

1990

# Factors Underlying The Use Of Information Sources In Government Institutions In Nigeria

Mutawakilu Adisa Tiamiyu

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**FACTORS UNDERLYING THE USE OF INFORMATION SOURCES IN  
GOVERNMENT INSTITUTIONS IN NIGERIA**

by

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**School of LIbrary and Information Science**

**Submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy**

**Faculty of Graduate Studies  
The University of Western Ontario  
London, Ontario  
December 1989**

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## ABSTRACT

The study examined the relationships between the use of information sources by civil servants and the characteristics of their work, the organizational environments within which they seek information, and the characteristics of the information sources.

The study was based on a survey of senior civil servants in eleven ministries in seven states of Nigeria. In addition, library managers in eight of the ministries were interviewed and published documents about the ministries were analyzed.

Analyses revealed that civil servants use more information sources for complex work activities than for less complex activities. Also, direct relationships were observed between the use of certain external information sources (especially, consultancy reports and conference/workshop papers), and the complexity of, and the level of user discretion in the activities. However, for internal files, an inverse relationship was found between source use and work complexity and user discretion.

Direct relationships were also found between the use of documentary sources and the availability and adequacy of the sources in the ministries.

The sources most often used by civil servants were those which provide procedural and legal information, and information that enabled civil servants to justify and/or account for official decisions to their superiors.

Relationships were also observed between source use and such attributes of civil servants as the number of years of experience in the civil service, and the frequency of attendance at conferences, courses or inter-ministerial meetings.

Finally, the study identified the nature, information requirements and the relative importance of various work activities in the government ministries, and some problems with the provision of library-based documentary information resources to civil servants performing the activities.

The study clearly sheds light on some of the key correlates of source use in government institutions in Nigeria. Such insight is important to further research on the issue, and to information policy initiatives in government ministries in Nigeria.

**DEDICATION**

**This work is dedicated to**

**Azeez, Mubarak and Aishat,**

**... that you would in your own lifetimes  
surpass the heights that  
I attain in mine.**

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# CHAPTER ONE

## INTRODUCTION AND LITERATURE REVIEW

### PART I: INTRODUCTION

#### 1.1 Objectives of the study

This study is an investigation of some of the factors underlying the use of information and information sources by civil servants in state government institutions in Nigeria. The study is intended to achieve the following objectives:

(1) to evaluate the influence of the nature of the work activities performed by civil servants on their information-seeking behavior;

(2) to evaluate the influence of the availability, adequacy and accessibility of various information sources in state government ministries in Nigeria on the use of the sources by civil servants in the ministries;

(3) to assess the influence of specific attributes of information sources on the use of the sources by the civil servants;

(4) to improve upon and extend the results of previous studies of the use of information and information sources by civil servants in Nigeria; and

(5) to find evidence on which to base recommendations on the design of information systems, services and policies in state government institutions in Nigeria.

### 1.2 The need for research on users in government institutions.

The institution of government exercises a large amount of direct and regulatory control over the disposition of substantial portions of economic resources in all countries. Thus, the public sector provides an important arena for decision-making processes which often have far-reaching repercussions on national economies. Consequently, employees of government institutions constitute an important category of information users whose work-related information requirements need to be assessed and catered to through appropriately-designed information systems, services and policies. From the perspective of the design of such systems, services and policies, the key research questions for both information scientists and professionals are the following: what information is important and necessary to decision-making processes in government institutions? What information systems, services or infrastructures are needed to provide the required information? What specific information services are appropriate for groups of public servants performing different functions, activities or tasks? This study represents an effort to answer these questions in the context of users in state government institutions in Nigeria.

