Characteristics of loyal customers for trade chains in the German food retailing

Goetz Olearius, Jutta Roosen

TUM Business School, Marketing and Consumer Research

Alte Akademie 16, Technische Universitaet Muenchen, 85350 Freising-Weihenstephan, Germany

Ph.: +49 8161-71 3972; Fax: +49 8161 71 4501; Email: GOlearius@tum.de

Paper prepared for presentation at the 113th EAAE Seminar "A resilient European food industry and food chain in a challenging world", Chania, Crete, Greece, date as in: September 3 - 6, 2009

Characteristics of loyal customers for trade chains in the German food retailing

Goetz Olearius, Jutta Roosen
TUM Business School, Marketing and Consumer Research
Alte Akademie 16, Technische Universitaet Muenchen, 85350 Freising-Weihenstephan, Germany
Ph.: +49 8161-71 3972; Fax: +49 8161 71 4501; Email: GOlearius@tum.de

Abstract: In this paper customer loyalty will be examined with the help of budget ratios (budget shares). We address the question whether sociodemographic groups differ in their shopping behavior and their store loyalty. Loyalty is analyzed with regard to the ten largest food retail chains in Germany in 2002. It is shown that the loyalty of customers depends on the lifecycle stage of the household and household size for the most part. Older and single households are more loyal than younger families.
Keywords: customer loyalty, food retail chains, store choice, budget ratio.

Introduction

In nearly all areas of the economy the loyalty of the customers plays an essential role for the long-term success of enterprises. Provided that an entrepreneur succeeds in the course of the 'loyalty chain' by turning a satisfied customer into a loyal customer, he can profit from an increased willingness to pay. To identify the loyal customer and to be able to respond to customer needs, a segmentation of customers must be carried out. Segmentation refers to a subdivision of a whole market in single groups of buyers. The identified clusters should be as homogeneous as possible among themselves and at the same time heterogeneous against each other (Wedel, Kamakura 2000; Gendall et al. 2000). Therefore, most often, the group of the loyals is distinguished and non-loyal customers.

The reasons causing loyal behavior are complex. Aspects like prices, quality of products, service, availability of products (product mix depth and width) and reachability of the store are frequently mentioned (Ehrenberg et al. 2000). In most cases it is not possible to identify a single factor, which determines loyalty. In fact a whole pack of factors causes loyalty. The German food retailing sector is characterized by fierce competition. Reichheld (1996) gives a simple causality: "What keeps customers loyal is the value they receive." Loyalty can only be created in the course of time and can possibly fade away some time later as suggested by Oliver (1996). Not to be loyal can equally have several reasons: Discontent can be a reason (e.g. too high prices) or the desire for change by the consumer (variety seeking). Finally a consumer may show lower involvement than the average consumer (involvement).

In this article loyalty is analyzed with regard to the ten largest food retail chains in Germany in 2002. The analysis is based on the panel data set Consumer Scan of the GfK, Nuremberg; for the year 2002. The data reports purchases, expenditures, the retail chain of the purchase and sociodemographic variables of the household. Customer loyalty will be examined with the help of budget ratios (budget shares). The question whether certain sociodemographic groups differ in their shopping behavior and their store loyalty is addressed.

A sales area increase has been observed concurrent with sales stagnation for many years in German food retailing. This has lead to sinking surface productivity (sales/m²) and can be traced back to an exceptionally high competitive intensity. The big German retail chains have been entering new markets abroad, because the home market is saturated. Above all, stagnating consumer spending and a general buying resistance leave little room for entry for new competitors. Instead a concentration process in which the biggest suppliers increasingly win market shares is observed. The management consultancy KPMG forecasts for 2010 that the biggest five chains of the branch will unite three quarters of the food turnover (KPMG 2006). Smaller shops will continue to exit at the current pace. Independent retailers can survive, in particular if they adjust their business to local customer needs and strengthen their convenience and service offers.

