	6000	9	10	1	4	4	4	7	15	7	10	180	5	0	1.43	1	39.9	0.26	0.29	0.2	1	1.37	0.37	0.02	35.2	0.19
105	2	17	4	6000	10	6	1	4	4	4	7	15	7	10	180	5	0	1.43	1	39.9	0.26	0.29	0.2	1	1.37	0.37	0.02	35.2	0.19
106	2	18	3	4500	1	45	1	1	4	0	7	60	0	0	120	1	0	0	1	29.9	0.26	0.29	1	1	0.95	0.14	0.08	10.6	0.11
107	2	18	3	4500	2	38	2	2	4	0	7	60	0	0	120	1	0	0	1	29.9	0.26	0.29	1	1	1.33	0.14	0.08	27.6	0.28
108	2	18	3	4500	3	25	1	3	4	0	7	60	0	0	120	1	0	0	0	29.9	0.26	0.29	0	1	0	0.14	0	1	0
109	2	18	3	4500	4	15	1	3	4	0	7	60	0	0	120	1	0	0	0	29.9	0.26	0.29	0	1	0	0.14	0	1	0
110	2	18	3	4500	5	20	2	3	4	0	7	60	0	0	120	1	0	0	0	29.9	0.26	0.29	0	1	0	0.14	0	1	0
111	2	19	2	1500	1	35	1	1	8	0	0	0	0	0	0	0	0	0	1	9.98	0.26	0.29	1	1	1.09	1	0.08	17.9	1.35
112	2	19	2	1500	2	20	2	2	8	0	0	0	0	0	0	0	0	0	1	9.98	0.26	0.29	1	1	1.38	1	0.08	37.9	2.85
113	2	19	2	1500	3	3	2	4	8	0	0	0	0	0	0	0	0	0	0	9.98	0.26	0.29	1	1	0	1	0.08	1	0.08
114	2	19	2	1500	4	1	2	4	8	0	0	0	0	0	0	0	0	0	0	9.98	0.26	0.29	1	1	0	1	0.08	1	0.08
115	2	20	4	2000	1	45	1	1	9	4	8	16	7	12	120	4	0	1.5	1	13.3	0.26	0.29	0.25	1	1.06	0.1	0.02	15.7	0.03
116	2	20	4	2000	2	42	2	2	9	4	8	16	7	12	120	4	0	1.5	1	13.3	0.26	0.29	0.25	1	1.37	0.1	0.02	35	0.06
117	2	20	4	2000	3	28	1	3	9	4	8	16	7	12	120	4	0	1.5	1	13.3	0.26	0.29	0.25	1	1.37	0.1	0.02	35	0.06
118	2	20	4	2000	4	22	2	3	9	4	8	16	7	12	120	4	0	1.5	1	13.3	0.26	0.29	0.25	1	1.37	0.1	0.02	35	0.06
119	2	20	4	2000	5	16	2	3	9	4	8	16	7	12	120	4	0	1.5	1	13.3	0.26	0.29	0.25	1	1.37	0.1	0.02	35	0.06
120	2	20	4	2000	6	3	1	4	9	4	8	16	7	12	120	4	0	1.5	1	13.3	0.26	0.29	0.25	1	1.37	0.1	0.02	35	0.06
121	2	20	4	2000	7	1	2	4	9	4	8	16	7	12	120	4	0	1.5	1	13.3	0.26	0.29	0.25	1	1.37	0.1	0.02	35	0.06
122	2	21	4	5500	1	60	1	1	9	4	7	60	0	0	180	4	0	0	1	36.6	0.26	0.29	0.25	1	1.09	0.14	0.02	15.1	0.04
123	2	21	4	5500	2	21	1	2	9	4	7	60	0	0	180	4	0	0	1	36.6	0.26	0.29	0.25	1	1.09	0.14	0.02	15.1	0.04
124	2	21	4	5500	3	16	1	3	9	4	7	60	0	0	180	4	0	0	1	36.6	0.26	0.29	0.25	1	1.33	0.14	0.02	27.6	0.07
125	2	21	4	5500	4	14	2	4	9	4	7	60	0	0	180	4	0	0	1	36.6	0.26	0.29	0.25	1	1.33	0.14	0.02	27.6	0.07
126	2	21	4	5500	5	12	2	4	9	4	7	60	0	0	180	4	0	0	1	36.6	0.26	0.29	0.25	1	1.33	0.14	0.02	27.6	0.07
127	2	21	4	5500	6	9	2	4	9	4	7	60	0	0	180	4	0	0	1	36.6	0.26	0.29	0.25	1	1.33	0.14	0.02	27.6	0.07
128	2	22	2	4200	1	35	1	1	1	4	7	60	0	0	120	0	0	0	1	27.9	0.26	0.29	1	1	0.95	0.14	0.08	10.6	0.11
129	2	22	2	4200	2	22	2	2	1	4	7	60	0	0	120	0	0	0	1	27.9	0.26	0.29	1	1	1.33	0.14	0.08	27.6	0.28
130	2	22	2	4200	3	10	1	4	1	4	7	60	0	0	120	0	0	0	0	27.9	0.26	0.29	1	1	0	0.14	0.08	1	0.01
131	2	22	2	4200	4	8	2	4	1	4	7	60	0	0	120	0	0	0	0	27.9	0.26	0.29	1	1	0	0.14	0.08	1	0.01

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
132	2	23	2	2500	1	30	1	1	9	4	7	60	0	0	180	2	0	0	1	16.6	0.26	0.29	0.5	1	0.76	0.14	0.04	6.6	0.03
133	2	23	2	2500	2	27	2	2	9	4	7	60	0	0	180	2	0	0	1	16.6	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
134	2	23	2	2500	3	10	1	4	9	4	7	60	0	0	180	2	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0
135	2	23	2	2500	4	8	1	4	9	4	7	60	0	0	180	2	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0
136	2	23	2	2500	5	6	1	4	9	4	7	60	0	0	180	2	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0
137	2	23	2	2500	6	5	1	4	9	4	7	60	0	0	180	2	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0
138	2	24	4	1500	1	45	1	1	9	4	7	60	0	0	120	2	0	0	1	9.98	0.26	0.29	0.5	1	1.15	0.14	0.04	17.4	0.09
139	2	24	4	1500	2	40	2	2	9	4	7	60	0	0	120	2	0	0	1	9.98	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
140	2	24	4	1500	3	21	1	3	9	4	7	60	0	0	120	2	0	0	1	9.98	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
141	2	24	4	1500	4	15	1	3	9	4	7	60	0	0	120	2	0	0	1	9.98	0.26	0.29	0.5	1	1.15	0.14	0.04	17.4	0.09
142	2	24	4	1500	5	18	2	3	9	4	7	60	0	0	120	2	0	0	1	9.98	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
143	2	25	2	2500	1	30	1	1	9	4	7	60	0	0	120	2	0	0	1	16.6	0.26	0.29	0.5	1	0.76	0.14	0.04	6.6	0.03
144	2	25	2	2500	2	27	2	2	9	4	7	60	0	0	120	2	0	0	1	16.6	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
145	2	25	2	2500	3	10	1	4	9	4	7	60	0	0	120	2	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0
146	2	25	2	2500	4	8	1	4	9	4	7	60	0	0	120	2	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0
147	2	25	2	2500	5	6	1	4	9	4	7	60	0	0	120	2	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0
148	2	25	2	2500	6	5	1	4	9	4	7	60	0	0	120	2	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0
149	2	26	4	7600	1	65	1	1	9	4	7.5	60	0	0	30	2	0	0	1	50.5	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
150	2	26	4	7600	2	58	2	2	9	4	7.5	60	0	0	30	2	0	0	1	50.5	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
151	2	26	4	7600	3	33	1	3	9	4	7.5	60	0	0	30	2	0	0	1	50.5	0.26	0.29	0.5	1	1.09	0.14	0.04	15.1	0.08
152	2	26	4	7600	4	21	1	3	9	4	7.5	60	0	0	30	2	0	0	1	50.5	0.26	0.29	0.5	1	1.09	0.14	0.04	15.1	0.08
153	2	26	4	7600	5	20	2	3	9	4	7.5	60	0	0	30	2	0	0	1	50.5	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
154	2	26	4	7600	6	18	1	3	9	4	7.5	60	0	0	30	2	0	0	1	50.5	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
155	2	26	4	7600	7	17	1	3	9	4	7.5	60	0	0	30	2	0	0	1	50.5	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
156	2	26	4	7600	8	13	2	4	9	4	7.5	60	0	0	30	2	0	0	1	50.5	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
157	2	27	2	8000	1	50	1	1	9	4	0	0	0	0	120	2	0	0	1	53.2	0.26	0.29	0.5	1	1.24	1	0.04	26.4	0.99
158	2	27	2	8000	2	45	2	2	9	4	0	0	0	0	120	2	0	0	1	53.2	0.26	0.29	0.5	1	1.31	1	0.04	31.6	1.19
159	2	27	2	8000	3	25	1	3	9	4	0	0	0	0	120	2	0	0	1	53.2	0.26	0.29	0.5	1	1.24	1	0.04	26.4	0.99
160	2	27	2	8000	4	22	2	3	9	4	0	0	0	0	120	2	0	0	1	53.2	0.26	0.29	0.5	1	1.31	1	0.04	31.6	1.19
161	2	27	2	8000	5	10	1	4	9	4	0	0	0	0	120	2	0	0	0	53.2	0.26	0.29	0	1	0	1	0	1	0
162	2	27	2	8000	6	8	1	4	9	4	0	0	0	0	120	2	0	0	0	53.2	0.26	0.29	0	1	0	1	0	1	0
163	2	27	2	8000	7	2	2	4	9	4	0	0	0	0	120	2	0	0	0	53.2	0.26	0.29	0	1	0	1	0	1	0
164	2	28	2	5000	1	33	1	1	9	4	7.5	40	7	10	30	3	0	1.33	1	33.3	0.26	0.29	0.33	1	1	0.14	0.03	12.8	0.05
165	2	28	2	5000	2	29	2	2	9	4	7.5	40	7	10	30	3	0	1.33	1	33.3	0.26	0.29	0.33	1	1.35	0.14	0.03	30.8	0.11
166	2	28	2	5000	3	5	1	4	9	4	7.5	40	7	10	30	3	0	1.33	0	33.3	0.26	0.29	0	1	0	0.14	0	1	0
167	2	28	2	5000	4	3	2	4	9	4	7.5	40	7	10	30	3	0	1.33	0	33.3	0.26	0.29	0	1	0	0.14	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
168	2	29	4	3000	1	48	1	1	9	4	7	20	7	10	30	2	0	1.43	1	20	0.26	0.29	0.5	1	1.36	0.19	0.04	34.3	0.24
169	2	29	4	3000	2	42	2	2	9	4	7	20	7	10	30	2	0	1.43	1	20	0.26	0.29	0.5	1	1.36	0.19	0.04	34.3	0.24
170	2	29	4	3000	3	27	1	3	9	4	7	20	7	10	30	2	0	1.43	1	20	0.26	0.29	0.5	1	1.17	0.19	0.04	20.6	0.15
171	2	29	4	3000	4	22	2	3	9	4	7	20	7	10	30	2	0	1.43	1	20	0.26	0.29	0.5	1	1.36	0.19	0.04	34.3	0.24
172	2	29	4	3000	5	18	2	3	9	4	7	20	7	10	30	2	0	1.43	1	20	0.26	0.29	0.5	1	1.36	0.19	0.04	34.3	0.24
173	2	29	4	3000	6	6	1	4	9	4	7	20	7	10	30	2	0	1.43	1	20	0.26	0.29	0.5	1	1.36	0.19	0.04	34.3	0.24
174	2	29	4	3000	7	5	1	4	9	4	7	20	7	10	30	2	0	1.43	1	20	0.26	0.29	0.5	1	1.36	0.19	0.04	34.3	0.24
175	2	30	2	8000	1	45	1	1	9	4	3	45	0	0	180	4	0	0	1	53.2	0.26	0.29	0.25	1	0.81	0.22	0.02	7.79	0.03
176	2	30	2	8000	2	40	2	2	9	4	3	45	0	0	180	4	0	0	1	53.2	0.26	0.29	0.25	1	1.35	0.22	0.02	30	0.13
177	2	30	2	8000	3	23	1	3	9	4	3	45	0	0	180	4	0	0	1	53.2	0.26	0.29	0.25	1	0.81	0.22	0.02	7.79	0.03
178	2	30	2	8000	4	21	1	3	9	4	3	45	0	0	180	4	0	0	1	53.2	0.26	0.29	0.25	1	0.57	0.22	0.02	4.24	0.02
179	2	30	2	8000	5	12	1	4	9	4	3	45	0	0	180	4	0	0	0	53.2	0.26	0.29	0	1	0	0.22	0	1	0
180	2	30	2	8000	6	10	1	4	9	4	3	45	0	0	180	4	0	0	0	53.2	0.26	0.29	0	1	0	0.22	0	1	0
181	2	30	2	8000	7	8	2	4	9	4	3	45	0	0	180	4	0	0	0	53.2	0.26	0.29	0	1	0	0.22	0	1	0
182	2	30	2	8000	8	6	2	4	9	4	3	45	0	0	180	4	0	0	0	53.2	0.26	0.29	0	1	0	0.22	0	1	0
183	2	30	2	8000	9	23	2	3	9	4	3	45	0	0	180	4	0	0	1	53.2	0.26	0.29	0.25	1	1.35	0.22	0.02	30	0.13
184	2	31	1	7500	1	40	1	1	9	4	7	60	0	0	120	2	0	0	1	49.9	0.26	0.29	0.5	1	0.76	0.14	0.04	6.6	0.03
185	2	31	1	7500	2	23	1	2	9	4	7	60	0	0	120	2	0	0	1	49.9	0.26	0.29	0.5	1	0.76	0.14	0.04	6.6	0.03
186	2	31	1	7500	3	22	1	3	9	4	7	60	0	0	120	2	0	0	0	49.9	0.26	0.29	0	1	0	0.14	0	1	0
187	2	31	1	7500	4	38	2	3	9	4	7	60	0	0	120	2	0	0	0	49.9	0.26	0.29	0	1	0	0.14	0	1	0
188	2	31	1	7500	5	20	2	3	9	4	7	60	0	0	120	2	0	0	0	49.9	0.26	0.29	0	1	0	0.14	0	1	0
189	2	32	2	2500	1	28	1	1	9	4	7	60	7	0	90	3	0	0	1	16.6	0.26	0.29	0.33	1	0.95	0.14	0.03	10.6	0.04
190	2	32	2	2500	2	22	2	2	9	4	7	60	7	0	90	3	0	0	1	16.6	0.26	0.29	0.33	1	1.33	0.14	0.03	27.6	0.09
191	2	32	2	2500	3	3	1	4	9	4	7	60	7	0	90	3	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0
192	2	32	2	2500	4	1	1	4	9	4	7	60	7	0	90	3	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0
193	2	33	4	6800	1	55	1	1	9	4	7	60	0	0	120	2	0	0	1	45.2	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
194	2	33	4	6800	2	30	1	2	9	4	7	60	0	0	120	2	0	0	1	45.2	0.26	0.29	0.5	1	0.5	0.14	0.04	3.46	0.02
195	2	33	4	6800	3	28	1	3	9	4	7	60	0	0	120	2	0	0	1	45.2	0.26	0.29	0.5	1	0.76	0.14	0.04	6.6	0.03
196	2	33	4	6800	4	25	1	3	9	4	7	60	0	0	120	2	0	0	1	45.2	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
197	2	33	4	6800	5	18	1	3	9	4	7	60	0	0	120	2	0	0	1	45.2	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
198	2	33	4	6800	6	25	2	3	9	4	7	60	0	0	120	2	0	0	1	45.2	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
199	2	33	4	6800	7	10	2	4	9	4	7	60	0	0	120	2	0	0	1	45.2	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
200	2	33	4	6800	8	7	2	4	9	4	7	60	0	0	120	2	0	0	1	45.2	0.26	0.29	0.5	1	1.33	0.14	0.04	27.6	0.14
201	2	34	2	2500	1	35	1	1	9	4	7	60	0	0	0	3	0	0	1	16.6	0.26	0.29	0.33	1	0.76	0.14	0.03	6.6	0.02
202	2	34	2	2500	2	27	2	2	9	4	7	60	0	0	0	3	0	0	1	16.6	0.26	0.29	0.33	1	1.33	0.14	0.03	27.6	0.09
203	2	34	2	2500	3	7	1	4	9	4	7	60	0	0	0	3	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
204	2	34	2	2500	4	3	1	4	9	4	7	60	0	0	0	3	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0
205	2	34	2	2500	5	5	2	4	9	4	7	60	0	0	0	3	0	0	0	16.6	0.26	0.29	0	1	0	0.14	0	1	0
206	3	35	2	16500	1	60	1	1	9	4	2.5	60	0	0	120	2	0	0	1	110	0.56	0.68	0.5	1	0.5	0.14	0.19	3.46	0.09
207	3	35	2	16500	2	52	2	2	9	4	2.5	60	0	0	120	2	0	0	1	110	0.56	0.68	0.5	1	1.33	0.14	0.19	27.6	0.71
208	3	35	2	16500	3	30	1	3	9	4	2.5	60	0	0	120	2	0	0	1	110	0.56	0.68	0.5	1	0.5	0.14	0.19	3.46	0.09
209	3	35	2	16500	4	28	1	3	9	4	2.5	60	0	0	120	2	0	0	1	110	0.56	0.68	0.5	1	0.76	0.14	0.19	6.6	0.17
210	3	35	2	16500	5	25	1	3	9	4	2.5	60	0	0	120	2	0	0	1	110	0.56	0.68	0.5	1	1.09	0.14	0.19	15.1	0.39
211	3	35	2	16500	6	20	1	3	9	4	2.5	60	0	0	120	2	0	0	1	110	0.56	0.68	0.5	1	1.33	0.14	0.19	27.6	0.71
212	3	35	2	16500	7	25	2	3	9	4	2.5	60	0	0	120	2	0	0	1	110	0.56	0.68	0.5	1	1.33	0.14	0.19	27.6	0.71
213	3	35	2	16500	8	24	2	3	9	4	2.5	60	0	0	120	2	0	0	1	110	0.56	0.68	0.5	1	1.33	0.14	0.19	27.6	0.71
214	3	35	2	16500	9	23	2	3	9	4	2.5	60	0	0	120	2	0	0	1	110	0.56	0.68	0.5	1	1.33	0.14	0.19	27.6	0.71
215	3	35	2	16500	10	17	2	3	9	4	2.5	60	0	0	120	2	0	0	1	110	0.56	0.68	0.5	1	1.33	0.14	0.19	27.6	0.71
216	3	35	2	16500	11	10	1	4	9	4	2.5	60	0	0	120	2	0	0	0	110	0.56	0.68	0	1	0	0.14	0	1	0
217	3	35	2	16500	12	8	1	4	9	4	2.5	60	0	0	120	2	0	0	0	110	0.56	0.68	0	1	0	0.14	0	1	0
218	3	35	2	16500	13	2	1	4	9	4	2.5	60	0	0	120	2	0	0	0	110	0.56	0.68	0	1	0	0.14	0	1	0
219	3	35	2	16500	14	2	1	4	9	4	2.5	60	0	0	120	2	0	0	0	110	0.56	0.68	0	1	0	0.14	0	1	0
220	3	35	2	16500	15	6	2	4	9	4	2.5	60	0	0	120	2	0	0	0	110	0.56	0.68	0	1	0	0.14	0	1	0
221	3	35	2	16500	16	4	2	4	9	4	2.5	60	0	0	120	2	0	0	0	110	0.56	0.68	0	1	0	0.14	0	1	0
222	3	35	2	16500	17	2	2	4	9	4	2.5	60	0	0	120	2	0	0	0	110	0.56	0.68	0	1	0	0.14	0	1	0
223	3	35	2	16500	18	2	2	4	9	4	2.5	60	0	0	120	2	0	0	0	110	0.56	0.68	0	1	0	0.14	0	1	0
224	3	36	2	4800	1	45	1	1	9	4	3	65	1	0	130	2	0	0	1	31.9	0.56	0.68	0.5	1	0.47	0.11	0.19	3.23	0.07
225	3	36	2	4800	2	35	2	2	9	4	3	65	1	0	130	2	0	0	1	31.9	0.56	0.68	0.5	1	1.33	0.11	0.19	26.8	0.58
226	3	36	2	4800	3	23	1	3	9	4	3	65	1	0	130	2	0	0	1	31.9	0.56	0.68	0.5	1	1.33	0.11	0.19	26.8	0.58
227	3	36	2	4800	4	10	1	4	9	4	3	65	1	0	130	2	0	0	0	31.9	0.56	0.68	0	1	0	0.11	0	1	0
228	3	36	2	4800	5	5	1	4	9	4	3	65	1	0	130	2	0	0	0	31.9	0.56	0.68	0	1	0	0.11	0	1	0
229	3	36	2	4800	6	18	2	3	9	4	3	65	1	0	130	2	0	0	1	31.9	0.56	0.68	0.5	1	1.33	0.11	0.19	26.8	0.58
230	3	36	2	4800	7	7	2	4	9	4	3	65	1	0	130	2	0	0	0	31.9	0.56	0.68	0	1	0	0.11	0	1	0
231	3	36	2	4800	8	1	2	4	9	4	3	65	1	0	130	2	0	0	0	31.9	0.56	0.68	0	1	0	0.11	0	1	0
232	3	37	2	2800	1	35	1	1	9	4	0	0	0	0	140	4	0	0	1	18.6	0.56	0.68	0.25	1	0.95	1	0.09	12.3	1.16
233	3	37	2	2800	2	28	2	2	9	4	0	0	0	0	140	4	0	0	1	18.6	0.56	0.68	0.25	1	1.38	1	0.09	37.9	3.59
234	3	37	2	2800	3	20	2	3	9	4	0	0	0	0	140	4	0	0	1	18.6	0.56	0.68	0.25	1	1.38	1	0.09	37.9	3.59
235	3	37	2	2800	4	50	2	3	9	4	0	0	0	0	140	4	0	0	1	18.6	0.56	0.68	0.25	1	1.38	1	0.09	37.9	3.59
236	3	37	2	2800	5	10	1	4	9	4	0	0	0	0	140	4	0	0	0	18.6	0.56	0.68	0	1	0	1	0	1	0
237	3	37	2	2800	6	3	1	4	9	4	0	0	0	0	140	4	0	0	0	18.6	0.56	0.68	0	1	0	1	0	1	0
238	3	37	2	2800	7	8	1	4	9	4	0	0	0	0	140	4	0	0	0	18.6	0.56	0.68	0	1	0	1	0	1	0
239	3	38	4	4500	1	50	1	1	9	4	2.5	25	4	20	160	3	0	8	1	29.9	0.56	0.68	0.33	1	1.16	0.11	0.13	19.8	0.29