A conclusion often reached in the literature of user studies is that the nature of human information-seeking behavior depends on context. Context is required to define a system of relevances which, in turn, may be used to delimit

the range of rational information-seeking behavior [Roberts, 1982; Wilson, 1984). Among the key contextual factors are the perceptions, attitudes and motives of the human receiver of perceptual and symbolic stimuli (Summers, et al., 1983; Wilson, 1984). Through experience, a human receiver often builds an understanding of his/her environment and uses that understanding to anticipate and/or select information stimuli (Hogarth, 1980), or establish plans for handling various kinds of stimuli (Miller, et al., 1960). Within organizations, it is also often noted that important contexts for human information-seeking behavior are provided by the organizational system, and the specific functions, work activities or tasks within which information is defined, evaluated and used [Taylor, 1981, 1982; Mick, et al., 1980; Wilson, 1984). The interplay and potential influence of these contextual factors on users' information-seeking behavior were succinctly noted by Mick and his associates:

'Individual information behaviors are the product of complex interactions involving personal attitudes, background, role, function, specific task situation, environment, etc..... Given these circumstances, management interventions to change information behavior must be tailored to specific situations; they require a detailed understanding of the dynamics of the organization and the perceptions of both staff and management.' (Mick et al., 1980).

Clearly, a study of the role and use of information in decision-making must begin with the analysis of perceptions by decision-makers as potential producers and users of information. In addition, greater understanding of the factors

underlying information-seeking behavior in organizational settings would be fostered if such perceptions are analyzed within the specific contexts provided by the organizational system, work activities and other environmental factors in the decision-makers's information-seeking situation.

### 1.3 The study

The present study represents an effort to evaluate the relative importance of some of the various contextual factors surrounding the utilization of information sources by civil servants in government institutions. It is based on a survey of perceptions by civil servants in state government institutions in Nigeria about various aspects of their information-seeking situation - official work activities, organizational environments and information sources. The study evaluates the relationships between the extent to which such civil servants depend on various information sources and the characteristics of

(i) the work activities that they do (for example, the amount of discretion that the activities allow);

(ii) the organizational environments within which they seek information (in particular, the availability, adequacy and accessibility of information sources within such environments);

(iii) the information sources (for example, the extent to which the sources provide various types of information);

(iv) the civil servants themselves (for example, the position of the civil servant in the organizational hierarchy of the ministry).

#### 1.4 Rationale and background of the study

The study was motivated by two main factors - the need to enhance knowledge about the factors underlying the use and non-use of information sources in organizational environments, and the need to improve upon the information base for designing information systems, services and policies for public servants in Nigeria.

##### 1.4.1 Enhancement of knowledge about the factors underlying information-seeking behavior in organizations.

The study evaluates some important hypotheses about the factors underlying the use of information and information sources. Among these factors are the complexity of work activities, the amount of discretion that users have in doing the activities, the accessibility of information sources, the accuracy and brevity of information sources, and the extent to which various sources provide directory, research, statistical and other types of information. In addition, the study involves some exploratory analyses of the relationships between the use of various information sources and certain characteristics of users such as the number of in-service courses and conferences that the user had attended, the frequency with which the user attends meetings, the position



occupied by the user in the organizational hierarchy, etc. Thus the findings of this study will greatly enhance empirical knowledge about the relative importance of the contextual factors associated with information-seeking behavior in organizations.

Another valuable aspect of the study derives from the emphasis that was placed on investigating the nature of the work activities that civil servants perform. This entailed the identification and labelling of some of the main work activities performed within civil service environments, the frequency with which the activities are performed, and the information requirements and outputs of the activities. Clearly, knowledge about these aspects of the work situation of Nigerian civil servants is important not only for understanding their information-seeking behavior and how information systems may be designed for them, but also for understanding the information-seeking behavior of users in other contexts.

#### 1.4.2 The design of information systems for civil servants in Nigeria.

During 1977-80, a study of the processes of information dissemination to, and utilization by policy-makers in Nigeria (hereafter referred to as the 'IDUPOM project') was undertaken by Wilson Aiyepoku under the auspices of the National Library of Nigeria. To date, the IDUPOM project is the only major research that has been undertaken with respect to the

information-seeking behavior of civil servants in Nigeria. The primary objective of that project was to provide information about the state of information consciousness and utilization by users in public service institutions in Nigeria. Various aspects and findings of the project are reported in the literature (Aiyepku, 1978, 1980, 1982a-f, 1983).