One finds the following company types in German food retailing: Discounters, supermarkets, food sales in self-service department stores and hypermarkets, food specialist shops and convenience shops (kiosks, gas stations) (HDE 2004). The importance of the respective formats can be measured by several indicators: Number of stores, selling area, sales shares (A.C. Nielsen GmbH 2007): Especially the discounter format could grow strongly in general retail as well as in food retail. It has won market shares at the expenses of supermarkets and department stores. The best-known discounters in Germany are Aldi and Lidl. Meanwhile 98 percent of the consumers shop more or less regularly within a discounter, and today nearly everybody reaches three or four of these stores within less then ten minutes (GfK Panel Services, Accenture GmbH 2008).

In addition to the dominance of the discounter format, another specific peculiarity in the German food retail is the great importance of retail brands. Retail chains position more and more often their own brands in competition to manufacturer brands. Indeed, from this tendency no direct implications arise for store choice. However, the assortment of goods and therefore possibly also shopping patterns changes.

About store loyalty

In marketing theory, customer loyalty has been an investigation object for a long time. In a first step it is important to define the concept of loyalty. Several attempts to define customer loyalty have been undertaken in the course of time. A basic definition and division in different forms is found at Dick and Basu (1994). Loyalty is measured as the strength of the relationships between an individual's relative attitude and repeat patronage. The authors make a distinction between the relative attitude (mental commitment) and the actual shopping behavior (repeating purchases, repeat patronage). Motivational, perceptual and behavioral consequences arise from cognitive, affective and conative antecedents of relative attitude. Four forms of the loyalty are derived from these considerations:

A) No loyalty is given, if relative attitude as well as repeat patronage is low.

B) Of wrong loyalty (spurious loyalty) is spoken, if only repeat patronage is high, relative attitude, however, rather negative. In this case the customer continues to make purchases in a store, although he is discontented with certain things.

C) Under latent loyalty one understands a behavior where consumers have a positive commitment to a store, but only seldom make their purchases there, e.g. because the business is too distant from the place of residence.

D) In case of real or true loyalty both components hold true. The customer often makes purchases in his favorite store and he has a positive attitude towards that store - he is loyal.

In a second step it is important to clarify the object of loyalty. In the literature the concepts of brand loyalty, vendor loyalty, service loyalty and store loyalty (Dick, Basu 1994) have been discussed. A lot of research deals with the question of brand loyalty. Meanwhile many methods, which measure the strength of brands, have been transferred to other areas and objects of loyalty (Rao 1969). In this article loyalty refers to the store of purchase. It is about the question which retail chains are visited preferentially. Besides, the retail trade chains can be assigned to formats (e.g. discounter, supermarket, self-service department store) and thus a format loyalty can be investigated. Nevertheless on the basis of the available panel dataset the single stores, which are identifiable with an address, are not investigated, but the ten largest retail chains in Germany.

If one limits oneself explicitly to store loyalty, one finds three basic directions in the theory. A good overview about the developed methods is found at Bustos-Reyes and González-Benito (2007). The first theory was developed by Charlton (1973). The author assumes that store loyalty is not a positive characteristic. Rather it is evaluated to be negative and is due to limited resources. The group of loyal consumers is forced to use one store most of the time, because the environment lacks choice, i.e. number of alternatives (Tate 1961), or they are short of money, time and transport possibilities.

A second approach by Carman (1970) is also negative, but for another reason. The loyal buyers show low involvement. They are not interested in advertising and shopping. These people are described as ‘non-shoppers’ and are loyal by default.

A third approach is found in a paper by Dunn and Wrigley (1984). They noted that the growth in size of supermarkets in many countries has changed the patterns of shopping behavior. Dunn and Wrigley found a positive relation between store loyalty and one stop shopping. As a consequence, large-scale retail benefits from the trend towards one-stop shopping by increasing customer loyalty.