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
240	3	38	4	4500	2	45	2	2	9	4	2.5	25	4	20	160	3	0	8	1	29.9	0.56	0.68	0.33	1	1.36	0.11	0.13	33.4	0.48
241	3	38	4	4500	3	20	2	3	9	4	2.5	25	4	20	160	3	0	8	1	29.9	0.56	0.68	0.33	1	1.36	0.11	0.13	33.4	0.48
242	3	38	4	4500	4	19	2	3	9	4	2.5	25	4	20	160	3	0	8	1	29.9	0.56	0.68	0.33	1	1.36	0.11	0.13	33.4	0.48
243	3	38	4	4500	5	7	2	4	9	4	2.5	25	4	20	160	3	0	8	1	29.9	0.56	0.68	0.33	1	1.36	0.11	0.13	33.4	0.48
244	3	38	4	4500	6	7	2	4	9	4	2.5	25	4	20	160	3	0	8	1	29.9	0.56	0.68	0.33	1	1.36	0.11	0.13	33.4	0.48
245	3	38	4	4500	7	12	1	4	9	4	2.5	25	4	20	160	3	0	8	1	29.9	0.56	0.68	0.33	1	1.36	0.11	0.13	33.4	0.48
246	3	38	4	4500	8	10	1	4	9	4	2.5	25	4	20	160	3	0	8	1	29.9	0.56	0.68	0.33	1	1.36	0.11	0.13	33.4	0.48
247	3	38	4	4500	9	6	1	4	9	4	2.5	25	4	20	160	3	0	8	1	29.9	0.56	0.68	0.33	1	1.36	0.11	0.13	33.4	0.48
248	3	39	2	2500	1	22	1	1	9	4	5	75	0	0	120	2	0	0	1	16.6	0.56	0.68	0.5	1	1.32	0.08	0.19	24.9	0.39
249	3	39	2	2500	2	60	2	2	9	4	5	75	0	0	120	2	0	0	1	16.6	0.56	0.68	0.5	1	1.32	0.08	0.19	25.2	0.39
250	3	39	2	2500	3	20	2	3	9	4	5	75	0	0	120	2	0	0	1	16.6	0.56	0.68	0.5	1	1.32	0.08	0.19	25.2	0.39
251	3	39	2	2500	4	3	1	4	9	4	5	75	0	0	120	2	0	0	0	16.6	0.56	0.68	0	1	0	0.08	0	1	0
252	3	40	2	3000	1	35	1	1	9	4	3	30	2	0	90	1	0	0	1	20	0.56	0.68	1	1	1.09	0.37	0.38	16.5	2.3
253	3	40	2	3000	2	24	1	2	9	4	3	30	2	0	90	1	0	0	1	20	0.56	0.68	1	1	1.36	0.37	0.38	32.5	4.53
254	3	40	2	3000	3	56	2	3	9	4	3	30	2	0	90	1	0	0	1	20	0.56	0.68	1	1	1.36	0.37	0.38	32.5	4.53
255	3	40	2	3000	4	27	2	3	9	4	3	30	2	0	90	1	0	0	1	20	0.56	0.68	1	1	1.36	0.37	0.38	32.5	4.53
256	3	40	2	3000	5	21	2	3	9	4	3	30	2	0	90	1	0	0	1	20	0.56	0.68	1	1	1.36	0.37	0.38	32.5	4.53
257	3	40	2	3000	6	11	1	4	9	4	3	30	2	0	90	1	0	0	0	20	0.56	0.68	0	1	0	0.37	0	1	0
258	3	40	2	3000	7	4	1	4	9	4	3	30	2	0	90	1	0	0	0	20	0.56	0.68	0	1	0	0.37	0	1	0
259	3	41	2	1500	1	40	1	1	9	4	2.5	60	0	0	120	2	0	0	1	9.98	0.56	0.68	0.5	1	1.15	0.14	0.19	17.4	0.45
260	3	41	2	1500	2	35	2	2	9	4	2.5	60	0	0	120	2	0	0	1	9.98	0.56	0.68	0.5	1	1.33	0.14	0.19	27.6	0.71
261	3	41	2	1500	3	14	1	4	9	4	2.5	60	0	0	120	2	0	0	0	9.98	0.56	0.68	0	1	0	0.14	0	1	0
262	3	41	2	1500	4	10	1	4	9	4	2.5	60	0	0	120	2	0	0	0	9.98	0.56	0.68	0	1	0	0.14	0	1	0
263	3	41	2	1500	5	8	2	4	9	4	2.5	60	0	0	120	2	0	0	0	9.98	0.56	0.68	0	1	0	0.14	0	1	0
264	3	42	2	3500	1	26	1	1	12	4	2.5	45	1	60	120	3	0	24	1	23.3	0.56	0.68	0.33	1	1.12	0	0.13	17	0
265	3	42	2	3500	2	24	1	2	12	4	2.5	45	1	60	120	3	0	24	1	23.3	0.56	0.68	0.33	1	1.35	0	0.13	30	0
266	3	42	2	3500	3	22	2	3	12	4	2.5	45	1	60	120	3	0	24	1	23.3	0.56	0.68	0.33	1	1.35	0	0.13	30	0
267	3	42	2	3500	4	17	2	3	12	4	2.5	45	1	60	120	3	0	24	1	23.3	0.56	0.68	0.33	1	1.35	0	0.13	30	0
268	3	42	2	3500	5	5	2	4	12	4	2.5	45	1	60	120	3	0	24	0	23.3	0.56	0.68	0	1	0	0	0	1	0
269	3	42	2	3500	6	1	2	4	12	4	2.5	45	1	60	120	3	0	24	0	23.3	0.56	0.68	0	1	0	0	0	1	0
270	3	42	2	3500	7	1	1	4	12	4	2.5	45	1	60	120	3	0	24	0	23.3	0.56	0.68	0	1	0	0	0	1	0
271	3	42	2	3500	8	2	2	4	12	4	2.5	45	1	60	120	3	0	24	0	23.3	0.56	0.68	0	1	0	0	0	1	0
272	3	43	4	4000	1	40	1	1	9	4	2.5	50	0	0	60	2	0	0	1	26.6	0.56	0.68	0.5	1	0.55	0.19	0.19	3.97	0.14
273	3	43	4	4000	2	35	2	2	9	4	2.5	50	0	0	60	2	0	0	1	26.6	0.56	0.68	0.5	1	1.34	0.19	0.19	29.2	1.04
274	3	43	4	4000	3	20	1	3	9	4	2.5	50	0	0	60	2	0	0	1	26.6	0.56	0.68	0.5	1	1.21	0.19	0.19	21.1	0.75
275	3	43	4	4000	4	16	2	3	9	4	2.5	50	0	0	60	2	0	0	1	26.6	0.56	0.68	0.5	1	1.34	0.19	0.19	29.2	1.04

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
276	3	43	4	4000	5	11	1	4	9	4	2.5	50	0	0	60	2	0	0	1	26.6	0.56	0.68	0.5	1	1.34	0.19	0.19	29.2	1.04
277	3	43	4	4000	6	8	2	4	9	4	2.5	50	0	0	60	2	0	0	1	26.6	0.56	0.68	0.5	1	1.34	0.19	0.19	29.2	1.04
278	3	43	4	4000	7	6	2	4	9	4	2.5	50	0	0	60	2	0	0	1	26.6	0.56	0.68	0.5	1	1.34	0.19	0.19	29.2	1.04
279	3	43	4	4000	8	1	1	4	9	4	2.5	50	0	0	60	2	0	0	1	26.6	0.56	0.68	0.5	1	1.34	0.19	0.19	29.2	1.04
280	4	44	4	3200	1	35	1	1	9	4	4.5	15	7	5	4	3	0	1.11	1	21.3	0.41	0.45	0.33	1	1.12	0.38	0.06	18.6	0.43
281	4	44	4	3200	2	55	2	2	9	4	4.5	15	7	5	4	3	0	1.11	1	21.3	0.41	0.45	0.33	1	1.37	0.38	0.06	35.2	0.81
282	4	44	4	3200	3	30	2	3	9	4	4.5	15	7	5	4	3	0	1.11	1	21.3	0.41	0.45	0.33	1	1.37	0.38	0.06	35.2	0.81
283	4	44	4	3200	4	8	2	4	9	4	4.5	15	7	5	4	3	0	1.11	1	21.3	0.41	0.45	0.33	1	1.37	0.38	0.06	35.2	0.81
284	4	44	4	3200	5	6	2	4	9	4	4.5	15	7	5	4	3	0	1.11	1	21.3	0.41	0.45	0.33	1	1.37	0.38	0.06	35.2	0.81
285	4	44	4	3200	6	4	2	4	9	4	4.5	15	7	5	4	3	0	1.11	1	21.3	0.41	0.45	0.33	1	1.37	0.38	0.06	35.2	0.81
286	4	44	4	3200	7	2	1	4	9	4	4.5	15	7	5	4	3	0	1.11	1	21.3	0.41	0.45	0.33	1	1.37	0.38	0.06	35.2	0.81
287	4	44	4	3200	8	15	1	3	9	4	4.5	15	7	5	4	3	0	1.11	1	21.3	0.41	0.45	0.33	1	1.37	0.38	0.06	35.2	0.81
288	4	44	4	3200	9	13	1	4	9	4	4.5	15	7	5	4	3	0	1.11	1	21.3	0.41	0.45	0.33	1	1.37	0.38	0.06	35.2	0.81
289	4	44	4	3200	10	7	1	4	9	4	4.5	15	7	5	4	3	0	1.11	1	21.3	0.41	0.45	0.33	1	1.37	0.38	0.06	35.2	0.81
290	4	44	4	3200	11	4	1	4	9	4	4.5	15	7	5	4	3	0	1.11	1	21.3	0.41	0.45	0.33	1	1.37	0.38	0.06	35.2	0.81
291	4	45	2	6000	1	45	1	1	9	4	4.5	20	7	5	120	4	0	1.11	1	39.9	0.41	0.45	0.25	1	1.21	0.4	0.05	23.2	0.42
292	4	45	2	6000	2	40	2	2	9	4	4.5	20	7	5	120	4	0	1.11	1	39.9	0.41	0.45	0.25	1	1.36	0.4	0.05	34.3	0.63
293	4	45	2	6000	3	25	2	3	9	4	4.5	20	7	5	120	4	0	1.11	1	39.9	0.41	0.45	0.25	1	1.36	0.4	0.05	34.3	0.63
294	4	45	2	6000	4	25	1	3	9	4	4.5	20	7	5	120	4	0	1.11	1	39.9	0.41	0.45	0.25	1	1.21	0.4	0.05	23.2	0.42
295	4	45	2	6000	5	20	1	3	9	4	4.5	20	7	5	120	4	0	1.11	1	39.9	0.41	0.45	0.25	1	1.36	0.4	0.05	34.3	0.63
296	4	45	2	6000	6	10	1	4	9	4	4.5	20	7	5	120	4	0	1.11	0	39.9	0.41	0.45	0	1	0	0.4	0	1	0
297	4	45	2	6000	7	5	2	4	9	4	4.5	20	7	5	120	4	0	1.11	0	39.9	0.41	0.45	0	1	0	0.4	0	1	0
298	4	46	4	3000	1	72	1	1	9	4	4	25	7	5	4	1	0	1.25	1	20	0.41	0.45	1	1	1.36	0.26	0.18	33.4	1.61
299	4	46	4	3000	2	45	1	2	9	4	4	25	7	5	4	1	0	1.25	1	20	0.41	0.45	1	1	1.36	0.26	0.18	33.4	1.61
300	4	46	4	3000	3	33	2	3	9	4	4	25	7	5	4	1	0	1.25	1	20	0.41	0.45	1	1	1.36	0.26	0.18	33.4	1.61
301	4	46	4	3000	4	19	1	3	9	4	4	25	7	5	4	1	0	1.25	1	20	0.41	0.45	1	1	1.36	0.26	0.18	33.4	1.61
302	4	46	4	3000	5	13	2	4	9	4	4	25	7	5	4	1	0	1.25	1	20	0.41	0.45	1	1	1.36	0.26	0.18	33.4	1.61
303	4	46	4	3000	6	10	2	4	9	4	4	25	7	5	4	1	0	1.25	1	20	0.41	0.45	1	1	1.36	0.26	0.18	33.4	1.61
304	4	47	4	6000	1	45	1	1	9	4	0	0	0	0	0	1	0	0	1	39.9	0.41	0.45	1	1	1.09	1	0.18	17.9	3.28
305	4	47	4	6000	2	40	2	2	9	4	0	0	0	0	0	1	0	0	1	39.9	0.41	0.45	1	1	1.38	1	0.18	37.9	6.95
306	4	47	4	6000	3	19	2	3	9	4	0	0	0	0	0	1	0	0	1	39.9	0.41	0.45	1	1	1.38	1	0.18	37.9	6.95
307	4	47	4	6000	4	17	2	3	9	4	0	0	0	0	0	1	0	0	1	39.9	0.41	0.45	1	1	1.38	1	0.18	37.9	6.95
308	4	47	4	6000	5	13	1	4	9	4	0	0	0	0	0	1	0	0	1	39.9	0.41	0.45	1	1	1.38	1	0.18	37.9	6.95
309	4	47	4	6000	6	10	2	4	9	4	0	0	0	0	0	1	0	0	1	39.9	0.41	0.45	1	1	1.38	1	0.18	37.9	6.95
310	4	47	4	6000	7	8	2	4	9	4	0	0	0	0	0	1	0	0	1	39.9	0.41	0.45	1	1	1.38	1	0.18	37.9	6.95
311	4	47	4	6000	8	33	1	3	9	4	0	0	0	0	0	1	0	0	1	39.9	0.41	0.45	1	1	1.15	1	0.18	20.8	3.81

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
312	4	47	4	6000	9	19	2	3	9	4	0	0	0	0	0	1	0	0	1	39.9	0.41	0.45	1	1	1.38	1	0.18	37.9	6.95
313	4	48	2	2000	1	35	1	1	9	4	4.5	15	7	10	120	1	0	2.22	1	13.3	0.41	0.45	1	1	0.7	0.13	0.18	6.21	0.15
314	4	48	2	2000	2	32	2	2	9	4	4.5	15	7	10	120	1	0	2.22	1	13.3	0.41	0.45	1	1	1.37	0.13	0.18	35.2	0.87
315	4	48	2	2000	3	35	2	3	9	4	4.5	15	7	10	120	1	0	2.22	1	13.3	0.41	0.45	1	1	1.37	0.13	0.18	35.2	0.87
316	4	48	2	2000	4	8	1	4	9	4	4.5	15	7	10	120	1	0	2.22	0	13.3	0.41	0.45	0	1	0	0.13	0	1	0
317	4	48	2	2000	5	7	1	4	9	4	4.5	15	7	10	120	1	0	2.22	0	13.3	0.41	0.45	0	1	0	0.13	0	1	0
318	4	48	2	2000	6	6	1	4	9	4	4.5	15	7	10	120	1	0	2.22	0	13.3	0.41	0.45	0	1	0	0.13	0	1	0
319	4	48	2	2000	7	5	1	4	9	4	4.5	15	7	10	120	1	0	2.22	0	13.3	0.41	0.45	0	1	0	0.13	0	1	0
320	4	48	2	2000	8	4	1	4	9	4	4.5	15	7	10	120	1	0	2.22	0	13.3	0.41	0.45	0	1	0	0.13	0	1	0
321	4	48	2	2000	9	2	1	4	9	4	4.5	15	7	10	120	1	0	2.22	0	13.3	0.41	0.45	0	1	0	0.13	0	1	0
322	4	48	2	2000	10	2	1	4	9	4	4.5	15	7	10	120	1	0	2.22	0	13.3	0.41	0.45	0	1	0	0.13	0	1	0
323	4	48	2	2000	11	11	2	4	9	4	4.5	15	7	10	120	1	0	2.22	0	13.3	0.41	0.45	0	1	0	0.13	0	1	0
324	4	48	2	2000	12	9	2	4	9	4	4.5	15	7	10	120	1	0	2.22	0	13.3	0.41	0.45	0	1	0	0.13	0	1	0
325	4	48	2	2000	13	7	2	4	9	4	4.5	15	7	10	120	1	0	2.22	0	13.3	0.41	0.45	0	1	0	0.13	0	1	0
326	4	48	2	2000	14	5	2	4	9	4	4.5	15	7	10	120	1	0	2.22	0	13.3	0.41	0.45	0	1	0	0.13	0	1	0
327	4	49	3	2000	1	45	1	1	9	4	4	15	6	100	0	3	0	25	1	13.3	0.41	0.45	0.33	1	0.7	0	0.06	6.21	0
328	4	49	3	2000	2	40	2	2	9	4	4	15	6	100	0	3	0	25	1	13.3	0.41	0.45	0.33	1	1.37	0	0.06	35.2	0
329	4	49	3	2000	3	65	2	3	9	4	4	15	6	100	0	3	0	25	0	13.3	0.41	0.45	0	1	0	0	0	1	0
330	4	49	3	2000	4	7	1	4	9	4	4	15	6	100	0	3	0	25	1	13.3	0.41	0.45	0.33	1	1.37	0	0.06	35.2	0
331	4	50	1	2000	1	70	1	1	12	4	0	0	7	5	180	4	0	0	1	13.3	0.41	0.45	0.25	1	1.24	1	0.05	26.4	1.21
332	4	50	1	2000	2	60	2	2	12	4	0	0	7	5	180	4	0	0	1	13.3	0.41	0.45	0.25	1	1.38	1	0.05	37.9	1.74
333	4	51	4	4000	1	45	1	1	9	4	4.5	20	7	5	180	5	0	1.11	1	26.6	0.41	0.45	0.2	1	1.21	0.35	0.04	23.2	0.3
334	4	51	4	4000	2	40	2	2	9	4	4.5	20	7	5	180	5	0	1.11	1	26.6	0.41	0.45	0.2	1	1.36	0.35	0.04	34.3	0.44
335	4	51	4	4000	3	22	1	3	9	4	4.5	20	7	5	180	5	0	1.11	1	26.6	0.41	0.45	0.2	1	1.21	0.35	0.04	23.2	0.3
336	4	51	4	4000	4	17	1	3	9	4	4.5	20	7	5	180	5	0	1.11	1	26.6	0.41	0.45	0.2	1	1.36	0.35	0.04	34.3	0.44
337	4	51	4	4000	5	5	1	4	9	4	4.5	20	7	5	180	5	0	1.11	1	26.6	0.41	0.45	0.2	1	1.36	0.35	0.04	34.3	0.44
338	4	52	3	5000	1	43	1	1	9	0	0	4	7	5	0	3	0	0	1	33.3	0.41	0.45	0.33	1	0.94	1	0.06	11.8	0.72
339	4	52	3	5000	2	21	1	2	9	0	0	4	7	5	0	3	0	0	1	33.3	0.41	0.45	0.33	1	1.14	1	0.06	20.2	1.23
340	4	52	3	5000	3	40	2	3	9	0	0	4	7	5	0	3	0	0	0	33.3	0.41	0.45	0	1	0	1	0	1	0
341	4	52	3	5000	4	17	2	3	9	0	0	4	7	5	0	3	0	0	0	33.3	0.41	0.45	0	1	0	1	0	1	0
342	4	52	3	5000	5	15	2	3	9	0	0	4	7	5	0	3	0	0	0	33.3	0.41	0.45	0	1	0	1	0	1	0
343	4	52	3	5000	6	14	2	4	9	0	0	4	7	5	0	3	0	0	1	33.3	0.41	0.45	0.33	1	1.38	1	0.06	37.2	2.27
344	4	53	3	3000	1	53	1	1	0	0	0	0	0	0	0	0	0	0	1	20	0.41	0.45	1	1	1.09	1	0.18	17.9	3.28
345	4	53	3	3000	2	40	2	2	0	0	0	0	0	0	0	0	0	0	1	20	0.41	0.45	1	1	1.38	1	0.18	37.9	6.95
346	4	53	3	3000	3	22	1	3	0	0	0	0	0	0	0	0	0	0	0	20	0.41	0.45	1	1	0	1	0.18	1	0.18
347	4	53	3	3000	4	21	1	3	0	0	0	0	0	0	0	0	0	0	0	20	0.41	0.45	1	1	0	1	0.18	1	0.18