From the perspective of the present study, one important finding of the IDUPOM project is that in-house memoranda, personal contacts, government documents, newspapers and magazines were the most important sources regularly consulted by respondents (Aiyepku, 1982b). High proportions of respondents also reported consulting books and monographs and conference proceedings. In the project, respondents were required to report the frequency of their previous utilization of various sources from the perspective of a general 'policy-making' context. Thus, it is not clear whether the reported consultations of various sources were to enable the making of specific decisions, the performance of specific work activities, or to satisfy a respondents' general need for information. Consequently, no clear-cut connections could be made between reported user information-seeking behavior and the design of information systems to support specific policy-making processes or work activities.

Another important (and surprising) finding of the IDUPOM project is that the majority of federal civil servants in Nigeria preferred original, full-length documents to summaries

although there was a reported strong preference for reviews of such documents. As noted by Aiyepku (1982c), these results contradict the findings reported for similar information users in other parts of the world. Though he cautioned against the use of this finding for information system design purposes (1982c), he later conjectures (Aiyepku, 1983) that the reported preference for full-length documents may be due to the absence and/or inadequacy of abstracting, selective dissemination of information (SDI), and other bibliographic services. This finding, as well as Aiyepku's conjecture, merits empirical re-assessment from the perspective of both theory development in the field of user studies and the design of formal information systems for civil servants in Nigeria.

The findings of the IDUPOM project represent important background information on the information situation of policy-makers in Nigeria. However, the project was unable to provide specific information that could be used to design information systems and services for civil servants performing specific functions or work activities. For instance, while the project was able to determine the important sources reportedly used by policy-makers, it left largely unanswered some important questions: which characteristics of various information sources are important from the perspective of civil servant performing specific work activities in specific government ministries or agencies? Are there differences in information-

seeking behavior among users in different ministries in different locations?<sup>1</sup>

In building upon the findings of the IDUPOM project, an effort is made in the present study to analyze the use of information and information sources within the specific contexts of (1) the work activities performed by users and (2) the organizational systems (ministries) within which users work in terms of the opportunities for and constraints on information-seeking behavior. Thus, in the study, specific work activities are identified and information-seeking behavior is subsequently analyzed in terms of the characteristics and information demands of the activities.

Secondly, the study also involves an investigation and analysis of the nature of the documentary information services provided within the ministries. This enables not only an assessment of the influence on information-seeking behavior of the presence or absence of information services in the ministries within which users seek and use information, but also the identification of the factors underlying, for example, the IDUPOM finding that the majority of civil servants in Nigeria tend to prefer original, full-length documents to the summaries of such documents.

---

<sup>1</sup> Indeed, Aiyepku himself notes that such factors as 'policy maker limitations' and the 'definitions of government objectives' are important factors that could best be discussed in the local settings of each government department but that were not investigated in the project (Aiyepku, 1982d).

## PART II: THEORETICAL BACKGROUND.

The study of the information-seeking behavior of users in government ministries is essentially cross-disciplinary. Accordingly, this review integrates perspectives and previous research findings from such fields as user studies, public administration, organizational behavior and management information systems.

### 1.5 The nature of organizational information-seeking environments.

Research in various organizational decision-making environments has shown that the bulk of the decision-maker's information processing activity comprise brief and often fragmentary information exchanges (Mintzberg, 1973; Sproull, 1984; Tagliacozzo, et al., 1971; Wilson and Streatfield, 1977; Wilson, et al., 1979). Moreover, the large and complex scale of operations in most organizations often necessitates the fragmentation of the policy-making process among different decision-makers and departments in the organization (Downs, 1967; Tompkins, 1982).

In many studies of information utilization processes in organizations, researchers have sought to understand how information is brought to bear on the formulation of various policies (e.g., Caplan, et al. 1975; Knorr, 1977; Rich, 1977; Weiss, 1977; Deshpande, 1981). However, the fragmentation of

the policy-making process means that the role of a decision-maker may not extend to all the stages of the policy process; in fact, the contribution of a decision-maker to the formulation of a particular policy may be so small as to appear insignificant or irrelevant. Often, the decision-maker may not be able or willing to pinpoint the nature and extent of his or her role in the formulation of particular policies.<sup>2</sup> Moreover, policy-making entails both policy formulation and policy implementation. Indeed, with the usual fragmentation of organizational processes, many policy-makers spend much of their time implementing rather than formulating policies. The specific role of the decision-maker often determines the nature of the information inputs demanded, and the information and other outputs generated by that decision-maker.<sup>3</sup>

The role of the decision-maker in the formulation and execution of policies is usually exercised through specific

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<sup>2</sup> The decision-maker may want to be seen associated with popular policies and not with unpopular ones. Thus, the danger of role selection by the decision-maker is increased when information-seeking behavior is studied in relation to the formulation of specific policies.