There are numerous attempts to measure loyalty. On the one hand, it is possible to ask for the attitude of the customer by means of surveys and thus receive information about internal values driving customer loyalty (e. g., thriftiness, comfort, relation). Customer loyalty and internal values can be examined based on these data. An example for this approach can be found in Huddleston et al. (2004). On the other hand, it is possible to investigate the purchasing behavior. Since in the data available attitude was not measured, this paper will examine behavior only. With the help of the following categories store loyalty is measured: Repetition of purchases in the main store, number of stores considered, percentage of total expenditure made in the main store, store switching frequency. These aspects of the shopping behavior

are often summarized into the Enis-and-Paul-Index. It consists from patronage measures, budget measures and switching measures (Enis, Paul 1970 as cited in Knox, Denison 2000). The budget ratio indicator was developed by Cunningham in 1961. The budget ratio is measured by dividing the expenditures of a household in a store by total expenditures. Thus one receives a relative measurement and recognizes which store has the highest expenditures shares. This store is then marked as "first store". As long as more than 50 per cent are spent in the first store, a household is classified as loyal or otherwise as non-loyal. Like Cunningham also East, Harris, Lomax and Willson (1995) apply the budget ratio of the first store to measure loyalty. The loyalty is ascribed to the individual consumer and not to the retailer or the retail trade chain. Studies from different countries and at different times are hardly comparable, because the living conditions change permanently. Already the distribution of the company types differs from country to country. Besides, there are always also methodical specific peculiarities, so that even contradicting results can become visible with a comparison.

Data and Methods

We use the GfK panel data ConsumerScan for the year 2002 and focus on the purchases of dairy products (e.g. milk, cream, butter and yoghurt). With this panel data analysis it is not about the behavior of single persons, but about statistical trends. In order to guarantee, that households continuously took part in the panel, households with less than 10 purchases during the year and no purchase in January or December in 2002 were excluded. The purchases of the 13 744 remaining households were aggregated to annual expenditures by retail chains and households.

A multinominal logistic regression was applied. This is a non-linear approach, resulting as the generalization of a binary logistic regression. The dependent variable is polytom; i.e.: this variable is categorical and has more than two characteristics. In our specific case the dependent variable is chain loyalty to one of the ten major retailers and the explanatory variables are the sociodemographic and geographic characteristics of the households. Four subsets of explanatory variables are considered:

- **Household characteristics:** Age, age (squared), household size, net income, net income (squared), city size;
- **Life Cycles:** Older family with children; Family with child at the youthful age; Older family without child, not working; Single seniors; Younger family with toddlers; Young family / pair without child; Family of middle age without child; Older family without child, working; Young singles; Younger family with school children;
- **Nielsen-Marketing-areas:** Schleswig-Holstein, Hamburg, Bremen, Lower Saxony; Hesse; Rhineland-Palatinate, Saarland; Baden-Württemberg North; Baden-Württemberg South; Bavaria; Saxony-Anhalt, Berlin, Brandenburg, Mecklenburg-Vorpommern; Thuringia, Saxony; North Rhine-Westphalia;
- **Occupational group:** Worker; Self-employed; Independent professions; Employee and civil servant.

In order to measure chain loyalty, we use the budget ratio indicator developed by Cunningham in 1961. The budget ratio is measured by dividing the expenditures of a household in a store through the total expenditures for dairy food. Thus one receives a relative measure, which allows identifying the "first-store" with the highest expenditures. As long as more than 50 per cent are spent in the first store, a household is classified as loyal to that store; otherwise as non-loyal. The mentioned depending variable of the regression equation can take eleven different values:

- 0 = non-loyal households = maximum budget ratio smaller than 50 per cent;
- 1 - 10 = loyal to anyone of the top-ten food retailers, first store with budget ratio greater than 50 per cent.