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
348	4	53	3	3000	5	16	2	3	0	0	0	0	0	0	0	0	0	0	0	20	0.41	0.45	1	1	0	1	0.18	1	0.18
349	4	54	3	20000	1	60	1	1	9	4	4.5	15	4	20	120	2	0	4.44	1	133	0.41	0.45	0.5	1	1.35	0.45	0.09	33.3	1.37
350	4	54	3	20000	2	42	2	2	9	4	4.5	15	4	20	120	2	0	4.44	1	133	0.41	0.45	0.5	1	1.37	0.45	0.09	35.2	1.45
351	4	54	3	20000	3	25	1	3	9	4	4.5	15	4	20	120	2	0	4.44	0	133	0.41	0.45	0	1	0	0.45	0	1	0
352	4	54	3	20000	4	19	2	3	9	4	4.5	15	4	20	120	2	0	4.44	0	133	0.41	0.45	0	1	0	0.45	0	1	0
353	4	54	3	20000	5	17	2	3	9	4	4.5	15	4	20	120	2	0	4.44	0	133	0.41	0.45	0	1	0	0.45	0	1	0
354	4	55	2	8000	1	50	1	1	9	4	4.5	25	7	10	180	2	0	2.22	1	53.2	0.41	0.45	0.5	1	0.88	0.3	0.09	9.62	0.26
355	4	55	2	8000	2	47	2	2	9	4	4.5	25	7	10	180	2	0	2.22	1	53.2	0.41	0.45	0.5	1	1.36	0.3	0.09	33.4	0.91
356	4	55	2	8000	3	30	1	3	9	4	4.5	25	7	10	180	2	0	2.22	1	53.2	0.41	0.45	0.5	1	0.66	0.3	0.09	5.49	0.15
357	4	55	2	8000	4	25	1	3	9	4	4.5	25	7	10	180	2	0	2.22	1	53.2	0.41	0.45	0.5	1	1.04	0.3	0.09	14.6	0.4
358	4	55	2	8000	5	23	2	3	9	4	4.5	25	7	10	180	2	0	2.22	1	53.2	0.41	0.45	0.5	1	1.36	0.3	0.09	33.4	0.91
359	4	55	2	8000	6	19	2	3	9	4	4.5	25	7	10	180	2	0	2.22	1	53.2	0.41	0.45	0.5	1	1.36	0.3	0.09	33.4	0.91
360	4	55	2	8000	7	3	1	4	9	4	4.5	25	7	10	180	2	0	2.22	0	53.2	0.41	0.45	0	1	0	0.3	0	1	0
361	4	55	2	8000	8	1	1	4	9	4	4.5	25	7	10	180	2	0	2.22	0	53.2	0.41	0.45	0	1	0	0.3	0	1	0
362	4	56	4	3000	1	30	1	1	9	4	4.5	10	7	10	160	3	0	2.22	1	20	0.41	0.45	0.33	1	0.72	0.26	0.06	6.59	0.11
363	4	56	4	3000	2	28	2	2	9	4	4.5	10	7	10	160	3	0	2.22	1	20	0.41	0.45	0.33	1	1.37	0.26	0.06	36.1	0.58
364	4	56	4	3000	3	25	2	3	9	4	4.5	10	7	10	160	3	0	2.22	1	20	0.41	0.45	0.33	1	1.37	0.26	0.06	36.1	0.58
365	4	56	4	3000	4	17	1	3	9	4	4.5	10	7	10	160	3	0	2.22	1	20	0.41	0.45	0.33	1	1.37	0.26	0.06	36.1	0.58
366	4	56	4	3000	5	2	2	4	9	4	4.5	10	7	10	160	3	0	2.22	1	20	0.41	0.45	0.33	1	1.37	0.26	0.06	36.1	0.58
367	4	57	3	3000	1	25	1	1	9	4	4.5	20	7	10	180	4	0	2.22	1	20	0.41	0.45	0.25	1	1.21	0.19	0.05	23.2	0.2
368	4	57	3	3000	2	21	2	2	9	4	4.5	20	7	10	180	4	0	2.22	1	20	0.41	0.45	0.25	1	1.36	0.19	0.05	34.3	0.3
369	4	57	3	3000	3	23	1	3	9	4	4.5	20	7	10	180	4	0	2.22	0	20	0.41	0.45	0	1	0	0.19	0	1	0
370	4	57	3	3000	4	5	1	4	9	4	4.5	20	7	10	180	4	0	2.22	1	20	0.41	0.45	0.25	1	1.36	0.19	0.05	34.3	0.3
371	4	57	3	3000	5	3	1	4	9	4	4.5	20	7	10	180	4	0	2.22	1	20	0.41	0.45	0.25	1	1.36	0.19	0.05	34.3	0.3
372	4	58	2	3500	1	65	1	1	9	4	4.5	15	7	5	120	5	0	1.11	1	23.3	0.41	0.45	0.2	1	1.37	0.39	0.04	35.2	0.51
373	4	58	2	3500	2	50	2	2	9	4	4.5	15	7	5	120	5	0	1.11	1	23.3	0.41	0.45	0.2	1	1.37	0.39	0.04	35.2	0.51
374	4	58	2	3500	3	30	1	3	9	4	4.5	15	7	5	120	5	0	1.11	1	23.3	0.41	0.45	0.2	1	1.22	0.39	0.04	24	0.35
375	4	58	2	3500	4	27	1	3	9	4	4.5	15	7	5	120	5	0	1.11	1	23.3	0.41	0.45	0.2	1	1.37	0.39	0.04	35.2	0.51
376	4	58	2	3500	5	12	1	4	9	4	4.5	15	7	5	120	5	0	1.11	0	23.3	0.41	0.45	0	1	0	0.39	0	1	0
377	4	58	2	3500	6	25	2	3	9	4	4.5	15	7	5	120	5	0	1.11	1	23.3	0.41	0.45	0.2	1	1.37	0.39	0.04	35.2	0.51
378	4	58	2	3500	7	21	2	3	9	4	4.5	15	7	5	120	5	0	1.11	1	23.3	0.41	0.45	0.2	1	1.37	0.39	0.04	35.2	0.51
379	4	59	2	2500	1	55	1	1	9	4	4.5	10	7	5	120	6	0	1.11	1	16.6	0.41	0.45	0.17	1	0.92	0.39	0.03	11.2	0.13
380	4	59	2	2500	2	54	2	2	9	4	4.5	10	7	5	120	6	0	1.11	1	16.6	0.41	0.45	0.17	1	1.37	0.39	0.03	36.1	0.43
381	4	59	2	2500	3	40	2	3	9	4	4.5	10	7	5	120	6	0	1.11	1	16.6	0.41	0.45	0.17	1	1.37	0.39	0.03	36.1	0.43
382	4	59	2	2500	4	35	1	3	9	4	4.5	10	7	5	120	6	0	1.11	1	16.6	0.41	0.45	0.17	1	1.37	0.39	0.03	36.1	0.43
383	4	59	2	2500	5	30	1	3	9	4	4.5	10	7	5	120	6	0	1.11	1	16.6	0.41	0.45	0.17	1	1.37	0.39	0.03	36.1	0.43

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
384	4	59	2	2500	6	30	2	3	9	4	4.5	10	7	5	120	6	0	1.11	1	16.6	0.41	0.45	0.17	1	1.37	0.39	0.03	36.1	0.43
385	4	59	2	2500	7	20	2	3	9	4	4.5	10	7	5	120	6	0	1.11	1	16.6	0.41	0.45	0.17	1	1.37	0.39	0.03	36.1	0.43
386	4	59	2	2500	8	5	1	4	9	4	4.5	10	7	5	120	6	0	1.11	0	16.6	0.41	0.45	0	1	0	0.39	0	1	0
387	4	59	2	2500	9	3	1	4	9	4	4.5	10	7	5	120	6	0	1.11	0	16.6	0.41	0.45	0	1	0	0.39	0	1	0
388	4	59	2	2500	10	1	1	4	9	4	4.5	10	7	5	120	6	0	1.11	0	16.6	0.41	0.45	0	1	0	0.39	0	1	0
389	4	60	2	4200	1	23	1	1	12	4	4.5	10	4	10	180	5	0	2.22	1	27.9	0.41	0.45	0.2	1	1.37	0.35	0.04	36.1	0.46
390	4	60	2	4200	2	21	2	2	12	4	4.5	10	4	10	180	5	0	2.22	1	27.9	0.41	0.45	0.2	1	1.37	0.35	0.04	36.1	0.46
391	4	60	2	4200	3	1	2	4	12	4	4.5	10	4	10	180	5	0	2.22	0	27.9	0.41	0.45	0	1	0	0.35	0	1	0
392	4	61	1	3500	1	25	1	1	9	4	5	20	4	10	120	1	0	2	1	23.3	0.41	0.45	1	1	0.68	0.22	0.18	5.84	0.23
393	4	61	1	3500	2	40	2	2	9	4	5	20	4	10	120	1	0	2	1	23.3	0.41	0.45	1	1	1.36	0.22	0.18	34.3	1.37
394	4	62	1	4000	1	35	1	1	9	4	4.5	10	7	5	120	4	0	1.11	1	26.6	0.41	0.45	0.25	1	1.07	0.49	0.05	16.5	0.37
395	4	62	1	4000	2	21	2	2	9	4	4.5	10	7	5	120	4	0	1.11	1	26.6	0.41	0.45	0.25	1	1.37	0.49	0.05	36.1	0.81
											ACTIVITY=			LEISURE			5	<<CODE		start col(for hh data)=						75			
1	1	1	4	22000	1	60	1	1	9	4	0	0	0	0	7	5	0	0	1	36.3	0.65	0.42	0.2	0.7	1.2	1	0.05	15.4	0.84
2	1	1	4	22000	2	35	2	2	9	4	0	0	0	0	7	5	0	0	1	36.3	0.65	0.42	0.2	0.7	1.38	1	0.05	23.2	1.27
3	1	1	4	22000	3	25	1	3	9	4	0	0	0	0	7	5	0	0	1	36.3	0.65	0.42	0.2	0.7	1.2	1	0.05	15.4	0.84
4	1	1	4	22000	4	20	2	3	9	4	0	0	0	0	7	5	0	0	1	36.3	0.65	0.42	0.2	0.7	1.28	1	0.05	18.4	1.01
5	1	1	4	22000	5	22	1	3	9	4	0	0	0	0	7	5	0	0	1	36.3	0.65	0.42	0.2	0.7	1.2	1	0.05	15.4	0.84
6	1	1	4	22000	6	16	2	3	9	4	0	0	0	0	7	5	0	0	1	36.3	0.65	0.42	0.2	0.7	1.28	1	0.05	18.4	1.01
7	1	1	4	22000	7	6	1	4	9	4	0	0	0	0	7	5	0	0	1	36.3	0.65	0.42	0.2	0.7	1.38	1	0.05	23.2	1.27
8	1	1	4	22000	8	2	1	4	9	4	0	0	0	0	7	5	0	0	1	36.3	0.65	0.42	0.2	0.7	1.38	1	0.05	23.2	1.27
9	1	2	4	2000	1	43	1	1	9	4	0	0	0	0	0	2	0	0	1	3.3	0.65	0.42	0.5	0	1.38	1	0.14	0	0
10	1	2	4	2000	2	40	2	2	9	4	0	0	0	0	0	2	0	0	1	3.3	0.65	0.42	0.5	0	1.38	1	0.14	0	0
11	1	2	4	2000	3	20	1	3	9	4	0	0	0	0	0	2	0	0	1	3.3	0.65	0.42	0.5	0	0.76	1	0.14	0	0
12	1	2	4	2000	4	12	2	4	9	4	0	0	0	0	0	2	0	0	1	3.3	0.65	0.42	0.5	0	1.38	1	0.14	0	0
13	1	2	4	2000	5	10	1	4	9	4	0	0	0	0	0	2	0	0	1	3.3	0.65	0.42	0.5	0	1.38	1	0.14	0	0
14	1	2	4	2000	6	8	1	4	9	4	0	0	0	0	0	2	0	0	1	3.3	0.65	0.42	0.5	0	1.38	1	0.14	0	0
15	1	2	4	2000	7	7	2	4	9	4	0	0	0	0	0	2	0	0	1	3.3	0.65	0.42	0.5	0	1.38	1	0.14	0	0
16	1	2	4	2000	8	5	1	4	9	4	0	0	0	0	0	2	0	0	1	3.3	0.65	0.42	0.5	0	1.38	1	0.14	0	0
17	1	2	4	2000	9	2	1	4	9	4	0	0	0	0	0	2	0	0	1	3.3	0.65	0.42	0.5	0	1.38	1	0.14	0	0
18	1	3	4	3500	1	50	1	1	9	0	0	0	0	0	3	4	0	0	1	5.78	0.65	0.42	0.25	0.2	1.03	1	0.07	2.88	0.2
19	1	3	4	3500	2	45	2	2	9	0	0	0	0	0	3	4	0	0	1	5.78	0.65	0.42	0.25	0.2	1.38	1	0.07	4.13	0.28
20	1	3	4	3500	3	25	1	3	9	0	0	0	0	0	3	4	0	0	1	5.78	0.65	0.42	0.25	0.2	1.03	1	0.07	2.88	0.2
21	1	3	4	3500	4	18	1	3	9	0	0	0	0	0	3	4	0	0	1	5.78	0.65	0.42	0.25	0.2	1.38	1	0.07	4.13	0.28
22	1	3	4	3500	5	10	2	4	9	0	0	0	0	0	3	4	0	0	1	5.78	0.65	0.42	0.25	0.2	1.38	1	0.07	4.13	0.28
23	1	3	4	3500	6	7	2	4	9	0	0	0	0	0	3	4	0	0	1	5.78	0.65	0.42	0.25	0.2	1.38	1	0.07	4.13	0.28

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
24	1	3	4	3500	7	3	1	4	9	0	0	0	0	0	3	4	0	0	1	5.78	0.65	0.42	0.25	0.2	1.38	1	0.07	4.13	0.28
25	1	4	2	2000	1	35	1	1	9	4	0	0	0	0	4	3	0	0	1	3.3	0.65	0.42	0.33	0.27	1.09	1	0.09	4.22	0.38
26	1	4	2	2000	2	27	2	2	9	4	0	0	0	0	4	3	0	0	1	3.3	0.65	0.42	0.33	0.27	1.38	1	0.09	6.14	0.56
27	1	4	2	2000	3	5	1	4	9	4	0	0	0	0	4	3	0	0	0	3.3	0.65	0.42	0	0.27	0	1	0	1	0
28	1	4	2	2000	4	3	1	4	9	4	0	0	0	0	4	3	0	0	0	3.3	0.65	0.42	0	0.27	0	1	0	1	0
29	1	4	2	2000	5	1	2	4	9	4	0	0	0	0	4	3	0	0	0	3.3	0.65	0.42	0	0.27	0	1	0	1	0
30	1	5	2	3000	1	40	1	1	123	4	0	0	0	0	4	3	0	0	1	4.95	0.65	0.42	0.33	0.2	1.24	1	0.09	3.59	0.33
31	1	5	2	3000	2	30	2	2	123	4	0	0	0	0	4	3	0	0	1	4.95	0.65	0.42	0.33	0.2	1.38	1	0.09	4.13	0.38
32	1	5	2	3000	3	5	2	4	123	4	0	0	0	0	4	3	0	0	0	4.95	0.65	0.42	0	0.2	0	1	0	1	0
33	1	6	1	8000	1	28	1	1	9	4	4	4	5	0	4	4	0	0	1	13.2	0.65	0.42	0.25	0.07	1.19	0.88	0.07	0.91	0.05
34	1	6	1	8000	2	60	2	2	9	4	4	4	5	0	4	4	0	0	1	13.2	0.65	0.42	0.25	0.07	1.38	0.88	0.07	0.9	0.05
35	1	6	1	8000	3	26	1	3	9	4	4	4	5	0	4	4	0	0	0	13.2	0.65	0.42	0	0.07	0	0.88	0	1	0
36	1	6	1	8000	4	23	1	3	9	4	4	4	5	0	4	4	0	0	0	13.2	0.65	0.42	0	0.07	0	0.88	0	1	0
37	1	7	2	2000	1	30	1	1	9	4	4	4	7	0	3	5	0	0	1	3.3	0.65	0.42	0.2	0.75	0.94	0.88	0.05	9.04	0.43
38	1	7	2	2000	2	25	2	2	9	4	4	4	7	0	3	5	0	0	1	3.3	0.65	0.42	0.2	0.75	1.38	0.88	0.05	25	1.2
39	1	7	2	2000	3	3	1	4	9	4	4	4	7	0	3	5	0	0	0	3.3	0.65	0.42	0	0.75	0	0.88	0	1	0
40	1	7	2	2000	4	1	1	4	9	4	4	4	7	0	3	5	0	0	0	3.3	0.65	0.42	0	0.75	0	0.88	0	1	0
41	1	8	2	5000	1	40	1	1	4	4	4	4	7	0	4	3	0	0	1	8.25	0.65	0.42	0.33	0.27	1.14	0.88	0.09	4.46	0.36
42	1	8	2	5000	2	35	2	2	4	4	4	4	7	0	4	3	0	0	1	8.25	0.65	0.42	0.33	0.27	1.38	0.88	0.09	6.04	0.48
43	1	8	2	5000	3	80	2	3	4	4	4	4	7	0	4	3	0	0	1	8.25	0.65	0.42	0.33	0.27	1.38	0.88	0.09	6.04	0.48
44	1	8	2	5000	4	15	2	3	4	4	4	4	7	0	4	3	0	0	1	8.25	0.65	0.42	0.33	0.27	1.38	0.88	0.09	6.04	0.48
45	1	8	2	5000	5	13	1	4	4	4	4	4	7	0	4	3	0	0	0	8.25	0.65	0.42	0	0.27	0	0.88	0	1	0
46	1	9	4	7000	1	40	1	1	234	4	4	4	7	5	4	2	0	1.25	1	11.6	0.65	0.42	0.5	0.13	1.14	0.37	0.14	2.02	0.1
47	1	9	4	7000	2	35	2	2	234	4	4	4	7	5	4	2	0	1.25	1	11.6	0.65	0.42	0.5	0.13	1.38	0.37	0.14	2.33	0.12
48	1	9	4	7000	3	18	1	3	234	4	4	4	7	5	4	2	0	1.25	1	11.6	0.65	0.42	0.5	0.13	1.38	0.37	0.14	2.33	0.12
49	1	9	4	7000	4	8	1	4	234	4	4	4	7	5	4	2	0	1.25	1	11.6	0.65	0.42	0.5	0.13	1.38	0.37	0.14	2.33	0.12
50	1	9	4	7000	5	5	2	4	234	4	4	4	7	5	4	2	0	1.25	1	11.6	0.65	0.42	0.5	0.13	1.38	0.37	0.14	2.33	0.12
51	1	10	4	1500	1	45	1	1	9	4	0	0	7	0	4	4	0	0	1	2.48	0.65	0.42	0.25	0.27	0.95	1	0.07	3.5	0.24
52	1	10	4	1500	2	32	2	2	9	4	0	0	7	0	4	4	0	0	1	2.48	0.65	0.42	0.25	0.27	1.38	1	0.07	6.14	0.42
53	1	10	4	1500	3	21	1	3	9	4	0	0	7	0	4	4	0	0	1	2.48	0.65	0.42	0.25	0.27	1.38	1	0.07	6.14	0.42
54	1	10	4	1500	4	18	1	3	9	4	0	0	7	0	4	4	0	0	1	2.48	0.65	0.42	0.25	0.27	1.38	1	0.07	6.14	0.42
55	1	10	4	1500	5	15	2	3	9	4	0	0	7	0	4	4	0	0	1	2.48	0.65	0.42	0.25	0.27	1.38	1	0.07	6.14	0.42
56	1	10	4	1500	6	10	2	4	9	4	0	0	7	0	4	4	0	0	1	2.48	0.65	0.42	0.25	0.27	1.38	1	0.07	6.14	0.42
57	1	10	4	1500	7	6	1	4	9	4	0	0	7	0	4	4	0	0	1	2.48	0.65	0.42	0.25	0.27	1.38	1	0.07	6.14	0.42
58	1	11	4	9500	1	75	1	1	9	4	4	4	45	0	3d	3	0	0	1	15.7	0.65	0.42	0.33	1	1.38	0.88	0.09	37.2	2.96
59	1	11	4	9500	2	43	1	2	9	4	4	4	45	0	3d	3	0	0	1	15.7	0.65	0.42	0.33	1	1.14	0.88	0.09	20.2	1.61