<sup>3</sup> During policy-formulation, the output of a decision-maker may comprise the information and documentation pertaining to policies (e.g., background reports, policy statements and guidelines); during policy implementation however, in addition to the output of information and documentation, services are rendered, projects are implemented, programs are administered and evaluated, etc.

tasks or work activities. Whereas the formulation of a specific policy is often a passing event within an organization, work activities are often performed on a continuous basis, and the user may perform the same activity in relation to different policies. Work activities thus constitute an enduring structural feature of the organizational environment. Accordingly, in this study, the information-seeking behavior of users is analyzed in relation to the specific work activities that they perform in the organizational environment.

#### 1.6 The influence of tasks and task environments on information-seeking behavior.

Two important factors that can influence human information-seeking behavior in organizations are the nature of the task performed by the user, and the task environment (Hogarth, 1980; Mick, et al., 1980; Nisbett and Ross, 1980; Paisley and Hardy, 1980; Wilson, et al., 1979). The task environment can produce information utilization distortions by inducing decision-makers to emphasize only certain kinds of information (Hogarth, 1980).<sup>4</sup> Sproull (1984) notes that the preponderance of oral-based communication exchanges in organizational environments may induce decision-makers to

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<sup>4</sup> From the perspective of a specific task or work activity, the task environment is composed of the immediately surrounding set of other tasks, people, networks and resources which support, and are supported by the task.

emphasize oral and informal information at the expense of documentary and formal information. People tend to form the impression that available information would somehow be pertinent to the task in which they are engaged; thus, and especially in situations where the amount of available relevant information is limited, the effect of irrelevant information grows considerably (Streufert and Streufert, 1978). In other words, the inclination to emphasize and use information from a particular information source may be influenced by the ready availability of the source in the task environment and/or the accessibility of the source to users in the organizational system.

Also, the use of specific information sources may be fostered or inhibited by the dynamics of the task environment. In large organizations, the fragmentation of decision-making processes creates the need for almost continuous communication in order to achieve consensus among the separate individuals, interest groups or departments involved in a given decision process. The need to minimize conflict and reduce equivocality in organizational environments often leads to the utilization of non-controversial information sources and policy options (Downs, 1967). In such settings, users will be more inclined to use sources that provide conflict-resolving and consensus-seeking information than they would other sources (Weick, 1979; Daft and Lengel, 1986). In this respect, information and information sources over which the organization has some



control (in particular, internal sources) are more likely to be seen by users as potentially conflict-resolving than other sources.<sup>5</sup> This suggests that the dynamics of the task environment usually fosters the use of internal sources and inhibits the use of external sources.

The relationship between the nature of organizational tasks or work activities and the use of information and information sources has been empirically studied in various settings (Culnan, 1983; Gifford et al., 1979; Randolph and Finch, 1977; Tushman, 1978). For instance, Culnan (1983) determined that the complexity of a decision-maker's task may necessitate the exploitation of less accessible information sources.<sup>6</sup> However, other researchers (in particular, Wilson and Streatfield, 1977; Wilson, et al., 1979), found that the routine or structured nature of organizational work may induce decision-makers to emphasize officially prescribed, internal and or readily available and accessible sources.

Information sources themselves often differ in the extent to which they provide information that helps users to resolve

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<sup>5</sup> This is because internal sources are less likely than external sources to provide information that would threaten the organization or interest groups within the organization.

<sup>6</sup> Task complexity is often considered to depend both on the degree of uncertainty associated with the inputs (including information) and the procedures for performing the task, and the outcome of the task (Van de Ven and Ferry, 1980).

complex problems. For instance, whereas formal management information systems are best for providing objective facts about a problem, other sources (e.g., committees) are best for achieving consensus among organizational members about the facts of a problem (Daft and Lengel, 1986). Thus, it is expected that the usage of different information sources would vary depending upon the level of complexity of the activity for which information is required.