The multinominal logit model is appropriate to explain store loyalty based on the household characteristics, life cycles, Nielsen-marketing-areas and the occupational group of the household head. The model estimates the probability for household *i* to belong to category *j* (see below) (Greene 2000, pp. 875-879):

$$\Pr(Y_i = j) = \frac{e^{ß_j' x_i}}{\sum_{k=0}^{11} e^{ß_j' x_i}} \qquad \text{j (store loyalty) = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10}$$

The independent variables age and net income are used as linear and squared variables. One problem of the regression analysis is the possible multi-collinearity. This is on hand if two independent variables have a very strong correlation with each other. In order to reduce this problem, non-significant variables were excluded in various steps from the regression. The significance of the remaining independent variables, the log-likelihood and the Pseudo R^2 could be clearly improved this way. The regression was calculated through the statistical program STATA and all statements refer to the loyal customers of a trade chain in comparison to the non-loyal customers. One category of the variables life cycle, occupational group and Nielsen-Marketing-areas were excluded as controlling variables respectively.

Analysis and Findings

A household spent on average 76.89 Euros on dairy products in the year 2002. On the average, more than two persons live in a household, the average age is 47 years and average income is slightly above 2000 Euros. Further descriptive statistics can be found in the appendix (table A1). 11375 out of 13744 households surpass the 50 per cent limit regarding the budget ratio. Thus there is a first store for 83 per cent of all households. The average budget ratio for the ten retail trade chains is listed in table 1. The values fluctuate between 74.13 and 65.76 %. However a difference between formats is not discernible. Consequently the store loyalty does not depend on the format, but rather it should be found on the level of the retail trade chains. The average value is at 71.43 per cent. This means: On average 71.43 per cent of all expenses are done in the main retail chain (first store) and hence only 28.57 per cent in other (ancillary) trade chains. An almost identical result is obtained e.g. in Enis and Paul (1970). In the United

States shoppers spent 70.1 % at their main trade chain. Contrary to all statements that the loyalty within the retail trade would gradually decrease, the data available indicate a high customer loyalty in the area of dairy products.

Table 1: Average budget ratio.

List of precedence	Average Budget Ratio	Retail format
1	74.13	Discounter
2	68.82	Discounter
4	71.25	Discounter
5	70.57	Discounter
9	67.76	Discounter
3	71.14	self-service department store
6	72.78	self-service department store
10	73.03	self-service department store
7	72.16	Supermarket
8	72.65	Supermarket
-	71.43	Mean budget ratio

Source: GfK Panel Data 2002; own calculation.

The detailed results of the multinomial logistic regression are presented in table 2: If one looks first only at the significance of the results, it appears that the variables age, age squared, net income and city size are almost always significant at a significance level of ten percent. In the second group of variables, the life cycles, one finds frequently significant results with the categories young singles, younger families with toddlers and single seniors. In the next two groups, the Nielsen-Marketing-areas and the occupational groups, most estimated parameters are non-significant.

In the next step the effect strength is examined. With the multinominal logistic regression the effect strength can be given in different way: Either as odds ratio or as a relative risk ratio. The relative risk ratio is a more intuitive measure of effectiveness and is used here. It usually means the multiple of risk of the outcome in one group (loyal to a retail chain) compared with another group (non-loyal) (Lee 1994). Coefficients smaller than one indicate a negative influence. The likelihood of non-loyal behavior is increased in this case. A positive influence is given, if the coefficient is greater than one. This signifies: The likelihood to be loyal is high.