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
60	1	11	4	9500	3	36	2	3	9	4	4	4	45	0	3d	3	0	0	1	15.7	0.65	0.42	0.33	1	1.38	0.88	0.09	37.2	2.96
61	1	11	4	9500	4	37	1	3	9	4	4	4	45	0	3d	3	0	0	1	15.7	0.65	0.42	0.33	1	1.19	0.88	0.09	23	1.83
62	1	11	4	9500	5	26	2	3	9	4	4	4	45	0	3d	3	0	0	1	15.7	0.65	0.42	0.33	1	1.38	0.88	0.09	37.2	2.96
63	1	11	4	9500	6	18	1	3	9	4	4	4	45	0	3d	3	0	0	1	15.7	0.65	0.42	0.33	1	1.38	0.88	0.09	37.2	2.96
64	1	11	4	9500	7	7	1	4	9	4	4	4	45	0	3d	3	0	0	1	15.7	0.65	0.42	0.33	1	1.38	0.88	0.09	37.2	2.96
65	1	11	4	9500	8	10	1	4	9	4	4	4	45	0	3d	3	0	0	1	15.7	0.65	0.42	0.33	1	1.38	0.88	0.09	37.2	2.96
66	1	11	4	9500	9	16	1	3	9	4	4	4	45	0	3d	3	0	0	1	15.7	0.65	0.42	0.33	1	1.38	0.88	0.09	37.2	2.96
67	1	11	4	9500	10	6	1	4	9	4	4	4	45	0	3d	3	0	0	1	15.7	0.65	0.42	0.33	1	1.38	0.88	0.09	37.2	2.96
68	2	12	4	1500	1	30	1	1	9	4	0	0	0	0	5	4	0	0	1	2.48	0.86	0.8	0.25	0.08	1.09	1	0.17	1.18	0.2
69	2	12	4	1500	2	45	2	2	9	4	0	0	0	0	5	4	0	0	1	2.48	0.86	0.8	0.25	0.08	1.38	1	0.17	1.24	0.21
70	2	12	4	1500	3	25	2	3	9	4	0	0	0	0	5	4	0	0	1	2.48	0.86	0.8	0.25	0.08	1.38	1	0.17	1.24	0.21
71	2	12	4	1500	4	22	2	3	9	4	0	0	0	0	5	4	0	0	1	2.48	0.86	0.8	0.25	0.08	1.38	1	0.17	1.24	0.21
72	2	12	4	1500	5	15	1	3	9	4	0	0	0	0	5	4	0	0	1	2.48	0.86	0.8	0.25	0.08	1.38	1	0.17	1.24	0.21
73	2	12	4	1500	6	8	1	4	9	4	0	0	0	0	5	4	0	0	1	2.48	0.86	0.8	0.25	0.08	1.38	1	0.17	1.24	0.21
74	2	12	4	1500	7	1	2	4	9	4	0	0	0	0	5	4	0	0	1	2.48	0.86	0.8	0.25	0.08	1.38	1	0.17	1.24	0.21
75	2	13	3	3500	1	40	1	1	9	4	8	40	7	16	5d	5	0	2	1	5.78	0.86	0.8	0.2	1	0.83	0	0.14	8.22	0
76	2	13	3	3500	2	35	2	2	9	4	8	40	7	16	5d	5	0	2	1	5.78	0.86	0.8	0.2	1	1.35	0	0.14	30.8	0
77	2	13	3	3500	3	16	1	3	9	4	8	40	7	16	5d	5	0	2	0	5.78	0.86	0.8	0	1	0	0	0	1	0
78	2	14	3	3000	1	25	1	1	9	4	4	0	4	4	7d	5	0	1	1	4.95	0.86	0.8	0.2	1	1.2	0.2	0.14	23.7	0.65
79	2	14	3	3000	2	50	2	2	9	4	4	0	4	4	7d	5	0	1	1	4.95	0.86	0.8	0.2	1	1.38	0.2	0.14	37.9	1.04
80	2	14	3	3000	3	16	2	3	9	4	4	0	4	4	7d	5	0	1	0	4.95	0.86	0.8	0	1	0	0.2	0	1	0
81	2	15	2	7000	1	49	1	1	9	4	4	0	7	10	180	3	0	2.5	1	11.6	0.86	0.8	0.33	1.5	0.95	0.18	0.23	18.1	0.74
82	2	15	2	7000	2	47	2	2	9	4	4	0	7	10	180	3	0	2.5	1	11.6	0.86	0.8	0.33	1.5	1.38	0.18	0.23	66.3	2.71
83	2	15	2	7000	3	25	2	3	9	4	4	0	7	10	180	3	0	2.5	1	11.6	0.86	0.8	0.33	1.5	1.38	0.18	0.23	66.3	2.71
84	2	15	2	7000	4	24	1	3	9	4	4	0	7	10	180	3	0	2.5	1	11.6	0.86	0.8	0.33	1.5	0.76	0.18	0.23	10.1	0.41
85	2	15	2	7000	5	22	1	3	9	4	4	0	7	10	180	3	0	2.5	1	11.6	0.86	0.8	0.33	1.5	0.76	0.18	0.23	10.1	0.41
86	2	15	2	7000	6	4	1	4	9	4	4	0	7	10	180	3	0	2.5	0	11.6	0.86	0.8	0	1.5	0	0.18	0	1	0
87	2	15	2	7000	7	3	1	4	9	4	4	0	7	10	180	3	0	2.5	0	11.6	0.86	0.8	0	1.5	0	0.18	0	1	0
88	2	15	2	7000	8	1	1	4	9	4	4	0	7	10	180	3	0	2.5	0	11.6	0.86	0.8	0	1.5	0	0.18	0	1	0
89	2	15	2	7000	9	3	1	4	9	4	4	0	7	10	180	3	0	2.5	0	11.6	0.86	0.8	0	1.5	0	0.18	0	1	0
90	2	15	2	7000	10	2	2	4	9	4	4	0	7	10	180	3	0	2.5	0	11.6	0.86	0.8	0	1.5	0	0.18	0	1	0
91	2	15	2	7000	11	1	1	4	9	4	4	0	7	10	180	3	0	2.5	0	11.6	0.86	0.8	0	1.5	0	0.18	0	1	0
92	2	16	3	8500	1	60	1	1	9	4	0	0	0	0	7d	5	0	0	1	14	0.86	0.8	0.2	1	1.24	1	0.14	26.4	3.66
93	2	16	3	8500	2	55	2	2	9	4	0	0	0	0	7d	5	0	0	1	14	0.86	0.8	0.2	1	1.38	1	0.14	37.9	5.25
94	2	16	3	8500	3	22	1	3	9	4	0	0	0	0	7d	5	0	0	0	14	0.86	0.8	0	1	0	1	0	1	0
95	2	16	3	8500	4	18	1	3	9	4	0	0	0	0	7d	5	0	0	0	14	0.86	0.8	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
96	2	17	4	6000	1	50	1	1	9	4	7	15	7	10	180	5	0	1.43	1	9.9	0.86	0.8	0.2	12	0.7	0.08	0.14	35.5	0.39
97	2	17	4	6000	2	45	2	2	9	4	7	15	7	10	180	5	0	1.43	1	9.9	0.86	0.8	0.2	12	1.37	0.08	0.14	1053	11.7
98	2	17	4	6000	3	30	1	3	9	4	7	15	7	10	180	5	0	1.43	1	9.9	0.86	0.8	0.2	12	0.7	0.08	0.14	35.5	0.39
99	2	17	4	6000	4	22	1	3	9	4	7	15	7	10	180	5	0	1.43	1	9.9	0.86	0.8	0.2	12	1.37	0.08	0.14	1053	11.7
100	2	17	4	6000	5	15	2	3	9	4	7	15	7	10	180	5	0	1.43	1	9.9	0.86	0.8	0.2	12	1.37	0.08	0.14	1053	11.7
101	2	17	4	6000	6	28	2	3	9	4	7	15	7	10	180	5	0	1.43	1	9.9	0.86	0.8	0.2	12	1.37	0.08	0.14	1053	11.7
102	2	17	4	6000	7	20	2	3	9	4	7	15	7	10	180	5	0	1.43	1	9.9	0.86	0.8	0.2	12	1.37	0.08	0.14	1053	11.7
103	2	17	4	6000	8	12	1	4	9	4	7	15	7	10	180	5	0	1.43	1	9.9	0.86	0.8	0.2	12	1.37	0.08	0.14	1053	11.7
104	2	17	4	6000	9	10	1	4	9	4	7	15	7	10	180	5	0	1.43	1	9.9	0.86	0.8	0.2	12	1.37	0.08	0.14	1053	11.7
105	2	17	4	6000	10	6	1	4	9	4	7	15	7	10	180	5	0	1.43	1	9.9	0.86	0.8	0.2	12	1.37	0.08	0.14	1053	11.7
106	2	18	3	4500	1	45	1	1	9	0	0	0	7	0	5	4	0	0	1	7.43	0.86	0.8	0.25	0.08	1.09	1	0.17	1.18	0.2
107	2	18	3	4500	2	38	2	2	9	0	0	0	7	0	5	4	0	0	1	7.43	0.86	0.8	0.25	0.08	1.38	1	0.17	1.24	0.21
108	2	18	3	4500	3	25	1	3	9	0	0	0	7	0	5	4	0	0	0	7.43	0.86	0.8	0	0.08	0	1	0	1	0
109	2	18	3	4500	4	15	1	3	9	0	0	0	7	0	5	4	0	0	0	7.43	0.86	0.8	0	0.08	0	1	0	1	0
110	2	18	3	4500	5	20	2	3	9	0	0	0	7	0	5	4	0	0	0	7.43	0.86	0.8	0	0.08	0	1	0	1	0
111	2	19	2	1500	1	35	1	1	9	0	0	0	7	0	4d	5	0	0	1	2.48	0.86	0.8	0.2	1	1.09	1	0.14	17.9	2.48
112	2	19	2	1500	2	20	2	2	9	0	0	0	7	0	4d	5	0	0	1	2.48	0.86	0.8	0.2	1	1.38	1	0.14	37.9	5.25
113	2	19	2	1500	3	3	2	4	9	0	0	0	7	0	4d	5	0	0	0	2.48	0.86	0.8	0	1	0	1	0	1	0
114	2	19	2	1500	4	1	2	4	9	0	0	0	7	0	4d	5	0	0	0	2.48	0.86	0.8	0	1	0	1	0	1	0
115	2	20	4	2000	1	45	1	1	9	4	0	0	0	0	3d	3	0	0	1	3.3	0.86	0.8	0.33	1	1.09	1	0.23	17.9	4.13
116	2	20	4	2000	2	42	2	2	9	4	0	0	0	0	3d	3	0	0	1	3.3	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
117	2	20	4	2000	3	28	1	3	9	4	0	0	0	0	3d	3	0	0	1	3.3	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
118	2	20	4	2000	4	22	2	3	9	4	0	0	0	0	3d	3	0	0	1	3.3	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
119	2	20	4	2000	5	16	2	3	9	4	0	0	0	0	3d	3	0	0	1	3.3	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
120	2	20	4	2000	6	3	1	4	9	4	0	0	0	0	3d	3	0	0	1	3.3	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
121	2	20	4	2000	7	1	2	4	9	4	0	0	0	0	3d	3	0	0	1	3.3	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
122	2	21	4	5500	1	60	1	1	9	4	0	30	0	0	7d	5	0	0	1	9.08	0.86	0.8	0.2	1	1.15	1	0.14	19.1	2.64
123	2	21	4	5500	2	21	1	2	9	4	0	30	0	0	7d	5	0	0	1	9.08	0.86	0.8	0.2	1	1.15	1	0.14	19.1	2.64
124	2	21	4	5500	3	16	1	3	9	4	0	30	0	0	7d	5	0	0	1	9.08	0.86	0.8	0.2	1	1.36	1	0.14	32.5	4.5
125	2	21	4	5500	4	14	2	4	9	4	0	30	0	0	7d	5	0	0	1	9.08	0.86	0.8	0.2	1	1.36	1	0.14	32.5	4.5
126	2	21	4	5500	5	12	2	4	9	4	0	30	0	0	7d	5	0	0	1	9.08	0.86	0.8	0.2	1	1.36	1	0.14	32.5	4.5
127	2	21	4	5500	6	9	2	4	9	4	0	30	0	0	7d	5	0	0	1	9.08	0.86	0.8	0.2	1	1.36	1	0.14	32.5	4.5
128	2	22	2	4200	1	35	1	1	9	4	0	0	0	0	3d	5	0	0	1	6.93	0.86	0.8	0.2	1	1.09	1	0.14	17.9	2.48
129	2	22	2	4200	2	22	2	2	9	4	0	0	0	0	3d	5	0	0	1	6.93	0.86	0.8	0.2	1	1.38	1	0.14	37.9	5.25
130	2	22	2	4200	3	10	1	4	9	4	0	0	0	0	3d	5	0	0	0	6.93	0.86	0.8	0	1	0	1	0	1	0
131	2	22	2	4200	4	8	2	4	9	4	0	0	0	0	3d	5	0	0	0	6.93	0.86	0.8	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
132	2	23	2	2500	1	30	1	1	9	4	0	0	0	0	3d	0	0	0	1	4.13	0.86	0.8	1	1	0.95	1	0.69	12.3	8.51
133	2	23	2	2500	2	27	2	2	9	4	0	0	0	0	3d	0	0	0	1	4.13	0.86	0.8	1	1	1.38	1	0.69	37.9	26.2
134	2	23	2	2500	3	10	1	4	9	4	0	0	0	0	3d	0	0	0	0	4.13	0.86	0.8	1	1	0	1	0.69	1	0.69
135	2	23	2	2500	4	8	1	4	9	4	0	0	0	0	3d	0	0	0	0	4.13	0.86	0.8	1	1	0	1	0.69	1	0.69
136	2	23	2	2500	5	6	1	4	9	4	0	0	0	0	3d	0	0	0	0	4.13	0.86	0.8	1	1	0	1	0.69	1	0.69
137	2	23	2	2500	6	5	1	4	9	4	0	0	0	0	3d	0	0	0	0	4.13	0.86	0.8	1	1	0	1	0.69	1	0.69
138	2	24	4	1500	1	45	1	1	9	4	0	0	0	0	7d	5	0	0	1	2.48	0.86	0.8	0.2	1	1.24	1	0.14	26.4	3.66
139	2	24	4	1500	2	40	2	2	9	4	0	0	0	0	7d	5	0	0	1	2.48	0.86	0.8	0.2	1	1.38	1	0.14	37.9	5.25
140	2	24	4	1500	3	21	1	3	9	4	0	0	0	0	7d	5	0	0	1	2.48	0.86	0.8	0.2	1	1.38	1	0.14	37.9	5.25
141	2	24	4	1500	4	15	1	3	9	4	0	0	0	0	7d	5	0	0	1	2.48	0.86	0.8	0.2	1	1.24	1	0.14	26.4	3.66
142	2	24	4	1500	5	18	2	3	9	4	0	0	0	0	7d	5	0	0	1	2.48	0.86	0.8	0.2	1	1.38	1	0.14	37.9	5.25
143	2	25	2	2500	1	30	1	1	9	4	0	0	0	0	0	4	0	0	1	4.13	0.86	0.8	0.25	0	0.95	1	0.17	0	0
144	2	25	2	2500	2	27	2	2	9	4	0	0	0	0	0	4	0	0	1	4.13	0.86	0.8	0.25	0	1.38	1	0.17	0	0
145	2	25	2	2500	3	10	1	4	9	4	0	0	0	0	0	4	0	0	0	4.13	0.86	0.8	0	0	0	1	0	0	0
146	2	25	2	2500	4	8	1	4	9	4	0	0	0	0	0	4	0	0	0	4.13	0.86	0.8	0	0	0	1	0	0	0
147	2	25	2	2500	5	6	1	4	9	4	0	0	0	0	0	4	0	0	0	4.13	0.86	0.8	0	0	0	1	0	0	0
148	2	25	2	2500	6	5	1	4	9	4	0	0	0	0	0	4	0	0	0	4.13	0.86	0.8	0	0	0	1	0	0	0
149	2	26	4	7600	1	65	1	1	9	4	0	0	0	0	3d	3	0	0	1	12.5	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
150	2	26	4	7600	2	58	2	2	9	4	0	0	0	0	3d	3	0	0	1	12.5	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
151	2	26	4	7600	3	33	1	3	9	4	0	0	0	0	3d	3	0	0	1	12.5	0.86	0.8	0.33	1	1.2	1	0.23	23.7	5.46
152	2	26	4	7600	4	21	1	3	9	4	0	0	0	0	3d	3	0	0	1	12.5	0.86	0.8	0.33	1	1.2	1	0.23	23.7	5.46
153	2	26	4	7600	5	20	2	3	9	4	0	0	0	0	3d	3	0	0	1	12.5	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
154	2	26	4	7600	6	18	1	3	9	4	0	0	0	0	3d	3	0	0	1	12.5	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
155	2	26	4	7600	7	17	1	3	9	4	0	0	0	0	3d	3	0	0	1	12.5	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
156	2	26	4	7600	8	13	2	4	9	4	0	0	0	0	3d	3	0	0	1	12.5	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
157	2	27	2	8000	1	50	1	1	9	4	0	0	0	0	7d	5	0	0	1	13.2	0.86	0.8	0.2	1	1.24	1	0.14	26.4	3.66
158	2	27	2	8000	2	45	2	2	9	4	0	0	0	0	7d	5	0	0	1	13.2	0.86	0.8	0.2	1	1.31	1	0.14	31.6	4.37
159	2	27	2	8000	3	25	1	3	9	4	0	0	0	0	7d	5	0	0	1	13.2	0.86	0.8	0.2	1	1.24	1	0.14	26.4	3.66
160	2	27	2	8000	4	22	2	3	9	4	0	0	0	0	7d	5	0	0	1	13.2	0.86	0.8	0.2	1	1.31	1	0.14	31.6	4.37
161	2	27	2	8000	5	10	1	4	9	4	0	0	0	0	7d	5	0	0	0	13.2	0.86	0.8	0	1	0	1	0	1	0
162	2	27	2	8000	6	8	1	4	9	4	0	0	0	0	7d	5	0	0	0	13.2	0.86	0.8	0	1	0	1	0	1	0
163	2	27	2	8000	7	2	2	4	9	4	0	0	0	0	7d	5	0	0	0	13.2	0.86	0.8	0	1	0	1	0	1	0
164	2	28	2	5000	1	33	1	1	9	4	0	0	7	0	3d	3	0	0	1	8.25	0.86	0.8	0.33	1	1.09	1	0.23	17.9	4.13
165	2	28	2	5000	2	29	2	2	9	4	0	0	7	0	3d	3	0	0	1	8.25	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
166	2	28	2	5000	3	5	1	4	9	4	0	0	7	0	3d	3	0	0	0	8.25	0.86	0.8	0	1	0	1	0	1	0
167	2	28	2	5000	4	3	2	4	9	4	0	0	7	0	3d	3	0	0	0	8.25	0.86	0.8	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
168	2	29	4	3000	1	48	1	1	9	4	0	0	0	0	3d	3	0	0	1	4.95	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
169	2	29	4	3000	2	42	2	2	9	4	0	0	0	0	3d	3	0	0	1	4.95	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
170	2	29	4	3000	3	27	1	3	9	4	0	0	0	0	3d	3	0	0	1	4.95	0.86	0.8	0.33	1	1.2	1	0.23	23.7	5.46
171	2	29	4	3000	4	22	2	3	9	4	0	0	0	0	3d	3	0	0	1	4.95	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
172	2	29	4	3000	5	18	2	3	9	4	0	0	0	0	3d	3	0	0	1	4.95	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
173	2	29	4	3000	6	6	1	4	9	4	0	0	0	0	3d	3	0	0	1	4.95	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
174	2	29	4	3000	7	5	1	4	9	4	0	0	0	0	3d	3	0	0	1	4.95	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
175	2	30	2	8000	1	45	1	1	9	4	4	4	0	0	3d	5	0	0	1	13.2	0.86	0.8	0.2	1	0.94	0.88	0.14	11.8	1.43
176	2	30	2	8000	2	40	2	2	9	4	4	4	0	0	3d	5	0	0	1	13.2	0.86	0.8	0.2	1	1.38	0.88	0.14	37.2	4.5
177	2	30	2	8000	3	23	1	3	9	4	4	4	0	0	3d	5	0	0	1	13.2	0.86	0.8	0.2	1	0.94	0.88	0.14	11.8	1.43
178	2	30	2	8000	4	21	1	3	9	4	4	4	0	0	3d	5	0	0	1	13.2	0.86	0.8	0.2	1	0.74	0.88	0.14	7.08	0.86
179	2	30	2	8000	5	12	1	4	9	4	4	4	0	0	3d	5	0	0	0	13.2	0.86	0.8	0	1	0	0.88	0	1	0
180	2	30	2	8000	6	10	1	4	9	4	4	4	0	0	3d	5	0	0	0	13.2	0.86	0.8	0	1	0	0.88	0	1	0
181	2	30	2	8000	7	8	2	4	9	4	4	4	0	0	3d	5	0	0	0	13.2	0.86	0.8	0	1	0	0.88	0	1	0
182	2	30	2	8000	8	6	2	4	9	4	4	4	0	0	3d	5	0	0	0	13.2	0.86	0.8	0	1	0	0.88	0	1	0
183	2	30	2	8000	9	23	2	3	9	4	4	4	0	0	3d	5	0	0	1	13.2	0.86	0.8	0.2	1	1.38	0.88	0.14	37.2	4.5
184	2	31	1	7500	1	40	1	1	9	4	0	0	0	0	3d	4	0	0	1	12.4	0.86	0.8	0.25	1	0.95	1	0.17	12.3	2.13
185	2	31	1	7500	2	23	1	2	9	4	0	0	0	0	3d	4	0	0	1	12.4	0.86	0.8	0.25	1	0.95	1	0.17	12.3	2.13
186	2	31	1	7500	3	22	1	3	9	4	0	0	0	0	3d	4	0	0	0	12.4	0.86	0.8	0	1	0	1	0	1	0
187	2	31	1	7500	4	38	2	3	9	4	0	0	0	0	3d	4	0	0	0	12.4	0.86	0.8	0	1	0	1	0	1	0
188	2	31	1	7500	5	20	2	3	9	4	0	0	0	0	3d	4	0	0	0	12.4	0.86	0.8	0	1	0	1	0	1	0
189	2	32	2	2500	1	28	1	1	9	0	0	0	0	0	0	5	0	0	1	4.13	0.86	0.8	0.2	0	1.09	1	0.14	0	0
190	2	32	2	2500	2	22	2	2	9	0	0	0	0	0	0	5	0	0	1	4.13	0.86	0.8	0.2	0	1.38	1	0.14	0	0
191	2	32	2	2500	3	3	1	4	9	0	0	0	0	0	0	5	0	0	0	4.13	0.86	0.8	0	0	0	1	0	0	0
192	2	32	2	2500	4	1	1	4	9	0	0	0	0	0	0	5	0	0	0	4.13	0.86	0.8	0	0	0	1	0	0	0
193	2	33	4	6800	1	55	1	1	9	4	0	0	0	0	0	4	0	0	1	11.2	0.86	0.8	0.25	0	1.38	1	0.17	0	0
194	2	33	4	6800	2	30	1	2	9	4	0	0	0	0	0	4	0	0	1	11.2	0.86	0.8	0.25	0	0.76	1	0.17	0	0
195	2	33	4	6800	3	28	1	3	9	4	0	0	0	0	0	4	0	0	1	11.2	0.86	0.8	0.25	0	0.95	1	0.17	0	0
196	2	33	4	6800	4	25	1	3	9	4	0	0	0	0	0	4	0	0	1	11.2	0.86	0.8	0.25	0	1.38	1	0.17	0	0
197	2	33	4	6800	5	18	1	3	9	4	0	0	0	0	0	4	0	0	1	11.2	0.86	0.8	0.25	0	1.38	1	0.17	0	0
198	2	33	4	6800	6	25	2	3	9	4	0	0	0	0	0	4	0	0	1	11.2	0.86	0.8	0.25	0	1.38	1	0.17	0	0
199	2	33	4	6800	7	10	2	4	9	4	0	0	0	0	0	4	0	0	1	11.2	0.86	0.8	0.25	0	1.38	1	0.17	0	0
200	2	33	4	6800	8	7	2	4	9	4	0	0	0	0	0	4	0	0	1	11.2	0.86	0.8	0.25	0	1.38	1	0.17	0	0
201	2	34	2	2500	1	35	1	1	9	4	0	0	0	0	3d	3	0	0	1	4.13	0.86	0.8	0.33	1	0.95	1	0.23	12.3	2.84
202	2	34	2	2500	2	27	2	2	9	4	0	0	0	0	3d	3	0	0	1	4.13	0.86	0.8	0.33	1	1.38	1	0.23	37.9	8.74
203	2	34	2	2500	3	7	1	4	9	4	0	0	0	0	3d	3	0	0	0	4.13	0.86	0.8	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
204	2	34	2	2500	4	3	1	4	9	4	0	0	0	0	3d	3	0	0	0	4.13	0.86	0.8	0	1	0	1	0	1	0
205	2	34	2	2500	5	5	2	4	9	4	0	0	0	0	3d	3	0	0	0	4.13	0.86	0.8	0	1	0	1	0	1	0
206	3	35	2	16500	1	60	1	1	134	4	0	0	0	0	2d	4	0	0	1	27.2	0.92	1	0.25	1	0.76	1	0.23	7.42	1.7
207	3	35	2	16500	2	52	2	2	134	4	0	0	0	0	2d	4	0	0	1	27.2	0.92	1	0.25	1	1.38	1	0.23	37.9	8.7
208	3	35	2	16500	3	30	1	3	134	4	0	0	0	0	2d	4	0	0	1	27.2	0.92	1	0.25	1	0.76	1	0.23	7.42	1.7
209	3	35	2	16500	4	28	1	3	134	4	0	0	0	0	2d	4	0	0	1	27.2	0.92	1	0.25	1	0.95	1	0.23	12.3	2.82
210	3	35	2	16500	5	25	1	3	134	4	0	0	0	0	2d	4	0	0	1	27.2	0.92	1	0.25	1	1.2	1	0.23	23.7	5.43
211	3	35	2	16500	6	20	1	3	134	4	0	0	0	0	2d	4	0	0	1	27.2	0.92	1	0.25	1	1.38	1	0.23	37.9	8.7
212	3	35	2	16500	7	25	2	3	134	4	0	0	0	0	2d	4	0	0	1	27.2	0.92	1	0.25	1	1.38	1	0.23	37.9	8.7
213	3	35	2	16500	8	24	2	3	134	4	0	0	0	0	2d	4	0	0	1	27.2	0.92	1	0.25	1	1.38	1	0.23	37.9	8.7
214	3	35	2	16500	9	23	2	3	134	4	0	0	0	0	2d	4	0	0	1	27.2	0.92	1	0.25	1	1.38	1	0.23	37.9	8.7
215	3	35	2	16500	10	17	2	3	134	4	0	0	0	0	2d	4	0	0	1	27.2	0.92	1	0.25	1	1.38	1	0.23	37.9	8.7
216	3	35	2	16500	11	10	1	4	134	4	0	0	0	0	2d	4	0	0	0	27.2	0.92	1	0	1	0	1	0	1	0
217	3	35	2	16500	12	8	1	4	134	4	0	0	0	0	2d	4	0	0	0	27.2	0.92	1	0	1	0	1	0	1	0
218	3	35	2	16500	13	2	1	4	134	4	0	0	0	0	2d	4	0	0	0	27.2	0.92	1	0	1	0	1	0	1	0
219	3	35	2	16500	14	2	1	4	134	4	0	0	0	0	2d	4	0	0	0	27.2	0.92	1	0	1	0	1	0	1	0
220	3	35	2	16500	15	6	2	4	134	4	0	0	0	0	2d	4	0	0	0	27.2	0.92	1	0	1	0	1	0	1	0
221	3	35	2	16500	16	4	2	4	134	4	0	0	0	0	2d	4	0	0	0	27.2	0.92	1	0	1	0	1	0	1	0
222	3	35	2	16500	17	2	2	4	134	4	0	0	0	0	2d	4	0	0	0	27.2	0.92	1	0	1	0	1	0	1	0
223	3	35	2	16500	18	2	2	4	134	4	0	0	0	0	2d	4	0	0	0	27.2	0.92	1	0	1	0	1	0	1	0
224	3	36	2	4800	1	45	1	1	123	4	0	0	1	0	4d	3	0	0	1	7.92	0.92	1	0.33	1	0.76	1	0.31	7.42	2.27
225	3	36	2	4800	2	35	2	2	123	4	0	0	1	0	4d	3	0	0	1	7.92	0.92	1	0.33	1	1.38	1	0.31	37.9	11.6
226	3	36	2	4800	3	23	1	3	123	4	0	0	1	0	4d	3	0	0	1	7.92	0.92	1	0.33	1	1.38	1	0.31	37.9	11.6
227	3	36	2	4800	4	10	1	4	123	4	0	0	1	0	4d	3	0	0	0	7.92	0.92	1	0	1	0	1	0	1	0
228	3	36	2	4800	5	5	1	4	123	4	0	0	1	0	4d	3	0	0	0	7.92	0.92	1	0	1	0	1	0	1	0
229	3	36	2	4800	6	18	2	3	123	4	0	0	1	0	4d	3	0	0	1	7.92	0.92	1	0.33	1	1.38	1	0.31	37.9	11.6
230	3	36	2	4800	7	7	2	4	123	4	0	0	1	0	4d	3	0	0	0	7.92	0.92	1	0	1	0	1	0	1	0
231	3	36	2	4800	8	1	2	4	123	4	0	0	1	0	4d	3	0	0	0	7.92	0.92	1	0	1	0	1	0	1	0
232	3	37	2	2800	1	35	1	1	124	4	0	0	0	0	3d	5	0	0	1	4.62	0.92	1	0.2	1	0.95	1	0.18	12.3	2.26
233	3	37	2	2800	2	28	2	2	124	4	0	0	0	0	3d	5	0	0	1	4.62	0.92	1	0.2	1	1.38	1	0.18	37.9	6.96
234	3	37	2	2800	3	20	2	3	124	4	0	0	0	0	3d	5	0	0	1	4.62	0.92	1	0.2	1	1.38	1	0.18	37.9	6.96
235	3	37	2	2800	4	50	2	3	124	4	0	0	0	0	3d	5	0	0	1	4.62	0.92	1	0.2	1	1.38	1	0.18	37.9	6.96
236	3	37	2	2800	5	10	1	4	124	4	0	0	0	0	3d	5	0	0	0	4.62	0.92	1	0	1	0	1	0	1	0
237	3	37	2	2800	6	3	1	4	124	4	0	0	0	0	3d	5	0	0	0	4.62	0.92	1	0	1	0	1	0	1	0
238	3	37	2	2800	7	8	1	4	124	4	0	0	0	0	3d	5	0	0	0	4.62	0.92	1	0	1	0	1	0	1	0
239	3	38	4	4500	1	50	1	1	12	4	0	0	4	0	7d	5	0	0	1	7.43	0.92	1	0.2	1	1.2	1	0.18	23.7	4.34