Related to the complexity of a work activity is the amount of decision-making discretion that the user has when doing the activity. An activity may be organizationally-designed to be performed with varying levels of decision-maker discretion (Van de Ven and Ferry, 1980). The complexity of a work activity and the amount of discretion that the activity allows are often directly related. The more uncertain, unstructured and complex the activity, the less likely it would be that the inputs (including information) or the procedures for doing the task can be prescribed beforehand - thus creating the conditions for the use of discretion. The amount of discretion that may be exercised in performing an activity often determines whether the decision-maker relies exclusively on prescribed sources, or searches for, and experiments with out-of-the-way sources.

The preceding discussion suggests that whereas the characteristics of the organizational task environment tend to foster inward-looking information-seeking behavior, a high

level of work complexity (or user discretion in an activity) tends to engender outward-looking and extensive information-seeking behavior (i.e., the usage of external and/or a wider range of sources). Under such situations, it is reasonable to expect that the counteracting effects of work complexity on inward-looking information-seeking behavior (caused by the characteristics of the task environment) would be greatest with respect to complex activities. In other words, one would expect that in highly complex activities more sources would be used, and external sources would be emphasized more than would be the case in less complex activities. The following three hypotheses are suggested:

Hypothesis 1: The number of sources depended upon for information by users performing activities that are the most complex or that allow much user discretion would be greater than the number of sources depended upon by users performing activities that are the least complex or that allow little user discretion.

Hypothesis 2(a): In activities that are the most complex or that allow much user discretion, external information sources will be depended upon for information more often than they would be in activities that are the least complex and that allow little user discretion. Conversely,

Hypothesis 2(b): internal sources will be depended upon for information more often in the latter group of activities than they would be in the former group of activities.

As noted earlier, the inclination of users to emphasize information from a particular source may be influenced by the ready availability of the source in the task environment. The study of the influence of the availability and accessibility

of sources on information-seeking behavior has attracted a lot of research effort. However, the influence of the location and accessibility of information sources on information use by decision-makers has previously been investigated largely in the context of business organizations and research laboratories (Allen, 1977, Culnan, 1983, 1985; Allen and Gerstberger, 1967; O'Reilly, 1982; Rosenberg, 1967). In particular, Allen and Gerstberger determined that the accessibility of sources (in both physical and social terms) ranked higher as a factor influencing source utilization than the quality of the information that could be obtained from the sources. This finding suggests that the accessibility of sources to users often engender user familiarity with, and thus greater user preference for and use of the source. Thus, the following hypothesis is suggested:

Hypothesis 3: There will be a direct relationship between the extent to which a user depends on a source for information and the availability, adequacy, and accessibility of the information source.<sup>7</sup>

#### 1.7 The influence of the characteristics of information sources on information-seeking behavior.

Classical objectivist approaches to the analysis of decision-making processes tend to assume that information is

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<sup>7</sup> The adequacy of a documentary source is defined in the study as the availability of the source in sufficient number and variety to meet the information needs of users.

acquired by decision-makers in order to reduce uncertainty (Shannon and Weaver, 1959; Tushman and Nadler, 1978). In fact, some writers define information in terms of the reduction in uncertainty (Galbraith, 1977; Hirshleifer, 1973; Marschak, 1971). The implication is that information sources would be used only if they provide relevant, specific and accurate information that helps users to increase their understanding of problem situations. Set within the objectivist framework is the notion that certain objective characteristics of the sources themselves can be used to explain the use or non-use of the sources. One of such characteristics of sources is the subject content of the information provided by a source relative to the subject content of the information required by users in a specific problem situation (Gallagher, 1974; Streufert, 1973; Zmud, 1978). Most library and information systems are designed from such perspectives.<sup>8</sup>

A second important characteristic of sources is the structural-linguistic format in which information is presented (Zmud, 1978). Thus, and in accordance with Zipf's principle of least effort (Zipf, 1949), some information sources may be used more often than other sources because of the brevity with which they present information. A third important characteristic of sources is the extent to which they provide

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<sup>8</sup> For example, the notion of the relevance of the information, facts or documents that are retrieved in answer to a user's query is primarily derived from that perspective.

accurate information (Gallagher, 1974; Zmud, 1978). The objectivist approach to the study of information-seeking behavior suggest the following hypotheses about such behavior:

Hypothesis 4: There will be a direct relationship between the extent to which a user depends on an information source and the extent to which the source provides information that is relevant and/or specific to the activities of the organization in which the user works.