Table 2: Relative risk ratios estimated in the multinominal logit model

Retail format	**D**	**D**	**D**	**D**	**D**	**DS**	**DS**	**DS**	**S**	**S**
List of precedence	**1**	**2**	**4**	**5**	**9**	**3**	**6**	**10**	**7**	**8**
Age	0.966	0.909	0.951	0.894	0.941	0.930	0.927	0.923	0.949	
Age (squared)	1.000	1.000	1.000	1.000	1.001	1.001	1.001	1.000	1.001	1.000
Net income	1.000	1.000		1.000	1.000	1.000	1.000			1.000
City size		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Older family with children										
Family with child at the youthful age				1.974	1.498	1.676				
Older family without child, not working					1.890					
Single seniors	1.799	2.656	1.499	2.382	2.665	1.576			1.963	1.682
Younger family with toddlers		0.505				0.789	0.696	0.663	0.718	
Young family / pair without child					1.774		0.448			
Family of middle age without child					1.556	1.371				
Older family without child, working				2.309	1.939	1.690				
Young singles	1.530	2.172	1.411	3.024	2.290			2.240	1.615	1.871
Younger family with school children										
Schleswig-Holstein, Hamburg, Bremen, Lower Saxony					1.319	1.393	1.406	1.409		
Hesse				0.606		1.332				
Rhineland-Palatinate, Saarland							1.789			
Baden-Württemberg North							1.725			
Baden-Württemberg South		1.382			1.467		1.582			
Bavaria							2.095			
Saxony-Anhalt, Berlin, Brandenburg, Mecklenburg-Vorpommern			1.232			1.218				
Thuringia, Saxony						1.247	1.736			
North Rhine-Westphalia										
Worker					0.781					0.802
Self-employed										
Independent professions	0.771			0.541		0.646				

Employee and civil servants										
Retail format	**D**	**D**	**D**	**D**	**D**	**DS**	**DS**	**DS**	**S**	**S**
	D = Discounter					DS = self-service department store			S = Supermarket	
		Excluded								

Source: GfK panel data 2002; own calculation.

The table only reports the relative risk ratios of the significant parameters. Full result tables are available from the authors upon request.

It can be noticed, that the effect size is very small in the first group (age, net income and city size). Age has a U-term effect on loyalty. In case of the life cycle it is clearly visible that single-households (young singles and single seniors) belong to the most loyal customer groups of the panel. This strengthens the u-shaped effect of age on loyalty. Such age-dependent behavior could be the consequence of a lack of time, since purchases are to be done by a single member of the household. In case of the single seniors the main reason regarding the choice of the store can be found in a certain routine and a rather low need for change. The lowest loyalty is visible at the group of younger families with small children. The effect size is continuously negative. Obviously this group puts a high value on change regarding the choice of the trade chain.

If one examines the table of life cycles not line-by-line (horizontal), but column by column (vertical), it is visible, that the food retailer 9 is more often able to convince loyal customers from different life cycles for a purchase in his stores than others. All coefficients - except one coming from Hesse - of the Nielsen marketing areas are positive. As four retailers can show a positive value in the northern areas (Schleswig-Holstein, Hamburg, Bremen und Lower Saxony), probably the North belongs to the more loyal areas. A reason is may be found in low population densities and shopping opportunities. However it remains in question whether allocation and aggregation of different federal states is not too imprecise as, e. g., metropolitan and rural areas are mixed in these states.

Regarded in a vertical perspective food retailer 6 attracts attention. Obviously he succeeds well in gaining loyal customers in the whole federal territory. All significant values of the occupational groups are negative and thus indicate a high probability of non-loyal purchasing behavior compared to employees and civil servants. However individual categories were gathered rather undifferentiated and heterogeneous. Due to this a general statement seems not to make sense. In the present times the occupational choice apparently does not influence the purchasing location anymore.

To check the robustness of the results obtained here for dairy products, a further multinominal regression was conducted for the product category “convenience products” and the same sociodemographic variables. The results resembled those for the category of dairy products reported here. Thus one can assume that the results are not dairy-product-specific, but possess a general validity.