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
240	3	38	4	4500	2	45	2	2	12	4	0	0	4	0	7d	5	0	0	1	7.43	0.92	1	0.2	1	1.38	1	0.18	37.9	6.96
241	3	38	4	4500	3	20	2	3	12	4	0	0	4	0	7d	5	0	0	1	7.43	0.92	1	0.2	1	1.38	1	0.18	37.9	6.96
242	3	38	4	4500	4	19	2	3	12	4	0	0	4	0	7d	5	0	0	1	7.43	0.92	1	0.2	1	1.38	1	0.18	37.9	6.96
243	3	38	4	4500	5	7	2	4	12	4	0	0	4	0	7d	5	0	0	1	7.43	0.92	1	0.2	1	1.38	1	0.18	37.9	6.96
244	3	38	4	4500	6	7	2	4	12	4	0	0	4	0	7d	5	0	0	1	7.43	0.92	1	0.2	1	1.38	1	0.18	37.9	6.96
245	3	38	4	4500	7	12	1	4	12	4	0	0	4	0	7d	5	0	0	1	7.43	0.92	1	0.2	1	1.38	1	0.18	37.9	6.96
246	3	38	4	4500	8	10	1	4	12	4	0	0	4	0	7d	5	0	0	1	7.43	0.92	1	0.2	1	1.38	1	0.18	37.9	6.96
247	3	38	4	4500	9	6	1	4	12	4	0	0	4	0	7d	5	0	0	1	7.43	0.92	1	0.2	1	1.38	1	0.18	37.9	6.96
248	3	39	2	2500	1	22	1	1	1234	4	0	0	0	0	4d	0	0	0	1	4.13	0.92	1	1	1	1.37	1	0.92	37.6	34.5
249	3	39	2	2500	2	60	2	2	1234	4	0	0	0	0	4d	0	0	0	1	4.13	0.92	1	1	1	1.38	1	0.92	37.9	34.8
250	3	39	2	2500	3	20	2	3	1234	4	0	0	0	0	4d	0	0	0	1	4.13	0.92	1	1	1	1.38	1	0.92	37.9	34.8
251	3	39	2	2500	4	3	1	4	1234	4	0	0	0	0	4d	0	0	0	0	4.13	0.92	1	1	1	0	1	0.92	1	0.92
252	3	40	2	3000	1	35	1	1	12	4	0	0	0	0	3d	4	0	0	1	4.95	0.92	1	0.25	1	1.15	1	0.23	20.8	4.77
253	3	40	2	3000	2	24	1	2	12	4	0	0	0	0	3d	4	0	0	1	4.95	0.92	1	0.25	1	1.38	1	0.23	37.9	8.7
254	3	40	2	3000	3	56	2	3	12	4	0	0	0	0	3d	4	0	0	1	4.95	0.92	1	0.25	1	1.38	1	0.23	37.9	8.7
255	3	40	2	3000	4	27	2	3	12	4	0	0	0	0	3d	4	0	0	1	4.95	0.92	1	0.25	1	1.38	1	0.23	37.9	8.7
256	3	40	2	3000	5	21	2	3	12	4	0	0	0	0	3d	4	0	0	1	4.95	0.92	1	0.25	1	1.38	1	0.23	37.9	8.7
257	3	40	2	3000	6	11	1	4	12	4	0	0	0	0	3d	4	0	0	0	4.95	0.92	1	0	1	0	1	0	1	0
258	3	40	2	3000	7	4	1	4	12	4	0	0	0	0	3d	4	0	0	0	4.95	0.92	1	0	1	0	1	0	1	0
259	3	41	2	1500	1	40	1	1	12	4	0	4	0	0	7d	4	0	0	1	2.48	0.92	1	0.25	1	1.24	1	0.23	25.8	5.91
260	3	41	2	1500	2	35	2	2	12	4	0	4	0	0	7d	4	0	0	1	2.48	0.92	1	0.25	1	1.38	1	0.23	37.2	8.53
261	3	41	2	1500	3	14	1	4	12	4	0	4	0	0	7d	4	0	0	0	2.48	0.92	1	0	1	0	1	0	1	0
262	3	41	2	1500	4	10	1	4	12	4	0	4	0	0	7d	4	0	0	0	2.48	0.92	1	0	1	0	1	0	1	0
263	3	41	2	1500	5	8	2	4	12	4	0	4	0	0	7d	4	0	0	0	2.48	0.92	1	0	1	0	1	0	1	0
264	3	42	2	3500	1	26	1	1	12	4	4	4	0	0	7d	4	0	0	1	5.78	0.92	1	0.25	1	1.19	0.88	0.23	23	4.62
265	3	42	2	3500	2	24	1	2	12	4	4	4	0	0	7d	4	0	0	1	5.78	0.92	1	0.25	1	1.38	0.88	0.23	37.2	7.47
266	3	42	2	3500	3	22	2	3	12	4	4	4	0	0	7d	4	0	0	1	5.78	0.92	1	0.25	1	1.38	0.88	0.23	37.2	7.47
267	3	42	2	3500	4	17	2	3	12	4	4	4	0	0	7d	4	0	0	1	5.78	0.92	1	0.25	1	1.38	0.88	0.23	37.2	7.47
268	3	42	2	3500	5	5	2	4	12	4	4	4	0	0	7d	4	0	0	0	5.78	0.92	1	0	1	0	0.88	0	1	0
269	3	42	2	3500	6	1	2	4	12	4	4	4	0	0	7d	4	0	0	0	5.78	0.92	1	0	1	0	0.88	0	1	0
270	3	42	2	3500	7	1	1	4	12	4	4	4	0	0	7d	4	0	0	0	5.78	0.92	1	0	1	0	0.88	0	1	0
271	3	42	2	3500	8	2	2	4	12	4	4	4	0	0	7d	4	0	0	0	5.78	0.92	1	0	1	0	0.88	0	1	0
272	3	43	4	4000	1	40	1	1	12	4	0	0	0	0	2d	2	0	0	1	6.6	0.92	1	0.5	1	0.76	1	0.46	7.42	3.4
273	3	43	4	4000	2	35	2	2	12	4	0	0	0	0	2d	2	0	0	1	6.6	0.92	1	0.5	1	1.38	1	0.46	37.9	17.4
274	3	43	4	4000	3	20	1	3	12	4	0	0	0	0	2d	2	0	0	1	6.6	0.92	1	0.5	1	1.28	1	0.46	29.1	13.3
275	3	43	4	4000	4	16	2	3	12	4	0	0	0	0	2d	2	0	0	1	6.6	0.92	1	0.5	1	1.38	1	0.46	37.9	17.4

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA										DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
276	3	43	4	4000	5	11	1	4	12	4	0	0	0	0	2d	2	0	0	1	6.6	0.92	1	0.5	1	1.38	1	0.46	37.9	17.4
277	3	43	4	4000	6	8	2	4	12	4	0	0	0	0	2d	2	0	0	1	6.6	0.92	1	0.5	1	1.38	1	0.46	37.9	17.4
278	3	43	4	4000	7	6	2	4	12	4	0	0	0	0	2d	2	0	0	1	6.6	0.92	1	0.5	1	1.38	1	0.46	37.9	17.4
279	3	43	4	4000	8	1	1	4	12	4	0	0	0	0	2d	2	0	0	1	6.6	0.92	1	0.5	1	1.38	1	0.46	37.9	17.4
280	4	44	4	3200	1	35	1	1	9	4	0	0	0	0	3d	3	0	0	1	5.28	0.71	0.5	0.33	1	1.15	1	0.12	20.8	2.47
281	4	44	4	3200	2	55	2	2	9	4	0	0	0	0	3d	3	0	0	1	5.28	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
282	4	44	4	3200	3	30	2	3	9	4	0	0	0	0	3d	3	0	0	1	5.28	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
283	4	44	4	3200	4	8	2	4	9	4	0	0	0	0	3d	3	0	0	1	5.28	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
284	4	44	4	3200	5	6	2	4	9	4	0	0	0	0	3d	3	0	0	1	5.28	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
285	4	44	4	3200	6	4	2	4	9	4	0	0	0	0	3d	3	0	0	1	5.28	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
286	4	44	4	3200	7	2	1	4	9	4	0	0	0	0	3d	3	0	0	1	5.28	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
287	4	44	4	3200	8	15	1	3	9	4	0	0	0	0	3d	3	0	0	1	5.28	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
288	4	44	4	3200	9	13	1	4	9	4	0	0	0	0	3d	3	0	0	1	5.28	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
289	4	44	4	3200	10	7	1	4	9	4	0	0	0	0	3d	3	0	0	1	5.28	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
290	4	44	4	3200	11	4	1	4	9	4	0	0	0	0	3d	3	0	0	1	5.28	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
291	4	45	2	6000	1	45	1	1	9	4	0	0	7	0	4d	5	0	0	1	9.9	0.71	0.5	0.2	1	1.24	1	0.07	26.4	1.89
292	4	45	2	6000	2	40	2	2	9	4	0	0	7	0	4d	5	0	0	1	9.9	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
293	4	45	2	6000	3	25	2	3	9	4	0	0	7	0	4d	5	0	0	1	9.9	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
294	4	45	2	6000	4	25	1	3	9	4	0	0	7	0	4d	5	0	0	1	9.9	0.71	0.5	0.2	1	1.24	1	0.07	26.4	1.89
295	4	45	2	6000	5	20	1	3	9	4	0	0	7	0	4d	5	0	0	1	9.9	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
296	4	45	2	6000	6	10	1	4	9	4	0	0	7	0	4d	5	0	0	0	9.9	0.71	0.5	0	1	0	1	0	1	0
297	4	45	2	6000	7	5	2	4	9	4	0	0	7	0	4d	5	0	0	0	9.9	0.71	0.5	0	1	0	1	0	1	0
298	4	46	4	3000	1	72	1	1	9	4	0	0	0	0	3d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
299	4	46	4	3000	2	45	1	2	9	4	0	0	0	0	3d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.7
300	4	46	4	3000	3	33	2	3	9	4	0	0	0	0	3d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
301	4	46	4	3000	4	19	1	3	9	4	0	0	0	0	3d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
302	4	46	4	3000	5	13	2	4	9	4	0	0	0	0	3d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
303	4	46	4	3000	6	10	2	4	9	4	0	0	0	0	3d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
304	4	47	4	6000	1	45	1	1	9	4	0	0	0	0	3d	3	0	0	1	9.9	0.71	0.5	0.33	1	1.09	1	0.12	17.9	2.13
305	4	47	4	6000	2	40	2	2	9	4	0	0	0	0	3d	3	0	0	1	9.9	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
306	4	47	4	6000	3	19	2	3	9	4	0	0	0	0	3d	3	0	0	1	9.9	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
307	4	47	4	6000	4	17	2	3	9	4	0	0	0	0	3d	3	0	0	1	9.9	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
308	4	47	4	6000	5	13	1	4	9	4	0	0	0	0	3d	3	0	0	1	9.9	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
309	4	47	4	6000	6	10	2	4	9	4	0	0	0	0	3d	3	0	0	1	9.9	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
310	4	47	4	6000	7	8	2	4	9	4	0	0	0	0	3d	3	0	0	1	9.9	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
311	4	47	4	6000	8	33	1	3	9	4	0	0	0	0	3d	3	0	0	1	9.9	0.71	0.5	0.33	1	1.15	1	0.12	20.8	2.47

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
312	4	47	4	6000	9	19	2	3	9	4	0	0	0	0	3d	3	0	0	1	9.9	0.71	0.5	0.33	1	1.38	1	0.12	37.9	4.51
313	4	48	2	2000	1	35	1	1	12	4	0	0	0	0	3d	5	0	0	1	3.3	0.71	0.5	0.2	1	0.76	1	0.07	7.42	0.53
314	4	48	2	2000	2	32	2	2	12	4	0	0	0	0	3d	5	0	0	1	3.3	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
315	4	48	2	2000	3	35	2	3	12	4	0	0	0	0	3d	5	0	0	1	3.3	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
316	4	48	2	2000	4	8	1	4	12	4	0	0	0	0	3d	5	0	0	0	3.3	0.71	0.5	0	1	0	1	0	1	0
317	4	48	2	2000	5	7	1	4	12	4	0	0	0	0	3d	5	0	0	0	3.3	0.71	0.5	0	1	0	1	0	1	0
318	4	48	2	2000	6	6	1	4	12	4	0	0	0	0	3d	5	0	0	0	3.3	0.71	0.5	0	1	0	1	0	1	0
319	4	48	2	2000	7	5	1	4	12	4	0	0	0	0	3d	5	0	0	0	3.3	0.71	0.5	0	1	0	1	0	1	0
320	4	48	2	2000	8	4	1	4	12	4	0	0	0	0	3d	5	0	0	0	3.3	0.71	0.5	0	1	0	1	0	1	0
321	4	48	2	2000	9	2	1	4	12	4	0	0	0	0	3d	5	0	0	0	3.3	0.71	0.5	0	1	0	1	0	1	0
322	4	48	2	2000	10	2	1	4	12	4	0	0	0	0	3d	5	0	0	0	3.3	0.71	0.5	0	1	0	1	0	1	0
323	4	48	2	2000	11	11	2	4	12	4	0	0	0	0	3d	5	0	0	0	3.3	0.71	0.5	0	1	0	1	0	1	0
324	4	48	2	2000	12	9	2	4	12	4	0	0	0	0	3d	5	0	0	0	3.3	0.71	0.5	0	1	0	1	0	1	0
325	4	48	2	2000	13	7	2	4	12	4	0	0	0	0	3d	5	0	0	0	3.3	0.71	0.5	0	1	0	1	0	1	0
326	4	48	2	2000	14	5	2	4	12	4	0	0	0	0	3d	5	0	0	0	3.3	0.71	0.5	0	1	0	1	0	1	0
327	4	49	3	2000	1	45	1	1	9	4	0	0	0	0	3d	2	0	0	1	3.3	0.71	0.5	0.5	1	0.76	1	0.18	7.42	1.32
328	4	49	3	2000	2	40	2	2	9	4	0	0	0	0	3d	2	0	0	1	3.3	0.71	0.5	0.5	1	1.38	1	0.18	37.9	6.76
329	4	49	3	2000	3	65	2	3	9	4	0	0	0	0	3d	2	0	0	0	3.3	0.71	0.5	0	1	0	1	0	1	0
330	4	49	3	2000	4	7	1	4	9	4	0	0	0	0	3d	2	0	0	1	3.3	0.71	0.5	0.5	1	1.38	1	0.18	37.9	6.76
331	4	50	1	2000	1	70	1	1	12	4	0	0	7	0	7d	5	0	0	1	3.3	0.71	0.5	0.2	1	1.24	1	0.07	26.4	1.89
332	4	50	1	2000	2	60	2	2	12	4	0	0	7	0	7d	5	0	0	1	3.3	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
333	4	51	4	4000	1	45	1	1	9	4	0	0	0	0	7d	4	0	0	1	6.6	0.71	0.5	0.25	1	1.24	1	0.09	26.4	2.36
334	4	51	4	4000	2	40	2	2	9	4	0	0	0	0	7d	4	0	0	1	6.6	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38
335	4	51	4	4000	3	22	1	3	9	4	0	0	0	0	7d	4	0	0	1	6.6	0.71	0.5	0.25	1	1.24	1	0.09	26.4	2.36
336	4	51	4	4000	4	17	1	3	9	4	0	0	0	0	7d	4	0	0	1	6.6	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38
337	4	51	4	4000	5	5	1	4	9	4	0	0	0	0	7d	4	0	0	1	6.6	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38
338	4	52	3	5000	1	43	1	1	9	0	0	4	0	0	0	5	0	0	1	8.25	0.71	0.5	0.2	0	0.94	1	0.07	0	0
339	4	52	3	5000	2	21	1	2	9	0	0	4	0	0	0	5	0	0	1	8.25	0.71	0.5	0.2	0	1.14	1	0.07	0	0
340	4	52	3	5000	3	40	2	3	9	0	0	4	0	0	0	5	0	0	0	8.25	0.71	0.5	0	0	0	1	0	0	0
341	4	52	3	5000	4	17	2	3	9	0	0	4	0	0	0	5	0	0	0	8.25	0.71	0.5	0	0	0	1	0	0	0
342	4	52	3	5000	5	15	2	3	9	0	0	4	0	0	0	5	0	0	0	8.25	0.71	0.5	0	0	0	1	0	0	0
343	4	52	3	5000	6	14	2	4	9	0	0	4	0	0	0	5	0	0	1	8.25	0.71	0.5	0.2	0	1.38	1	0.07	0	0
344	4	53	3	3000	1	53	1	1	9	4	0	0	7	0	7d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.09	1	0.07	17.9	1.28
345	4	53	3	3000	2	40	2	2	9	4	0	0	7	0	7d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
346	4	53	3	3000	3	22	1	3	9	4	0	0	7	0	7d	5	0	0	0	4.95	0.71	0.5	0	1	0	1	0	1	0
347	4	53	3	3000	4	21	1	3	9	4	0	0	7	0	7d	5	0	0	0	4.95	0.71	0.5	0	1	0	1	0	1	0

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
348	4	53	3	3000	5	16	2	3	9	4	0	0	7	0	7d	5	0	0	0	4.95	0.71	0.5	0	1	0	1	0	1	0
349	4	54	3	20000	1	60	1	1	9	0	0	0	0	0	3d	4	0	0	1	33	0.71	0.5	0.25	1	1.36	1	0.09	36	3.21
350	4	54	3	20000	2	42	2	2	9	0	0	0	0	0	3d	4	0	0	1	33	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38
351	4	54	3	20000	3	25	1	3	9	0	0	0	0	0	3d	4	0	0	0	33	0.71	0.5	0	1	0	1	0	1	0
352	4	54	3	20000	4	19	2	3	9	0	0	0	0	0	3d	4	0	0	0	33	0.71	0.5	0	1	0	1	0	1	0
353	4	54	3	20000	5	17	2	3	9	0	0	0	0	0	3d	4	0	0	0	33	0.71	0.5	0	1	0	1	0	1	0
354	4	55	2	8000	1	50	1	1	9	4	0	0	0	0	3d	4	0	0	1	13.2	0.71	0.5	0.25	1	0.95	1	0.09	12.3	1.1
355	4	55	2	8000	2	47	2	2	9	4	0	0	0	0	3d	4	0	0	1	13.2	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38
356	4	55	2	8000	3	30	1	3	9	4	0	0	0	0	3d	4	0	0	1	13.2	0.71	0.5	0.25	1	0.76	1	0.09	7.42	0.66
357	4	55	2	8000	4	25	1	3	9	4	0	0	0	0	3d	4	0	0	1	13.2	0.71	0.5	0.25	1	1.09	1	0.09	17.9	1.6
358	4	55	2	8000	5	23	2	3	9	4	0	0	0	0	3d	4	0	0	1	13.2	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38
359	4	55	2	8000	6	19	2	3	9	4	0	0	0	0	3d	4	0	0	1	13.2	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38
360	4	55	2	8000	7	3	1	4	9	4	0	0	0	0	3d	4	0	0	0	13.2	0.71	0.5	0	1	0	1	0	1	0
361	4	55	2	8000	8	1	1	4	9	4	0	0	0	0	3d	4	0	0	0	13.2	0.71	0.5	0	1	0	1	0	1	0
362	4	56	4	3000	1	30	1	1	9	4	0	0	0	0	7d	5	0	0	1	4.95	0.71	0.5	0.2	1	0.76	1	0.07	7.42	0.53
363	4	56	4	3000	2	28	2	2	9	4	0	0	0	0	7d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
364	4	56	4	3000	3	25	2	3	9	4	0	0	0	0	7d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
365	4	56	4	3000	4	17	1	3	9	4	0	0	0	0	7d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
366	4	56	4	3000	5	2	2	4	9	4	0	0	0	0	7d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
367	4	57	3	3000	1	25	1	1	9	4	0	0	0	0	7d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.24	1	0.07	26.4	1.89
368	4	57	3	3000	2	21	2	2	9	4	0	0	0	0	7d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
369	4	57	3	3000	3	23	1	3	9	4	0	0	0	0	7d	5	0	0	0	4.95	0.71	0.5	0	1	0	1	0	1	0
370	4	57	3	3000	4	5	1	4	9	4	0	0	0	0	7d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
371	4	57	3	3000	5	3	1	4	9	4	0	0	0	0	7d	5	0	0	1	4.95	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
372	4	58	2	3500	1	65	1	1	9	4	0	0	7	0	24	5	0	0	1	5.78	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
373	4	58	2	3500	2	50	2	2	9	4	0	0	7	0	24	5	0	0	1	5.78	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
374	4	58	2	3500	3	30	1	3	9	4	0	0	7	0	24	5	0	0	1	5.78	0.71	0.5	0.2	1	1.24	1	0.07	26.4	1.89
375	4	58	2	3500	4	27	1	3	9	4	0	0	7	0	24	5	0	0	1	5.78	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
376	4	58	2	3500	5	12	1	4	9	4	0	0	7	0	24	5	0	0	0	5.78	0.71	0.5	0	1	0	1	0	1	0
377	4	58	2	3500	6	25	2	3	9	4	0	0	7	0	24	5	0	0	1	5.78	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
378	4	58	2	3500	7	21	2	3	9	4	0	0	7	0	24	5	0	0	1	5.78	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
379	4	59	2	2500	1	55	1	1	9	4	0	0	7	5	7d	4	0	0	1	4.13	0.71	0.5	0.25	1	0.95	1	0.09	12.3	1.1
380	4	59	2	2500	2	54	2	2	9	4	0	0	7	5	7d	4	0	0	1	4.13	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38
381	4	59	2	2500	3	40	2	3	9	4	0	0	7	5	7d	4	0	0	1	4.13	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38
382	4	59	2	2500	4	35	1	3	9	4	0	0	7	5	7d	4	0	0	1	4.13	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38
383	4	59	2	2500	5	30	1	3	9	4	0	0	7	5	7d	4	0	0	1	4.13	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38

ID	HH DATA				INDIVIDUAL ID				ACTIVITY DATA									DERIVED BM PARAMETERS								BM Components			ALL
NUM	CLUST	HHN	LCS	HHINC	ID2.1	AGE	SEX	type	ID	FRQ	DST	TTI	MOD	CST	ATI	SCA	LOC	m	RELE	ALPHA	RHO	c	omega	h	GAMMA	BM1	BM2	BM3	BM
384	4	59	2	2500	6	30	2	3	9	4	0	0	7	5	7d	4	0	0	1	4.13	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38
385	4	59	2	2500	7	20	2	3	9	4	0	0	7	5	7d	4	0	0	1	4.13	0.71	0.5	0.25	1	1.38	1	0.09	37.9	3.38
386	4	59	2	2500	8	5	1	4	9	4	0	0	7	5	7d	4	0	0	0	4.13	0.71	0.5	0	1	0	1	0	1	0
387	4	59	2	2500	9	3	1	4	9	4	0	0	7	5	7d	4	0	0	0	4.13	0.71	0.5	0	1	0	1	0	1	0
388	4	59	2	2500	10	1	1	4	9	4	0	0	7	5	7d	4	0	0	0	4.13	0.71	0.5	0	1	0	1	0	1	0
389	4	60	2	4200	1	23	1	1	12	4	0	0	4	0	7d	5	0	0	1	6.93	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.7
390	4	60	2	4200	2	21	2	2	12	4	0	0	4	0	7d	5	0	0	1	6.93	0.71	0.5	0.2	1	1.38	1	0.07	37.9	2.71
391	4	60	2	4200	3	1	2	4	12	4	0	0	4	0	7d	5	0	0	0	6.93	0.71	0.5	0	1	0	1	0	1	0
392	4	61	1	3500	1	25	1	1	12	4	0	4	4	0	7d	5	0	0	1	5.78	0.71	0.5	0.2	1	0.74	1	0.07	7.08	0.5
393	4	61	1	3500	2	40	2	2	12	4	0	4	4	0	7d	5	0	0	1	5.78	0.71	0.5	0.2	1	1.38	1	0.07	37.2	2.65
394	4	62	1	4000	1	35	1	1	9	4	0	4	7	5	24	5	0	0	1	6.6	0.71	0.5	0.2	1	1.09	1	0.07	17.3	1.24
395	4	62	1	4000	2	21	2	2	9	4	0	4	7	5	24	5	0	0	1	6.6	0.71	0.5	0.2	1	1.38	1	0.07	37.2	2.65

EXPLANATION OF LEGENDS AND VALUES USED

IDENTIFICATION		MULTINOMIAL CHOICE FOR TIME SEGMENTS	BINARY CHOICE	FREQ CHOICE
NUM	INDIVIDUAL ID NUMBER	1=WORK/SCHOOL	CHOICE FOR EACH ACTIVITY:	1=DAILY
CLUST	CLUSTER	2=MARKET	1=TRIP TAKEN	2=WEEKLY
HHN	HOUSEHOLD	3=HEALTH	0=NO TRIP	3=MONTHLY
type	INDIVIDUAL TYPE	4=LEISURE		4=OCCASIONAL
		5=NO CHOICE		0=IRRELEVANT

TABLE D-3 OBSERVED CHOICE VECTOR FOR ALL INDIVIDUALS (HALA)

IDENTIFICATION				MULTINOMIAL CHOICE FOR TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
1	1	1	1	1	1	1	1	5	1	1	1	0	1	1
2	1	1	2	5	5	5	5	5	0	0	0	0	1	1
3	1	1	3	5	5	5	5	5	0	0	0	0	1	1
4	1	1	3	5	5	5	5	5	0	0	0	0	1	1
5	1	2	1	1	1	1	1	5	1	0	0	0	2	3
6	1	2	2	5	5	5	5	5	1	0	0	0	2	3
7	1	2	4	5	1	1	5	5	1	0	0	0	2	3
8	1	2	4	5	1	1	5	5	1	0	0	0	2	3
9	1	3	1	5	1	1	5	5	1	1	0	0	1	4
10	1	3	2	5	5	5	5	5	0	0	0	0	1	4
11	1	3	4	1	1	1	5	5	1	0	0	0	1	4
12	1	3	4	1	1	1	5	5	1	0	0	0	1	4
13	1	4	1	5	1	1	1	5	1	1	1	0	1	1
14	1	4	2	5	5	5	5	5	0	0	1	0	1	1
15	1	4	4	1	1	1	3	3	1	0	1	0	1	1
16	1	4	4	1	1	1	5	5	1	0	0	0	1	1
17	1	4	4	1	1	1	3	5	1	0	1	0	1	1
18	1	4	4	1	1	1	3	5	1	0	1	0	1	1
19	1	5	1	5	5	5	5	3	0	1	1	0	1	4
20	1	5	2	5	5	5	5	5	0	0	0	0	1	4
21	1	5	3	1	1	1	5	5	1	0	0	0	1	4
22	1	6	1	1	1	1	1	3	1	1	1	0	1	1
23	1	6	2	5	5	5	5	5	0	0	0	0	1	1
24	1	6	4	1	1	1	5	5	1	0	0	0	1	1
25	1	7	1	1	1	1	5	5	1	1	1	0	1	1
26	1	7	2	5	5	5	5	5	0	0	0	0	1	1
27	1	7	4	1	1	1	5	5	1	0	0	0	1	1
28	1	7	4	1	1	1	5	5	1	0	0	0	1	1
29	1	7	4	1	1	1	5	5	1	0	0	0	1	1
30	1	8	1	5	1	1	1	3	1	1	1	0	1	2
31	1	8	2	5	5	5	5	5	0	0	0	0	1	2
32	1	8	3	1	1	1	5	5	1	1	0	0	1	2
33	1	8	4	1	1	1	2	5	1	1	0	0	1	2
34	1	8	4	5	5	5	5	5	0	0	0	0	1	2
35	1	9	1	1	1	1	1	5	1	1	1	0	1	1
36	1	9	2	5	5	5	5	5	0	0	0	0	1	1
37	1	9	3	1	1	1	2	5	1	1	0	0	1	1
38	1	9	4	1	1	1	5	5	1	0	0	0	1	1
39	1	9	4	1	1	1	5	5	1	0	0	0	1	1
40	1	10	1	1	1	1	5	5	1	1	0	0	1	2
41	1	10	2	5	5	5	5	5	0	0	0	0	1	2
42	1	10	4	1	1	1	1	5	1	0	0	0	1	2
43	1	10	4	1	1	1	1	5	1	0	0	0	1	2
44	1	11	1	1	1	1	2	5	1	1	1	0	1	1

IDENTIFICATION				MULTINOMIAL CHOICE FOR TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
45	1	11	2	5	4	4	5	5	0	0	0	1	1	1
46	1	11	4	1	1	1	5	5	1	0	0	0	1	1
47	1	11	4	1	1	1	5	5	1	0	0	0	1	1
48	1	12	1	1	1	4	5	5	1	1	1	1	1	1
49	1	12	2	5	4	5	5	5	0	0	1	1	1	1
50	1	12	4	1	1	1	5	5	1	0	0	0	1	1
51	1	12	4	1	1	1	3	5	1	0	1	0	1	1
52	1	12	4	1	1	1	5	5	1	1	0	0	1	1
53	1	12	4	5	5	5	5	5	0	0	0	0	1	1
54	1	13	1	1	1	1	1	2	1	1	1	0	1	1
55	1	13	2	5	5	5	5	5	0	0	0	0	1	1
56	1	13	4	1	1	1	5	5	1	0	0	0	1	1
57	1	13	4	1	1	1	5	5	1	0	0	0	1	1
58	1	13	4	1	1	1	5	5	1	0	0	0	1	1
59	1	14	1	1	1	1	5	5	1	1	0	0	1	4
60	1	14	2	5	4	5	5	5	0	0	0	1	1	4
61	1	14	4	1	1	1	1	5	1	0	0	0	1	4
62	1	14	4	1	1	1	5	5	1	0	0	0	1	4
63	1	14	4	1	1	1	5	5	1	0	0	0	1	4
64	1	15	1	5	1	1	1	5	1	0	1	0	1	1
65	1	15	2	5	4	5	5	5	0	0	0	1	1	1
66	1	15	3	1	1	1	2	2	1	1	0	0	1	1
67	1	15	4	1	1	1	5	5	1	0	0	0	1	1
68	1	15	4	1	1	1	5	5	1	0	0	0	1	1
69	1	16	1	1	1	1	1	2	1	1	1	0	1	1
70	1	16	2	5	4	5	5	5	0	0	0	1	1	1
71	1	16	3	1	1	1	5	5	1	0	0	0	1	1
72	1	16	4	1	1	1	5	5	1	0	0	0	1	1
73	1	16	4	1	1	1	5	5	1	0	0	0	1	1
74	1	16	4	1	1	1	5	5	1	0	0	0	1	1
75	1	17	1	1	1	1	1	1	1	1	0	0	1	3
76	1	17	2	5	5	5	5	5	0	0	0	0	1	3
77	1	17	4	1	1	1	5	5	1	0	0	0	1	3
78	1	17	4	1	1	1	5	5	1	0	0	0	1	3
79	1	18	1	1	1	5	5	5	1	0	0	0	1	2
80	1	18	2	5	5	5	5	5	0	0	0	0	1	2
81	1	18	3	1	1	1	5	4	1	1	0	1	1	2
82	1	18	3	1	1	1	1	5	1	0	0	0	1	2
83	1	18	4	1	1	1	5	5	1	0	0	0	1	2
84	1	19	1	1	1	1	1	1	1	1	0	0	1	2
85	1	19	2	5	5	5	5	5	0	0	0	0	1	2
86	1	19	4	5	5	5	5	5	0	0	0	0	1	2
87	1	19	4	5	5	5	5	5	0	0	0	0	1	2
88	1	19	4	1	1	1	5	5	1	0	0	0	1	2
89	1	19	4	1	1	1	5	5	1	0	0	0	1	2
90	1	20	1	1	1	1	1	2	1	1	1	0	1	1
91	1	20	2	5	5	5	5	5	0	0	0	0	1	1
92	1	20	4	1	1	1	5	5	1	0	0	0	1	1
93	1	20	4	1	1	1	5	5	1	0	0	0	1	1
94	2	21	1	1	1	1	1	5	1	1	0	0	1	4
95	2	21	2	1	1	1	5	5	1	0	0	0	1	4
96	2	21	4	1	1	1	5	5	0	0	0	0	1	4
97	2	21	4	5	5	5	5	5	0	0	0	0	1	4

IDENTIFICATION				MULTINOMIAL CHOICE FOR TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
98	2	21	4	5	5	5	5	5	1	0	0	0	1	4
99	2	22	1	1	1	1	1	1	1	1	0	0	1	4
100	2	22	2	5	5	5	5	5	1	0	0	0	1	4
101	2	22	4	5	5	5	5	5	0	0	0	0	1	4
102	2	23	1	1	1	1	1	1	1	1	0	0	1	4
103	2	23	2	5	5	5	5	5	1	0	0	0	1	4
104	2	23	4	5	5	5	5	5	1	0	0	0	1	4
105	2	23	4	5	5	5	5	5	1	0	0	0	1	4
106	2	24	1	5	5	5	5	5	1	1	0	0	1	4
107	2	24	2	1	1	1	1	5	1	0	0	0	1	4
108	2	24	4	5	5	5	5	2	0	1	0	0	1	4
109	2	24	4	5	5	5	5	5	0	0	0	0	1	4
110	2	24	4	5	5	5	5	5	0	0	0	0	1	4
111	2	25	1	1	1	1	1	1	1	1	0	0	1	4
112	2	25	2	5	5	5	5	5	0	0	0	0	1	4
113	2	25	4	1	1	1	5	5	1	0	0	0	1	4
114	2	25	4	1	1	1	5	5	1	0	0	0	1	4
115	2	26	1	1	1	1	1	1	1	1	0	0	1	4
116	2	26	2	5	5	5	5	5	0	0	0	0	1	4
117	2	27	1	2	5	5	5	5	0	1	0	0	1	4
118	2	27	2	5	5	5	5	5	0	0	0	0	1	4
119	2	27	4	5	5	5	5	5	0	0	0	0	1	4
120	2	27	4	5	5	5	5	5	0	0	0	0	1	4
121	2	28	1	1	1	1	1	5	1	1	0	0	1	4
122	2	28	2	5	5	5	5	5	0	0	0	0	1	4
123	2	29	1	2	1	1	1	1	1	1	0	1	1	4
124	2	29	2	5	5	5	5	5	0	0	0	0	1	4
125	2	29	4	5	5	5	5	5	0	0	0	0	1	4
126	2	29	4	5	5	5	5	5	0	0	0	0	1	4
127	2	29	4	5	5	5	5	5	0	0	0	0	1	4
128	2	30	1	1	1	1	1	2	1	1	0	0	1	4
129	2	30	2	5	5	5	5	5	0	0	0	0	1	4
130	2	31	1	1	1	1	1	4	1	1	0	1	1	4
131	2	31	2	5	5	5	5	5	0	0	0	0	1	4
132	2	31	4	5	5	5	5	5	0	0	0	0	1	4
133	2	31	4	5	5	5	5	5	0	0	0	0	1	4
134	2	32	1	1	1	1	5	5	1	1	0	0	1	4
135	2	32	2	5	5	5	5	5	0	0	0	0	1	4
136	2	32	4	5	5	5	5	5	0	0	0	0	1	4
137	2	32	4	5	5	5	5	5	0	0	0	0	1	4
138	2	33	1	1	1	1	1	2	1	1	0	0	1	4
139	2	33	2	5	5	5	5	5	0	0	0	0	1	4
140	2	33	4	5	5	5	5	5	0	0	0	0	1	4
141	2	33	4	5	5	5	5	5	0	0	0	0	1	4
142	2	34	1	1	1	1	1	5	1	0	0	0	2	4
143	2	34	2	5	5	5	5	5	0	0	0	0	2	4
144	2	35	1	1	1	1	1	5	1	1	0	0	1	4
145	2	35	2	5	5	5	5	5	0	0	0	0	1	4
146	2	35	4	1	1	1	5	5	1	0	0	0	1	4
147	2	36	1	1	1	1	1	1	1	1	0	0	1	4
148	2	36	2	5	5	5	5	5	0	0	0	0	1	4
149	2	36	4	5	5	5	5	5	0	0	0	0	1	4
150	2	37	1	1	1	1	1	1	1	1	0	0	1	4

IDENTIFICATION				MULTINOMIAL CHOICE FOR TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
151	2	37	2	5	5	5	5	5	0	0	0	0	1	4
152	2	37	4	5	5	5	5	5	0	0	0	0	1	4
153	2	38	1	1	1	1	1	2	1	1	0	0	1	4
154	2	38	2	5	5	5	5	5	0	0	0	0	1	4
155	2	38	4	1	1	1	5	5	1	0	0	0	1	4
156	2	39	1	5	1	1	1	5	1	1	0	0	1	4
157	2	39	2	5	5	5	5	5	0	0	0	0	1	4
158	2	39	4	1	1	1	5	5	1	0	0	0	1	4
159	2	39	4	1	1	1	5	5	1	0	0	0	1	4
160	2	40	1	1	1	1	1	5	1	1	0	0	1	4
161	2	40	2	5	5	5	5	5	0	0	0	0	1	4
162	2	40	4	5	5	5	5	5	0	0	0	0	1	4
163	3	41	1	1	1	1	1	4	1	1	0	1	1	2
164	3	41	2	5	5	5	5	5	0	0	0	0	1	2
165	3	41	4	1	1	1	5	5	1	0	0	0	1	2
166	3	41	4	1	1	1	5	5	1	0	0	0	1	2
167	3	42	1	1	1	1	5	5	1	0	0	0	1	2
168	3	42	2	5	5	5	5	5	0	0	0	0	1	2
169	3	42	3	1	1	1	4	5	1	1	0	1	1	2
170	3	42	3	1	1	1	4	5	1	1	0	1	1	2
171	3	42	4	1	1	1	5	5	1	0	0	0	1	2
172	3	43	1	1	1	1	1	1	1	1	0	0	1	2
173	3	43	2	5	5	5	5	5	0	0	0	0	1	2
174	3	43	4	1	1	1	5	5	1	0	0	0	1	2
175	3	43	4	1	1	1	5	5	1	0	0	0	1	2
176	3	44	1	1	1	1	1	5	1	1	0	0	1	2
177	3	44	2	5	5	5	5	5	0	0	0	0	1	2
178	3	44	3	5	5	5	1	1	1	0	0	0	1	2
179	3	44	3	1	1	1	5	5	1	1	0	0	1	2
180	3	44	4	1	1	1	5	5	1	0	0	0	1	2
181	3	45	1	5	5	5	5	5	0	1	0	0	1	2
182	3	45	2	5	5	5	5	5	0	0	0	0	1	2
183	3	45	4	1	1	1	5	5	1	0	0	0	1	2
184	3	46	1	1	1	1	5	5	1	1	0	0	1	2
185	3	46	2	5	5	5	5	5	0	0	0	0	1	2
186	3	46	4	1	1	1	4	4	1	0	0	1	1	2
187	3	46	4	1	1	1	4	5	1	0	0	1	1	2
188	3	46	4	1	1	1	5	5	1	0	0	0	1	2
189	3	46	4	1	1	1	5	5	1	0	0	0	1	2
190	3	47	1	1	1	1	1	1	1	0	0	0	1	2
191	3	47	2	5	5	5	5	5	0	0	0	0	1	2
192	3	47	4	1	1	1	5	5	1	1	0	0	1	2
193	3	47	4	5	5	5	5	5	0	0	0	0	1	2
194	3	48	1	5	4	4	4	5	0	0	0	1	1	1
195	3	48	2	5	5	5	5	5	0	0	0	0	1	1
196	3	48	3	1	1	1	5	5	1	1	1	0	1	1
197	3	48	4	1	1	1	5	5	1	0	0	0	1	1
198	3	48	4	1	1	1	5	5	1	0	0	0	1	1
199	3	48	4	1	1	1	5	5	1	0	0	0	1	1
200	3	49	1	1	1	1	1	1	1	1	0	0	1	2
201	3	49	2	5	5	5	5	5	0	0	0	0	1	2
202	3	49	4	1	1	1	5	5	1	0	0	0	1	2
203	3	50	1	1	1	1	1	5	1	0	0	0	2	2

IDENTIFICATION				MULTINOMIAL CHOICE FOR TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
204	3	50	2	5	5	5	5	5	0	0	0	0	2	2
205	3	50	4	1	1	1	5	5	1	0	0	0	2	2
206	3	50	4	1	1	1	5	5	1	0	0	0	2	2
207	3	51	1	5	1	1	1	1	1	1	0	0	1	2
208	3	51	2	5	5	5	5	5	0	0	0	0	1	2
209	3	51	4	1	1	1	5	5	1	0	0	0	1	2
210	3	51	4	1	1	1	5	5	1	0	0	0	1	2
211	3	52	1	1	1	1	1	5	1	1	0	0	1	2
212	3	52	2	5	5	5	5	5	0	0	0	0	1	2
213	3	52	4	1	1	1	5	5	1	1	0	0	1	2
214	3	53	1	1	1	1	1	1	1	1	1	0	1	1
215	3	53	2	5	5	5	5	5	0	0	0	0	1	1
216	3	53	3	1	1	1	5	5	1	1	1	0	1	1
217	3	53	3	5	5	5	5	5	0	0	0	0	1	1
218	3	53	3	1	1	1	1	5	1	0	0	0	1	1
219	3	53	4	1	1	1	1	1	1	0	0	0	1	1
220	3	53	4	5	5	5	5	5	0	0	0	0	1	1
221	3	53	4	5	5	5	5	5	0	0	0	0	1	1
222	3	53	4	5	5	5	5	5	0	0	0	0	1	1
223	3	53	4	1	1	1	5	5	1	0	0	0	1	1
224	3	54	1	1	1	1	1	1	1	0	0	0	1	2
225	3	54	2	5	5	5	5	5	0	0	0	0	1	2
226	3	54	3	5	5	5	5	1	1	0	0	0	1	2
227	3	54	3	1	1	1	1	1	1	1	0	0	1	2
228	3	54	4	1	1	1	1	1	1	0	0	0	1	2
229	3	54	4	1	1	1	5	5	1	0	0	0	1	2
230	3	55	1	2	1	1	1	5	1	1	0	0	1	2
231	3	55	2	5	5	5	5	5	0	0	0	0	1	2
232	3	55	4	1	1	1	5	5	1	1	0	0	1	2
233	3	56	1	1	1	1	1	5	1	1	0	0	1	2
234	3	56	2	5	5	5	5	5	0	0	0	0	1	2
235	3	56	4	5	5	5	5	5	0	0	0	0	1	2
236	3	56	4	1	1	1	4	4	1	0	0	1	1	2
237	3	56	4	1	1	1	4	4	1	0	0	1	1	2
238	3	56	4	1	1	1	5	5	1	0	0	0	1	2
239	3	57	1	1	1	1	1	5	1	1	0	0	1	2
240	3	57	2	5	5	5	5	5	0	0	0	0	1	2
241	3	57	4	1	1	1	5	5	1	0	0	0	1	2
242	3	57	4	1	1	1	4	4	1	0	0	1	1	2
243	3	58	1	1	1	1	1	5	1	1	0	0	1	2
244	3	58	2	5	5	5	5	5	0	0	0	0	1	2
245	3	58	4	5	5	5	5	5	0	0	0	0	1	2
246	3	58	4	5	5	5	5	5	0	0	0	0	1	2
247	3	59	1	4	1	1	1	5	1	1	0	1	1	2
248	3	59	2	5	5	5	5	5	0	0	0	0	1	2
249	3	59	4	1	1	1	5	5	1	0	0	0	1	2
250	3	59	4	5	5	5	5	5	0	0	0	0	1	2
251	3	59	4	1	1	1	4	5	1	0	0	1	1	2
252	3	60	1	1	1	1	1	2	1	1	0	0	1	2
253	3	60	2	5	5	5	5	5	0	0	0	0	1	2
254	3	60	4	5	5	5	5	5	0	0	0	0	1	2
255	3	60	4	5	5	5	5	5	0	0	0	0	1	2
256	3	60	4	1	1	1	5	5	1	0	0	0	1	2