In literature one can find a large range of results. Enis and Paul (1970) and Wrigley (1984) ascertained that loyalty is to due to a small income. This thesis can neither be confirmed nor rejected by us. Popkowski, Leszczyc and Timmermans (1997) discovered a connection between store loyalty and the hours worked by male and female. Goldrick and Andre (1997) remarked that married couples are more loyal than singles. East et al. (1997) combines a sinking loyalty with rising age. In our investigation such a connection between age and loyalty cannot be proven. Obviously more can be explained with the help of the life cycles: Families with toddlers – in contrast to families with children at youthful age - obviously attach great importance on food diversity and high-quality nutrition. Therefore they may visit different trade chains.

Conclusions

The aim of this research was to analyze the characteristics of loyal and non-loyal customers in the German food retail market. A certain number of antecedents of loyalty have been identified and investigated in the literature, but the theory still shows a number of weaknesses. Survey results in general allow for the analysis of attitudes or behavior, but rarely both variables are measured in a precise way. Here we analyze panel data on shopping behavior. A differentiation of true and wrong loyalty is hence not possible. Nevertheless, shopping behavior can be considered and with this restriction different results can be summarized: Unexpectedly small is the effect size of the variables age, income and city size. More explanation content is given by the lifecycles. Here it has to be noted that age and life cycle categories partly measure the same dimension. The results show that single-person households differ clearly from the families. Singles are specific loyal and younger families with toddlers are rather disloyal in store choice. Probably these families and multi-person households are not as reduced and limited in shopping resources (time and mobility) as single households. Therefore one could regard the results of the investigation as confirmation of the theory of Charlton (1973). In addition, the results show that hybrid shopping behavior is pervasive in German food retailing in that different store types and formats cannot be attributed to specific households. Single professional groups cannot be attributed to specific store types. In total it can be concluded that there are many heterogeneous buyer groups, however certain trends are clearly visible.

Acknowledgment

The authors gratefully acknowledge financial support from the German Research Foundation (DFG). The authors wish to thank the GfK Panel Services for the excellent panel data quality.

References

A.C. Nielsen GmbH (2007): Handel und Verbraucher in Deutschland. From: http://www.acnielsen.de/pubs/documents/Universen07.pdf; (accessed June 01, 2009).

Blank, O. (2004): Entwicklung des Einzelhandels in Deutschland; Der Beitrag des Gebietsmarketings zur Verwirklichung einzelhandelsbezogener Ziele der Raumordnungspolitik; Bamberg.

Bustos-Reyes, C. A.; Ó. González-Benito (2007): Store and store format loyalty measures based on budget allocation. In: Journal of Business Research, Vol. 61, 9, p. 1015-1025.

Carman, J.M. (1970): Correlates of brand loyalty. In: Journal of Marketing Research, Vol. 7, p. 67-76.

Charlton, P. (1973): A review of shop loyalty. In: Journal of the Market Research Society, 15, 1, p. 35-51.

Cunningham, R. M. (1961): Customer Loyalty to Store and Brand. In: Harvard Business Review, 39, 11-12, p. 127–137.

Dick A. S., K. Basu (1994): Customer Loyalty: Toward an Integrated Conceptual Framework. In: Journal of the Academy of Marketing Science, 22, p. 99–113.

Dunn, R.; N. Wrigley (1984): Store loyalty for grocery products: an empirical study. In: Area, 16, 4, p. 307-314.

East, R.; P. Harris; G. Willson; W. Lomax (1995): Loyalty to Supermarkets. In: International Review of Retail, Distribution and Consumer Research, Vol. 5, p. 99–109.

East, R.; P. Harris; W. Lomax; G. Willson; Perkins, D. (1997): First-Store Loyalty to US and British Supermarkets. In: Kingston Business School Occasional Paper Series, No. 27, p. 1-14.

Ehrenberg, A. S. C.; N. R. Barnard; B. Sharp (2000): Decision models or descriptive models? In: International Journal of Research in Marketing, 17, 2-3, p. 147-158.

Enis, B. M.; G. W. Paul (1970): Store Loyalty as a Basis for Market Segmentation. In: Journal of Retailing, 46, 3, p. 206–208.