IDENTIFICATION				MULTINOMIAL CHOICE FOR TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
257	4	61	1	1	1	1	5	2	1	1	0	0	3	4
258	4	61	2	5	5	5	5	5	0	0	0	0	3	4
259	4	61	4	5	5	5	5	5	0	0	0	0	3	4
260	4	61	4	5	5	5	5	5	0	0	0	0	3	4
261	4	61	4	5	5	5	5	5	0	0	0	0	3	4
262	4	62	1	1	1	1	1	1	1	1	0	0	1	4
263	4	62	2	5	5	5	5	5	0	0	0	0	1	4
264	4	62	4	5	5	5	5	5	0	0	0	0	1	4
265	4	63	1	1	1	1	1	1	1	0	0	0	2	4
266	4	63	2	5	5	5	5	5	0	0	0	0	2	4
267	4	63	4	5	5	5	5	5	0	0	0	0	2	4
268	4	64	1	1	1	1	1	1	1	1	0	1	1	4
269	4	64	2	5	5	5	5	5	0	0	0	0	1	4
270	4	64	3	1	1	1	5	5	1	0	0	0	1	4
271	4	64	3	1	1	1	5	5	1	0	0	0	1	4
272	4	64	4	5	5	5	5	5	0	0	0	0	1	4
273	4	64	4	5	5	5	5	5	0	0	0	0	1	4
274	4	65	1	2	1	1	1	5	1	1	0	0	0	4
275	4	65	2	5	5	5	5	5	0	0	0	0	0	4
276	4	65	4	5	5	5	5	5	0	0	0	0	0	4
277	4	65	4	5	5	5	5	5	0	0	0	0	0	4
278	4	65	4	5	5	5	5	5	0	0	0	0	0	4
279	4	66	1	1	1	1	1	1	1	1	0	0	1	4
280	4	66	2	5	5	5	5	5	0	0	0	0	1	4
281	4	66	4	5	5	5	5	5	0	0	0	0	1	4
282	4	67	1	5	5	5	5	5	0	0	0	0	2	4
283	4	67	2	5	5	5	5	5	0	0	0	0	2	4
284	4	67	3	1	1	1	5	5	1	0	0	0	2	4
285	4	67	4	1	1	5	5	5	1	0	0	0	2	4
286	4	67	4	5	5	5	5	5	0	0	0	0	2	4
287	4	67	4	1	1	1	5	5	1	0	0	0	2	4
288	4	68	1	1	1	1	5	4	1	0	0	1	2	4
289	4	68	2	5	5	5	5	5	0	0	0	0	2	4
290	4	68	4	5	5	5	5	5	0	0	0	0	2	4
291	4	68	4	5	5	5	5	5	0	0	0	0	2	4
292	4	69	1	2	1	1	1	1	1	1	0	0	1	4
293	4	69	2	5	5	5	5	5	0	0	0	0	1	4
294	4	69	4	5	5	5	5	5	0	0	0	0	1	4
295	4	70	1	1	1	1	1	4	1	1	0	1	1	4
296	4	70	2	5	5	5	5	5	0	0	0	0	1	4
297	4	70	4	5	5	5	5	5	0	0	0	0	1	4
298	4	70	4	5	5	5	5	5	0	0	0	0	1	4
299	4	71	1	1	1	1	4	4	1	0	0	1	3	4
300	4	71	2	5	5	5	5	5	0	0	0	0	3	4
301	4	71	4	5	5	5	5	5	0	0	0	0	3	4
302	4	72	1	1	1	1	1	5	1	0	0	0	0	4
303	4	72	2	5	5	5	5	5	0	0	0	0	0	4
304	4	73	1	1	1	1	1	5	1	1	0	0	1	4
305	4	73	2	5	5	5	5	5	0	0	0	0	1	4
306	4	73	4	5	5	5	5	5	1	0	0	0	1	4
307	4	74	1	2	5	5	5	5	0	1	0	0	1	4
308	4	74	2	5	5	5	5	5	0	0	0	0	1	4
309	4	74	4	5	5	5	5	5	0	0	0	0	1	4

IDENTIFICATION				MULTINOMIAL CHOICE FOR TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
310	4	75	1	1	1	1	1	5	1	0	0	0	2	4
311	4	75	2	5	5	5	5	5	0	0	0	0	2	4
312	4	76	1	1	1	1	1	4	1	0	0	1	2	4
313	4	76	2	5	5	5	5	5	0	0	0	0	2	4
314	4	76	4	5	5	5	5	5	0	0	0	0	2	4
315	4	77	1	1	1	1	1	1	1	0	0	0	2	4
316	4	77	2	5	5	5	5	5	0	0	0	0	2	4
317	4	77	4	5	5	5	5	5	0	0	0	0	2	4
318	4	77	4	5	5	5	5	5	0	0	0	0	2	4
319	4	78	1	1	1	1	5	5	1	0	0	0	3	4
320	4	78	2	5	5	5	5	5	0	0	0	0	3	4
321	4	78	4	5	5	5	5	5	0	0	0	0	3	4
322	4	79	1	1	1	1	1	4	1	0	0	1	2	4
323	4	79	2	5	5	5	5	5	0	0	0	0	2	4
324	4	79	4	5	5	5	5	5	0	0	0	0	2	4
325	4	80	1	2	2	2	2	2	0	1	0	1	0	4
326	4	80	2	5	5	5	5	5	0	0	0	0	0	4
327	5	81	1	1	1	1	5	5	1	1	0	0	1	4
328	5	81	2	5	5	5	5	5	0	0	0	0	1	4
329	5	81	4	1	1	1	2	2	1	1	0	0	1	4
330	5	81	4	5	5	5	5	5	0	0	0	0	1	4
331	5	81	4	5	5	5	5	5	0	0	0	0	1	4
332	5	82	1	5	1	1	1	5	1	1	0	0	1	4
333	5	82	2	5	5	5	5	5	0	0	0	0	1	4
334	5	83	1	1	1	1	1	5	1	0	0	0	2	4
335	5	83	2	1	1	1	5	5	1	0	0	0	2	4
336	5	83	4	2	2	2	5	5	0	1	0	0	2	4
337	5	84	1	1	1	1	1	5	1	1	0	0	1	4
338	5	84	2	5	5	5	5	5	0	0	0	0	1	4
339	5	85	1	5	1	1	1	5	1	0	0	0	2	4
340	5	85	2	5	5	5	5	5	0	0	0	0	2	4
341	5	86	1	1	1	1	1	5	1	0	0	0	2	4
342	5	86	2	5	5	5	5	5	0	0	0	0	2	4
343	5	87	1	1	1	1	5	5	1	0	0	0	0	4
344	5	87	2	5	5	5	5	5	0	0	0	0	0	4
345	5	88	1	2	2	2	1	1	1	1	0	0	1	4
346	5	88	2	1	1	1	5	5	1	0	0	0	1	4
347	5	88	4	1	1	1	5	5	1	0	0	0	1	4
348	5	89	1	1	1	1	5	5	1	0	0	0	2	4
349	5	89	2	1	1	1	5	5	1	0	0	0	2	4
350	5	90	1	1	1	1	5	5	1	1	0	0	1	4
351	5	90	2	5	5	5	5	5	0	0	0	0	1	4
352	5	91	1	5	5	5	5	5	0	1	0	0	1	4
353	5	91	2	5	5	5	5	5	0	0	0	0	1	4
354	5	92	1	5	1	1	5	5	1	0	0	0	4	4
355	5	92	2	5	5	5	5	5	0	0	0	0	4	4
356	5	93	1	1	1	1	5	5	1	1	0	0	1	4
357	5	93	2	5	1	1	5	5	1	0	0	0	1	4
358	5	94	1	1	1	1	5	5	1	1	0	0	1	4
359	5	94	2	5	5	5	5	5	0	0	0	0	1	4
360	5	95	1	1	1	2	5	5	1	1	0	0	1	4
361	5	95	2	5	5	5	5	5	0	0	0	0	1	4
362	5	96	1	2	1	1	5	5	1	1	0	0	1	4

IDENTIFICATION				MULTINOMIAL CHOICE FOR TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
363	5	96	2	5	5	5	5	5	0	0	0	0	1	4
364	5	96	4	5	5	5	5	5	0	0	0	0	1	4
365	5	97	1	1	1	1	5	5	1	0	0	0	2	4
366	5	97	2	5	5	5	5	5	0	0	0	0	2	4
367	5	98	1	1	1	1	1	5	1	0	0	0	2	4
368	5	98	2	5	5	5	5	5	0	0	0	0	2	4
369	5	99	1	1	1	1	1	5	1	1	0	0	1	4
370	5	99	2	5	5	5	5	5	0	0	0	0	1	4
371	5	100	1	1	1	1	1	5	1	0	0	0	2	4
372	5	100	2	5	5	5	5	5	0	0	0	0	2	4
373	5	100	4	5	5	5	5	5	0	0	0	0	2	4

EXPLANATION OF LEGENDS AND VALUES USED

IDENTIFICATION		MULTINOMIAL CHOICE FOR TIME SEGMENTS	BINARY CHOICE	FREQ CHOICE
NUM	INDIVIDUAL ID NUMBER	1=WORK/SCHOOL	CHOICE FOR EACH ACTIVITY:	1=DAILY
CLUST	CLUSTER	2=MARKET	1=TRIP TAKEN	2=WEEKLY
HHN	HOUSEHOLD	3=HEALTH	0=NO TRIP	3=MONTHLY
type	INDIVIDUAL TYPE	4=LEISURE		4=OCCASIONAL
		5=NO CHOICE		0=IRRELEVANT

TABLE D-4 OBSERVED CHOICE VECTOR FOR ALL INDIVIDUALS (KHUZDAR)

IDENTIFICATION				MULTINOMIAL CHOICE IN TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
1	1	1	1	1	1	1	5	5	1	0	1	0	0	4
2	1	1	2	5	5	5	5	5	0	0	1	0	0	4
3	1	1	3	1	1	1	5	5	1	0	1	0	2	4
4	1	1	3	5	5	5	5	5	0	0	1	0	0	4
5	1	1	3	1	1	1	5	5	1	0	1	0	0	4
6	1	1	3	5	5	5	5	5	0	0	1	0	0	4
7	1	1	4	5	5	5	5	5	0	0	1	0	0	4
8	1	1	4	5	5	5	5	5	0	0	1	0	0	4
9	1	2	1	5	1	1	5	5	1	0	1	0	0	4
10	1	2	2	5	5	5	5	5	0	0	1	0	0	4
11	1	2	3	1	1	1	1	1	1	0	1	0	2	4
12	1	2	4	5	5	5	5	5	0	0	1	0	0	4
13	1	2	4	1	1	5	5	5	1	0	1	0	0	4
14	1	2	4	1	1	5	5	5	1	0	1	0	0	4
15	1	2	4	5	5	5	5	5	0	0	1	0	0	4
16	1	2	4	1	1	1	5	5	1	0	1	0	0	4
17	1	2	4	5	5	5	5	5	0	0	1	0	0	4
18	1	3	1	1	1	1	1	5	1	0	1	0	0	4
19	1	3	2	5	5	5	5	5	0	0	1	0	0	4
20	1	3	3	1	1	1	1	5	1	0	1	0	2	4
21	1	3	3	1	1	1	5	5	1	0	1	0	0	4
22	1	3	4	5	5	5	5	5	0	0	1	0	0	4
23	1	3	4	5	5	5	5	5	0	0	1	0	0	4
24	1	3	4	5	5	5	5	5	0	0	1	0	0	4
25	1	4	1	1	1	1	1	5	1	1	1	0	1	4
26	1	4	2	5	5	5	5	5	0	0	1	0	0	4
27	1	4	4	5	5	5	5	5	0	0	1	0	0	4
28	1	4	4	5	5	5	5	5	0	0	1	0	0	4
29	1	4	4	5	5	5	5	5	0	0	1	0	0	4
30	1	5	1	1	1	1	4	4	1	0	0	1	2	4
31	1	5	2	5	5	5	5	5	0	0	0	0	0	0
32	1	5	4	5	5	5	5	5	0	0	0	0	0	0
33	1	6	1	1	1	1	4	4	1	0	0	1	0	0
34	1	6	2	5	5	5	5	5	0	0	0	0	0	0
35	1	6	3	5	5	5	5	5	0	1	0	0	1	0
36	1	6	3	5	1	1	5	5	1	1	1	0	1	4
37	1	7	1	1	1	1	1	2	1	1	0	0	2	0
38	1	7	2	5	5	5	5	5	0	0	0	0	0	0
39	1	7	4	5	5	5	5	5	0	0	0	0	0	0
40	1	7	4	5	5	5	5	5	0	0	1	0	0	4
41	1	8	1	1	1	1	4	4	1	0	0	1	2	0
42	1	8	2	5	5	5	5	5	0	0	0	0	2	0
43	1	8	3	5	5	5	5	5	0	0	0	0	0	0
44	1	8	3	1	1	1	5	5	1	0	1	0	0	4

IDENTIFICATION				MULTINOMIAL CHOICE IN TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
45	1	8	4	1	1	1	5	5	1	0	0	0	2	0
46	1	9	1	1	1	1	4	4	1	0	0	1	0	4
47	1	9	2	5	5	5	5	5	0	0	1	0	2	4
48	1	9	3	1	1	1	5	5	1	0	1	0	2	4
49	1	9	4	5	5	5	5	5	0	0	0	0	0	0
50	1	9	4	5	5	5	5	5	0	0	0	0	0	0
51	1	10	1	1	1	1	1	5	1	0	0	0	2	0
52	1	10	2	5	5	5	5	5	0	0	0	0	0	0
53	1	10	3	5	5	5	5	5	0	0	0	0	2	0
54	1	10	3	1	1	1	5	5	1	0	1	0	0	4
55	1	10	3	5	5	5	5	5	0	0	0	0	0	0
56	1	10	4	5	5	5	5	5	0	0	0	0	0	0
57	1	10	4	5	5	5	5	5	0	0	0	0	0	0
58	1	11	1	5	5	5	5	5	0	0	0	0	0	0
59	1	11	2	1	1	1	5	5	1	1	0	0	1	0
60	1	11	3	5	5	5	5	5	0	0	0	0	0	0
61	1	11	3	1	1	1	4	4	1	1	1	1	1	4
62	1	11	3	5	5	5	5	5	0	0	0	0	0	0
63	1	11	3	5	1	1	4	5	1	0	0	1	0	0
64	1	11	4	5	5	5	5	5	0	0	0	0	0	0
65	1	11	4	5	5	5	5	5	0	0	0	0	0	0
66	1	11	3	1	1	1	5	5	1	0	0	0	0	0
67	1	11	4	1	1	1	5	5	1	0	0	0	0	0
68	2	12	1	1	1	1	1	5	1	1	0	0	1	0
69	2	12	2	5	5	5	5	5	0	0	0	0	0	0
70	2	12	3	5	5	5	5	5	0	0	0	0	0	0
71	2	12	3	5	5	5	5	5	0	0	0	0	0	0
72	2	12	3	5	5	5	5	5	0	0	0	0	0	0
73	2	12	4	5	5	5	5	5	0	0	0	0	0	0
74	2	12	4	5	5	5	5	5	0	0	0	0	0	0
75	2	13	1	1	1	1	1	5	1	0	0	0	0	0
76	2	13	2	5	5	5	5	5	0	0	0	0	0	0
77	2	13	3	5	1	5	5	5	1	1	0	0	1	0
78	2	14	1	1	1	1	2	5	1	1	0	0	1	0
79	2	14	2	5	5	5	5	5	0	0	0	0	0	0
80	2	14	3	5	5	5	5	5	0	0	0	0	0	0
81	2	15	1	1	1	1	1	5	1	0	0	0	2	0
82	2	15	2	5	5	5	5	5	0	0	0	0	0	0
83	2	15	3	5	5	5	5	5	0	0	0	0	0	0
84	2	15	3	1	1	1	1	1	1	0	0	0	0	0
85	2	15	3	1	1	1	1	1	1	0	0	0	0	0
86	2	15	4	5	5	5	5	5	0	0	0	0	0	0
87	2	15	4	5	5	5	5	5	0	0	0	0	0	0
88	2	15	4	5	5	5	5	5	0	0	1	0	0	4
89	2	15	4	5	5	5	5	5	0	0	0	0	0	0
90	2	15	4	5	5	5	5	5	0	0	0	0	0	0
91	2	15	4	5	5	5	5	5	0	0	0	0	0	0
92	2	16	1	1	1	1	5	5	1	0	0	0	0	0
93	2	16	2	5	5	5	5	5	0	0	0	0	0	0
94	2	16	3	1	1	1	5	5	1	1	0	0	1	0
95	2	16	3	1	1	1	5	5	1	0	0	0	0	0
96	2	17	1	1	1	1	1	1	1	0	0	0	0	0
97	2	17	2	5	5	5	5	5	0	0	0	0	0	0

IDENTIFICATION				MULTINOMIAL CHOICE IN TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
98	2	17	3	1	1	1	1	1	1	0	0	0	0	0
99	2	17	3	5	5	5	5	5	0	0	1	0	0	4
100	2	17	3	5	5	5	5	5	0	0	0	0	0	0
101	2	17	3	5	5	5	5	5	0	0	0	0	0	0
102	2	17	3	5	5	5	5	5	0	0	0	0	0	0
103	2	17	4	5	2	2	5	5	0	1	0	0	2	0
104	2	17	4	5	5	5	5	5	0	0	0	0	0	0
105	2	17	4	5	5	5	5	5	0	0	0	0	0	0
106	2	18	1	1	1	1	1	5	1	1	0	0	1	0
107	2	18	2	5	5	5	5	5	0	0	0	0	0	0
108	2	18	3	1	1	1	1	5	1	0	0	0	0	0
109	2	18	3	1	1	1	1	5	1	0	1	0	0	4
110	2	18	3	5	5	5	5	5	0	0	0	0	0	0
111	2	19	1	1	1	1	1	5	1	1	0	0	1	0
112	2	19	2	5	5	5	5	5	0	0	0	0	0	0
113	2	19	4	5	5	5	5	5	0	0	0	0	0	0
114	2	19	4	5	5	5	5	5	0	0	0	0	0	0
115	2	20	1	1	1	1	1	5	1	0	0	0	2	4
116	2	20	2	5	5	5	5	5	0	0	0	0	0	4
117	2	20	3	5	5	5	5	5	0	0	0	0	2	4
118	2	20	3	5	5	5	5	5	0	0	0	0	0	4
119	2	20	3	5	5	5	5	5	0	0	0	0	0	4
120	2	20	4	5	5	5	5	5	0	0	0	0	0	4
121	2	20	4	5	5	5	5	5	0	0	0	0	0	4
122	2	21	1	1	1	1	2	2	1	1	0	0	2	4
123	2	21	2	1	1	1	2	2	1	1	0	0	2	4
124	2	21	3	1	1	1	5	5	1	0	0	0	0	4
125	2	21	4	5	5	5	5	5	0	0	0	0	0	4
126	2	21	4	1	1	1	5	5	1	0	0	0	0	4
127	2	21	4	1	1	1	5	5	1	0	0	0	0	4
128	2	22	1	1	1	1	1	5	1	1	1	0	1	4
129	2	22	2	5	5	5	5	5	0	0	0	0	0	0
130	2	22	4	1	1	1	1	5	1	0	0	0	0	0
131	2	22	4	1	1	1	2	2	1	1	0	0	0	0
132	2	23	1	5	5	5	5	5	0	0	0	0	2	4
133	2	23	2	5	5	5	5	5	0	0	0	0	0	4
134	2	23	4	1	1	1	5	5	1	0	0	0	2	4
135	2	23	4	1	1	1	5	5	1	0	0	0	0	4
136	2	23	4	5	5	5	5	5	0	0	0	0	0	4
137	2	23	4	5	5	5	5	5	0	0	0	0	0	4
138	2	24	1	1	1	1	2	2	1	1	0	0	1	4
139	2	24	2	5	5	5	5	5	0	0	0	0	0	4
140	2	24	3	5	5	5	5	5	0	1	0	0	1	4
141	2	24	3	1	1	1	2	2	1	1	0	0	0	4
142	2	24	3	5	5	5	5	5	0	0	0	0	0	4
143	2	25	1	5	5	5	5	5	0	0	0	0	2	4
144	2	25	2	5	5	5	5	5	0	0	0	0	0	4
145	2	25	4	1	1	1	5	5	1	0	0	0	2	4
146	2	25	4	1	1	1	5	5	1	0	0	0	0	4
147	2	25	4	5	5	5	5	5	0	0	0	0	0	4
148	2	25	4	5	5	5	5	5	0	0	0	0	0	4
149	2	26	1	2	2	5	5	5	0	1	0	0	1	4
150	2	26	2	5	5	5	5	5	0	1	0	0	1	4