Gendall, P.; Hoskyn, K.; Hoek, J.; East, R. (2000): Determinants of Grocery Store Loyalty in New Zealand. In: ANZMAC 2000 Visionary Marketing for the 21st Century, p. 402-405.

GfK Panel Services, Accenture GmbH (2008): From http://www.accenture.com/NR/rdonlyres/E2875007-F6AD-4F93-AFDF-F36A1211029A/0/Discounterstudie.pdf; (accessed June 01, 2009).

GfK Panel Data (2002): GfK ConsumerScan Panel Data.

Greene, W. H. (2000): Econometric analysis (4th Ed). Upper Saddle River, NJ: Prentice Hall.

Huddleston, P., Whipple, J., van Auken, A. (2004): "Food store loyalty: application of a consumer loyalty framework", Journal of Targeting, Measurement and Analysis for Marketing, 12, 3, p. 213-230.

Knox, S. D.; Denison, T. J. (2000): Store loyalty: its impact on retail revenue. An empirical study of purchasing behaviour in the UK. In: Journal of Retailing and Consumer Services, 7, 1, p. 33–45.

KPMG (2006): Consumer Markets & Retail; Trends im Handel 2010. From: http://www.kpmg.de/docs/trends_im_handel_2010_de.pdf; (accessed June 01, 2009).

Lee, J. (1994): Odds Ratio or Relative Risk for Cross-Sectional Data? In: International Journal of Epidemiology, 23, 1, P. 201-203.

McGoldrick, P. J.; A. Andre (1997): Consumer misbehaviour: Promiscuity or loyalty in grocery shopping. In: Journal of Retailing and Consumer Services, 4, 2, p. 73-81.

Popkowski Leszczyc, P. T. L.; H. J. P. Timmermans (1997): Store Switching Behavior. In: Marketing letters, 8, 2, p. 193-204.

Rao, T. R. (1969): Consumer Purchase Decision Processes: Stochastic Models. In: Journal of Marketing Research, Vol. 6, p. 321–329.

Tate, R.S. (1961): The supermarket battle for store loyalty, Journal of Marketing, 25, p.8-13.

Wedel, M.; W. A. Kamakura (2000): Market Segmentation*:* Conceptual and Methodological Foundations; Dordrecht.

Appendix

Table A1: Descriptive statistics (N=13 744).

Variable	Mean	Std. Dev.	Min	Max
Amount of Sale (Euro-cent)	7689.177	7808.451	25	87981
Household size	2.540	1.239	1	8
Budget ratio	71.961	20.458	21.716	100
Age (Years)	47.353	15.520	17	72
Net income (Euro / per month)	2049	850.880	250	4125
City size	201528	343755.2	1800	1200000
Older family with children	0.071	0.003		
Family with child at the youthful age	0.109	0.003		
Older family without child, not working	0.049	0.002		
Single seniors	0.209	0.004		
Younger family with toddlers	0.170	0.005		
Young family / pair without child	0.071	0.002		
Family of middle age without child	0.047	0.003		
Older family without child, working	0.062	0.003		
Young singles	0.079	0.003		
Younger family with school children	0.133	0.005		
Schleswig-Holstein, Hamburg, Bremen, Lower Saxony	0.127	0.004		
Hesse	0.179	0.004		
Rhineland-Palatinate, Saarland	0.090	0.003		
Baden-Württemberg North	0.065	0.003		
Baden-Württemberg South	0.061	0.003		
Bavaria	0.079	0.003		
Saxony-Anhalt, Berlin, Brandenburg, Mecklenburg-Vorpommern	0.117	0.004		
Thuringia, Saxony	0.168	0.004		
North Rhine-Westphalia	0.113	0.004		
Worker	0.378	0.006		
Self-employed	0.158	0.004		
Independent professions	0.505	0.006		
Employee and civil servants	0.026	0.002		