IDENTIFICATION				MULTINOMIAL CHOICE IN TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
151	2	26	3	1	1	1	5	5	1	0	0	0	0	4
152	2	26	3	1	1	1	5	5	1	1	0	0	1	4
153	2	26	3	5	5	5	5	5	0	0	0	0	0	4
154	2	26	3	1	1	1	5	5	1	0	0	0	0	4
155	2	26	3	1	1	1	5	5	1	0	0	0	0	4
156	2	26	4	1	1	1	5	5	1	0	0	0	0	4
157	2	27	1	1	1	1	2	2	1	1	0	0	1	4
158	2	27	2	5	5	5	5	5	0	0	0	0	0	4
159	2	27	3	1	1	1	2	2	1	1	0	0	1	4
160	2	27	3	5	5	5	5	5	0	0	0	0	0	4
161	2	27	4	1	1	1	5	5	1	0	0	0	0	4
162	2	27	4	1	1	1	5	5	1	0	0	0	0	4
163	2	27	4	5	5	5	5	5	0	0	0	0	0	4
164	2	28	1	1	1	1	1	5	1	1	1	0	1	4
165	2	28	2	5	5	5	5	5	0	0	1	0	0	4
166	2	28	4	1	1	1	5	5	1	0	1	0	0	4
167	2	28	4	5	5	5	5	5	0	0	1	0	0	4
168	2	29	1	5	5	5	5	5	0	1	0	0	1	4
169	2	29	2	5	5	5	5	5	0	0	0	0	0	4
170	2	29	3	1	1	1	5	5	1	1	0	0	1	4
171	2	29	3	5	5	5	5	5	0	0	0	0	0	4
172	2	29	3	5	5	5	5	5	0	0	0	1	0	4
173	2	29	4	5	5	5	5	5	0	0	0	1	0	4
174	2	29	4	5	5	5	5	5	0	0	0	0	0	4
175	2	30	1	1	1	1	1	5	1	1	0	0	1	4
176	2	30	2	5	5	5	5	5	0	0	0	1	0	4
177	2	30	3	1	1	1	1	1	1	1	0	1	1	4
178	2	30	3	1	1	1	1	1	1	0	0	1	0	4
179	2	30	4	1	1	1	5	5	1	0	0	1	0	4
180	2	30	4	1	1	1	5	5	1	0	0	1	0	4
181	2	30	4	1	1	1	5	5	1	0	0	1	0	4
182	2	30	4	5	5	5	5	5	0	0	0	1	0	4
183	2	30	3	5	5	5	5	5	0	0	1	0	0	4
184	2	31	1	5	5	5	5	5	0	0	1	1	2	4
185	2	31	2	5	5	5	5	5	0	0	1	1	0	4
186	2	31	3	5	5	5	5	5	0	0	1	0	0	4
187	2	31	3	5	5	5	5	5	0	0	1	0	0	4
188	2	31	3	5	5	5	5	5	0	0	1	0	0	4
189	2	32	1	5	5	5	5	5	0	0	1	0	0	4
190	2	32	2	5	5	5	5	5	0	0	1	1	0	4
191	2	32	4	5	5	5	5	5	0	0	1	1	0	4
192	2	32	4	5	5	5	5	5	0	0	1	0	0	4
193	2	33	1	5	2	2	5	5	0	1	0	0	1	4
194	2	33	2	5	5	5	5	5	0	1	0	1	1	4
195	2	33	3	1	1	1	1	5	1	1	0	1	1	4
196	2	33	3	1	1	1	5	5	1	1	0	1	1	4
197	2	33	3	1	1	1	5	5	1	0	0	1	0	4
198	2	33	3	5	5	5	5	5	0	0	0	1	0	4
199	2	33	4	5	5	5	5	5	0	0	0	1	0	4
200	2	33	4	5	5	5	5	5	0	0	0	0	0	4
201	2	34	1	5	5	5	5	5	0	0	1	0	2	4
202	2	34	2	5	5	5	5	5	0	0	1	0	0	4
203	2	34	4	5	5	5	5	5	0	0	1	0	0	4

IDENTIFICATION				MULTINOMIAL CHOICE IN TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
204	2	34	4	5	5	5	5	5	0	0	1	0	0	4
205	2	34	4	5	5	5	5	5	0	0	1	0	0	4
206	3	35	1	1	1	1	1	1	1	0	0	0	0	4
207	3	35	2	5	5	5	5	5	0	0	0	0	0	4
208	3	35	3	1	1	1	1	1	1	0	0	0	2	4
209	3	35	3	1	1	1	1	4	1	0	0	1	2	4
210	3	35	3	1	1	1	2	2	1	1	0	0	2	4
211	3	35	3	5	5	5	5	5	0	0	0	0	0	4
212	3	35	3	5	5	5	5	5	0	0	0	0	0	4
213	3	35	3	5	5	5	5	5	0	0	0	0	0	4
214	3	35	3	5	5	5	5	5	0	0	1	1	0	4
215	3	35	3	5	5	5	5	5	0	0	0	1	0	4
216	3	35	4	1	1	1	5	5	1	0	0	1	0	4
217	3	35	4	1	1	1	5	5	1	0	0	1	0	4
218	3	35	4	1	1	1	5	5	1	0	0	1	0	4
219	3	35	4	5	5	5	5	5	0	0	0	1	0	4
220	3	35	4	1	1	1	5	5	1	0	0	1	0	4
221	3	35	4	5	5	5	5	5	0	0	0	1	0	4
222	3	35	4	5	5	5	5	5	0	0	0	1	0	4
223	3	35	4	5	5	5	5	5	0	0	0	1	0	4
224	3	36	1	1	1	1	1	1	1	1	0	0	1	4
225	3	36	2	5	5	5	5	5	0	0	0	0	0	4
226	3	36	3	5	5	5	5	5	0	1	0	0	1	4
227	3	36	4	5	5	5	5	5	0	0	0	0	0	4
228	3	36	4	5	5	5	5	5	0	0	0	0	0	4
229	3	36	3	5	5	5	5	5	0	0	0	0	0	4
230	3	36	4	5	5	5	5	5	0	0	0	0	0	4
231	3	36	4	5	5	5	5	5	0	0	0	0	0	4
232	3	37	1	1	1	1	1	5	1	1	1	0	1	4
233	3	37	2	5	5	5	5	5	0	0	1	0	0	4
234	3	37	3	5	5	5	5	5	0	0	1	0	0	4
235	3	37	3	5	5	5	5	5	0	0	1	0	0	4
236	3	37	4	5	5	5	5	5	0	0	1	0	0	4
237	3	37	4	5	5	5	5	5	0	0	1	0	0	4
238	3	37	4	5	5	5	5	5	0	0	1	0	0	4
239	3	38	1	1	1	1	5	5	1	1	1	0	1	4
240	3	38	2	5	5	5	5	5	0	0	1	0	0	4
241	3	38	3	5	5	5	5	5	0	0	1	0	0	4
242	3	38	3	5	5	5	5	5	0	0	1	0	0	4
243	3	38	4	5	5	5	5	5	0	0	1	0	0	4
244	3	38	4	5	5	5	5	5	0	0	1	0	0	4
245	3	38	4	5	5	5	5	5	0	0	1	0	0	4
246	3	38	4	5	5	5	5	5	0	0	1	0	0	4
247	3	38	4	5	5	5	5	5	0	0	1	0	0	4
248	3	39	1	1	1	1	1	1	1	1	1	0	1	4
249	3	39	2	5	5	5	5	5	0	0	1	0	0	4
250	3	39	3	5	5	5	5	5	0	0	1	0	0	4
251	3	39	4	5	5	5	5	5	0	0	1	0	0	4
252	3	40	1	1	1	1	5	5	1	1	1	0	1	4
253	3	40	2	5	5	5	5	5	0	0	1	0	0	4
254	3	40	3	5	5	5	5	5	0	0	1	0	0	4
255	3	40	3	5	5	5	5	5	0	0	1	0	0	4
256	3	40	3	5	5	5	5	5	0	0	1	0	0	4

IDENTIFICATION				MULTINOMIAL CHOICE IN TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
257	3	40	4	1	1	1	5	5	1	0	1	0	0	4
258	3	40	4	5	5	5	5	5	0	0	1	0	0	4
259	3	41	1	1	1	1	5	5	1	0	1	0	2	4
260	3	41	2	5	5	5	5	5	0	0	1	0	0	4
261	3	41	4	1	1	1	5	5	1	0	1	0	0	4
262	3	41	4	1	1	1	5	5	1	0	1	0	0	4
263	3	41	4	5	5	5	5	5	0	0	1	0	0	4
264	3	42	1	5	1	1	4	5	1	1	1	1	1	4
265	3	42	2	5	5	5	5	5	0	1	1	0	1	4
266	3	42	3	5	5	5	5	5	0	0	0	0	0	0
267	3	42	3	5	5	5	5	5	0	0	0	0	0	0
268	3	42	4	5	5	5	5	5	0	0	0	0	0	0
269	3	42	4	5	5	5	5	5	0	0	0	0	0	0
270	3	42	4	5	5	5	5	5	0	0	0	0	0	0
271	3	42	4	5	5	5	5	5	0	0	0	0	0	0
272	3	43	1	1	1	1	1	1	1	0	1	0	2	4
273	3	43	2	5	5	5	5	5	0	0	1	0	0	4
274	3	43	3	1	1	5	5	5	1	0	1	0	0	4
275	3	43	3	5	5	5	5	5	0	0	1	0	0	4
276	3	43	4	1	1	1	5	5	1	0	1	0	0	4
277	3	43	4	5	5	5	5	5	0	0	1	0	0	4
278	3	43	4	5	5	5	5	5	0	0	1	0	0	4
279	3	43	4	5	5	5	5	5	0	0	1	0	0	4
280	4	44	1	1	1	1	5	5	1	0	0	0	2	4
281	4	44	2	5	5	5	5	5	0	0	0	0	0	4
282	4	44	3	5	5	5	5	5	0	0	0	0	0	4
283	4	44	4	1	1	1	5	5	1	0	0	0	0	4
284	4	44	4	1	1	1	5	5	1	0	0	0	0	4
285	4	44	4	5	5	5	5	5	0	0	0	0	0	4
286	4	44	4	5	5	5	5	5	0	0	0	0	2	4
287	4	44	3	1	1	1	5	5	1	0	0	0	2	4
288	4	44	4	1	1	1	5	5	1	0	0	0	2	4
289	4	44	4	1	1	1	5	5	1	0	0	0	0	4
290	4	44	4	5	5	5	5	5	0	0	0	0	0	4
291	4	45	1	1	1	1	2	2	1	1	0	0	1	4
292	4	45	2	5	5	5	5	5	0	0	0	0	0	4
293	4	45	3	5	5	5	5	5	0	0	0	0	0	4
294	4	45	3	1	1	1	2	2	1	1	0	0	1	4
295	4	45	3	5	5	5	5	5	0	0	0	0	0	4
296	4	45	4	1	1	1	5	5	1	0	0	0	0	4
297	4	45	4	5	5	5	5	5	0	0	0	0	0	4
298	4	46	1	5	5	5	5	5	0	0	0	0	0	4
299	4	46	2	1	1	1	5	5	1	1	0	0	1	4
300	4	46	3	5	5	5	5	5	0	0	0	0	0	4
301	4	46	3	5	1	1	1	5	1	1	0	0	1	4
302	4	46	4	5	5	5	5	5	0	0	0	0	0	4
303	4	46	4	5	5	5	5	5	0	0	0	0	0	4
304	4	47	1	1	1	1	1	5	1	0	0	0	2	4
305	4	47	2	5	5	5	5	5	0	0	0	0	0	4
306	4	47	3	5	5	5	5	5	0	0	0	0	0	4
307	4	47	3	5	5	5	5	5	0	0	0	0	0	4
308	4	47	4	1	1	1	5	5	1	0	0	0	0	4
309	4	47	4	1	1	1	5	5	1	0	0	0	0	4

IDENTIFICATION				MULTINOMIAL CHOICE IN TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
310	4	47	4	1	1	1	5	5	1	0	0	0	0	4
311	4	47	3	1	1	1	4	4	1	0	0	1	0	4
312	4	47	3	5	5	5	5	5	0	0	1	0	0	4
313	4	48	1	1	1	1	1	5	1	1	1	0	1	4
314	4	48	2	5	5	5	5	5	0	0	1	0	0	4
315	4	48	3	5	5	5	5	5	0	0	1	0	0	4
316	4	48	4	1	1	1	5	5	1	0	1	0	0	4
317	4	48	4	1	1	1	5	5	1	0	1	0	0	4
318	4	48	4	1	1	1	5	5	1	0	1	0	0	4
319	4	48	4	1	1	1	5	5	1	0	1	0	0	4
320	4	48	4	5	5	5	5	5	0	0	1	0	0	4
321	4	48	4	5	5	5	5	5	0	0	1	0	0	4
322	4	48	4	5	5	5	5	5	0	0	1	0	0	4
323	4	48	4	5	5	5	5	5	0	0	1	0	0	4
324	4	48	4	5	5	5	5	5	0	0	1	0	0	4
325	4	48	4	5	5	5	5	5	0	0	1	0	0	4
326	4	48	4	5	5	5	5	5	0	0	1	0	0	4
327	4	49	1	5	5	5	1	1	1	1	1	0	1	4
328	4	49	2	5	5	5	5	5	0	0	1	0	0	4
329	4	49	3	5	5	5	5	5	0	0	1	0	0	4
330	4	49	4	1	1	1	5	5	1	0	1	0	0	4
331	4	50	1	1	1	1	5	5	1	0	1	0	2	4
332	4	50	2	5	5	5	5	5	0	0	1	0	2	4
333	4	51	1	1	1	1	2	2	1	1	0	0	2	4
334	4	51	2	5	5	5	5	5	0	0	0	0	0	4
335	4	51	3	1	1	1	2	2	1	1	0	0	2	4
336	4	51	3	2	2	5	2	2	0	1	0	0	0	4
337	4	51	4	2	2	5	2	2	0	1	0	0	0	4
338	4	52	1	1	1	1	1	5	1	0	1	0	3	4
339	4	52	2	1	1	1	5	5	1	0	1	0	0	4
340	4	52	3	5	5	5	5	5	0	0	1	0	0	4
341	4	52	3	5	5	5	5	5	0	0	1	0	0	4
342	4	52	3	5	5	5	5	5	0	0	1	0	0	4
343	4	52	4	5	5	5	5	5	0	0	1	0	0	4
344	4	53	1	1	1	1	1	5	1	0	0	0	2	0
345	4	53	2	5	5	5	5	5	0	0	0	0	0	0
346	4	53	3	1	1	1	5	5	1	0	0	0	2	0
347	4	53	3	1	1	1	5	5	1	0	0	0	0	0
348	4	53	3	5	5	5	5	5	0	0	0	0	0	0
349	4	54	1	5	1	1	2	2	1	1	0	0	3	4
350	4	54	2	5	5	5	5	5	0	0	0	0	0	4
351	4	54	3	5	1	1	5	5	1	0	0	0	3	4
352	4	54	3	5	5	5	5	5	0	0	0	0	0	4
353	4	54	3	5	5	5	5	5	0	0	0	0	0	4
354	4	55	1	1	1	1	1	1	1	0	0	0	0	4
355	4	55	2	5	5	5	5	5	0	0	0	0	0	4
356	4	55	3	5	5	5	1	1	1	0	0	0	3	4
357	4	55	3	1	1	1	5	5	1	0	0	0	3	4
358	4	55	3	5	5	5	5	5	0	0	0	0	0	4
359	4	55	3	5	5	5	5	5	0	0	0	0	0	4
360	4	55	4	5	5	5	5	5	0	0	0	0	0	4
361	4	55	4	5	5	5	5	5	0	0	0	0	0	4
362	4	56	1	1	1	1	1	5	1	1	1	0	1	4

IDENTIFICATION				MULTINOMIAL CHOICE IN TIME SEGMENTS					BINARY CHOICE				FREQ CHOICE	
NUM	CLUST	HHN	type	0600-0900	0900-1200	1200-1500	1500-1800	1800-2100	WRK/SCH	MARKET	HEALTH	LEISURE	MARKET	HEALTH
363	4	56	2	5	5	5	5	5	0	0	1	0	0	4
364	4	56	3	5	5	5	5	5	0	0	1	0	0	4
365	4	56	3	5	5	5	5	5	0	0	1	0	0	4
366	4	56	4	1	1	1	5	5	1	0	1	0	0	4
367	4	57	1	1	1	1	5	5	1	0	1	0	2	4
368	4	57	2	5	5	5	5	5	0	0	1	0	0	4
369	4	57	3	5	5	5	5	5	0	0	1	0	0	4
370	4	57	4	5	5	5	5	5	0	0	1	0	0	4
371	4	57	4	5	5	5	5	5	0	0	1	0	0	4
372	4	58	1	5	5	5	5	5	0	0	1	0	0	4
373	4	58	2	5	5	5	5	5	0	0	1	0	0	4
374	4	58	3	1	1	5	5	5	1	1	1	0	1	4
375	4	58	3	5	5	5	5	5	0	0	1	0	0	4
376	4	58	4	5	5	5	5	5	0	0	1	0	0	4
377	4	58	3	5	5	5	5	5	0	0	1	0	0	4
378	4	58	3	5	5	5	5	5	0	0	1	0	0	4
379	4	59	1	1	1	1	1	5	1	0	0	0	0	4
380	4	59	2	5	5	5	5	5	0	0	0	0	0	4
381	4	59	3	5	5	5	5	5	0	0	0	0	0	4
382	4	59	3	1	1	1	5	5	1	1	0	0	1	4
383	4	59	3	5	5	5	5	5	0	1	0	0	1	4
384	4	59	3	5	5	5	5	5	0	0	0	0	0	4
385	4	59	3	5	5	5	5	5	0	0	0	0	0	4
386	4	59	4	1	1	1	5	5	1	0	0	0	0	4
387	4	59	4	5	5	5	5	5	0	0	1	0	0	4
388	4	59	4	5	5	5	5	5	0	0	0	0	0	4
389	4	60	1	1	1	1	2	2	1	1	0	0	1	4
390	4	60	2	5	5	5	5	5	0	0	1	0	0	4
391	4	60	4	5	5	5	5	5	0	0	0	0	0	0
392	4	61	1	1	1	1	1	1	1	1	1	0	1	4
393	4	61	2	5	5	5	5	5	0	0	1	0	0	4
394	4	62	1	1	1	1	1	5	1	1	1	0	1	4
395	4	62	2	5	5	5	5	5	0	0	1	0	0	4

APPENDIX E.

TABLE FOR INDIVIDUAL TIME-SPACE ANALYSIS

TABLE E-1 CALCULATIONS FOR INDIVIDUAL TIME-SPACE ANALYSIS

CLUST	HOUSEHOLD IDENTIFICATION	LCS	INCOME	TTIWRK	ATIWRK	DSTWRK	VEHOWN	MODWRK
1	1	1	4000	0	480	0	5	0
1	2	2	4000	60	660	60	4	7
1	3	2	3900	0.3	360	3	2	2
1	4	2	7000	180	480	150	0	7
1	5	3	4000	15	80	0.5	2	0
1	6	2	4000	0	0	0	0	0
1	7	2	4300	0	0.1	0	4	0
1	8	4	3500	30	480	1	0	0
1	9	4	3500	0.15	480	0.5	2	0
1	10	2	5100	15	480	0.5	2	0
1	11	2	6000	15	330	5	0	4
1	12	2	3600	30	480	1	0	0
1	13	2	3600	30	480	1	2	0
1	14	2	3000	15	330	0.5	0	0
1	15	2	6000	0	600	0	2	0
1	16	4	3700	60	480	60	0	7
1	17	2	3000	15	560	0.5	2	0
1	18	4	9500	30	330	15	0	7
1	19	4	3000	0	480	0	0	0
1	20	2	3300	30	330	3	0	5
2	21	2	12000	35	450	8	0	6
2	22	2	2000	10	480	0	0	0
2	23	2	7000	240	600	250	5	5
2	24	2	4500	30	600	8	0	7
2	25	2	3000	10	720	0	0	0
2	26	1	4500	720	720	20	0	7
2	27	2	2000	30	600	20	0	7
2	28	1	2000	30	600	8	0	7
2	29	2	5000	20	300	8	0	7
2	30	2	3000	30	600	8	0	7
2	31	2	3000	30	600	8	0	7
2	32	2	5000	5	330	0	0	0
2	33	2	6000	30	600	8	0	7
2	34	2	10000	30	600	2	0	0
2	35	2	3500	30	600	12	0	7
2	36	2	10000	15	720	3	0	4
2	37	2	4500	15	720	0.5	0	0
2	38	2	4500	20	660	8	0	7
2	39	2	10000	90	720	55	4	7
2	40	2	4500	20	660	8	0	7
3	41	2	3500	30	600	10	2	7

CLUST	HOUSEHOLD IDENTIFICATION	LCS	INCOME	TTIWRK	ATIWRK	DSTWRK	VEHOWN	MODWRK
3	42	4	4000	30	480	10	2	7
3	43	2	4500	40	600	10	0	7
3	44	4	1500	10	600	2	4	4
3	45	2	4000	0	330	0	0	0
3	46	2	3500	0	330	0	2	0
3	47	2	6000	45	720	25	0	7
3	48	4	5000	180	600	130	0	7
3	49	2	6000	0	720	0	0	0
3	50	2	7000	20	480	10	4	4
3	51	2	15000	5	720	2	4	4
3	52	2	3000	0	600	0	0	0
3	53	4	6000	0	780	0	0	0
3	54	4	6000	0	720	0	0	0
3	55	2	4500	0	480	0	0	0
3	56	2	4000	0	480	0	0	0
3	57	2	4500	0	330	0	0	0
3	58	2	450	0	540	0	0	0
3	59	2	6000	0	480	0	0	0
3	60	2	4000	0	600	0	1	0
4	61	2	3655	10	300	0.5	2	0
4	62	2	3300	10	780	0.025	0	0
4	63	2	3000	10	720	4	0	7
4	64	4	3000	0	90	0	4	0
4	65	2	2400	5	420	0.5	0	0
4	66	2	1500	10	660	0.5	0	0
4	67	2	4000	10	330	0.5	0	0
4	68	2	3600	10	360	0.5	0	0
4	69	2	4000	50	600	30	0	5
4	70	2	3750	10	540	0.5	0	0
4	71	2	3858	15	330	3	4	7
4	72	1	2500	10	540	0.5	0	0
4	73	2	3000	10	600	0.5	0	0
4	74	2	3500	0	480	0	0	0
4	75	1	3000	5	480	0.5	0	0
4	76	2	3000	40	600	12	0	7
4	77	2	4500	30	600	2	0	0
4	78	2	3600	5	360	0.5	2	0
4	79	2	6000	5	600	2	4	4
4	80	1	9000	5	720	0.5	0	0
5	81	2	10000	0	300	0	0	0
5	82	2	5000	90	720	70	0	7
5	83	2	8000	10	720	1	3	3
5	84	1	6000	0	600	0	0	0

CLUST	HOUSEHOLD IDENTIFICATION	LCS	INCOME	TTIWRK	ATIWRK	DSTWRK	VEHOWN	MODWRK
5	85	2	6000	7	540	30	2	20
5	86	1	4500	0	300	0	0	0
5	87	2	4500	0	360	0	0	0
5	88	2	11000	10	180	0.5	4	4
5	89	1	4500	0	420	0	0	0
5	90	2	4500	0	420	0	0	0
5	91	1	2000	30	540	20	0	7
5	92	2	3000	0	300	0	0	0
5	93	2	5500	0	360	0	2	0
5	94	2	3000	0	360	0	4	0
5	95	1	4500	0	180	0	0	0
5	96	2	5600	0	300	0	0	0
5	97	2	3500	0	360	0	0	0
5	98	1	4000	0	660	0	0	0
5	99	2	4500	0	660	0	0	0
5	100	2	4000	0	660	0	0	0

APPENDIX F.

PHOTOGRAPHS FROM THE SURVEY AREAS

DAILY ACTIVITY TRAVEL PATTERNS

FIREWOOD COLLECTION AND HEAD LOAD CARRYING

MEMBERS OF THE SURVEY TEAM

APPENDIX G.

LIST OF INFORMANTS

LIST OF INFORMANTS

The following persons provided information and material in connection to the data collection for this research:

[not available in the digital copy of this thesis]