Hypothesis 5: Users doing a work activity will depend more on the information sources that best provide the type(s) of information which they require in the activity than they would on other information sources.<sup>9 10</sup>

Hypothesis 6: There will be a direct relationship between the extent to which a user depends on an information source and the extent to which the source provides accurate information.

Hypothesis 7: There will be a direct relationship between the extent to which a user depends on a information source and the brevity with which the source provides information.

However, other perspectives about the factors influencing human information-seeking behavior in organizational settings emphasize the influence of socio-political factors. As noted

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<sup>9</sup> The reader should note the subtle difference between hypotheses 4 and 5 which lies in the specificity of the problem context - the activities of the organization in the former hypothesis, and a single activity in the latter.

<sup>10</sup> Type of information is used here in relation to the conceptual or structural nature of the information, Examples are directory information (i.e., information about people, places, institutions, etc.) and statistical information (summary data about the population, finances, output of products or services, etc.).

by Morss and Rich (1980), Zand (1980) and March (1981), the existing pattern of information flow and use in an organization is a vital part of the power base and structure of the organization. Ownership and control of the production and use of information is thus an important factor in information-seeking behavior. From the perspective of public sector organizations in particular, decision-makers may seek to produce their own version of published information as a way of asserting autonomy, maintaining control of information situations, and claiming proprietary ownership of information (Caplan, 1984; Stockfisch, 1982). In this manner, the organization proves that it is current with respect to the information needed to meet its goals, and strategically shields itself from the political and economic risks associated with the use of externally-generated and controlled information (Caplan, 1984; March and Sevon, 1984). Thus, such characteristics of information and information sources as the accuracy and authoritativeness are understood by users in organizations in terms of the organizational control and ownership of the information or information sources.<sup>11</sup> Users may be reluctant to use externally-located or controlled

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<sup>11</sup> The notions of the accuracy and authoritativeness of an information source are related but not equivalent. For example, the information provided by a source may be considered accurate but for various other reasons lack authoritativeness within a particular organizational system or social domain.

sources unless the information serves to foster their interests (Tompkins, 1982; O'Reilly, 1983), or unless they can count on the economic and socio-political disinterestedness of the producers of such information (March and Sevón, 1984). Indeed, the issue of the organizational control of information and information sources is the basis of the two-communities theories that have been advanced to explain the low utilization of social science knowledge by decision-makers, especially those in government organizations.<sup>12</sup> The two-communities theories seek to explain the non-utilization of certain information and information sources in terms of the struggle for influence over policy-making between the institutional systems in which information is produced (academic and private sector systems) and those in which such information is used (public sector and other private sector systems). Accordingly, the desire for power, influence and control by organizational systems and by users within such systems dictates which information sources are used in tasks or work activities (Downs, 1967; March, 1981; March and Sevón, 1984; Stockfish, 1982). Within such a setting, external

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<sup>12</sup> Three other theories - the knowledge-specific, policy-maker constraint, and the information perception constraint theories have also been advanced to explain the low-utilization of social science information by decision-makers. (For discussion of these other theories, see Caplan, et al., (1975) and Aiyepoku (1982a).



information sources are less likely to be preferred and used than internal sources.

Related to the issue of organizational power and organizational ownership and control of information is the notion of the goals of the organizational system in which information is used. Organizations are generally regarded as social systems generative of cultural symbols (Louis, 1980; Robbins, 1984). Robbins (1984) notes that every organization has its own cultural character which is defined by the product of such symbols as its goals, work routines, communication norms, rules and regulations, etc. These symbols provide a framework for expectations by users about organizational support for specific information-seeking behavior (Mick, et. al., 1980; Wolek (1984, 1986).

Organizational goals constitute an important aspect of organizational cultures. Indeed, the desire by decision-makers to maintain control and autonomy over policy-making processes is often regarded as a unique cultural characteristic of public sector bureaucracies (Stockfish, 1982). In particular, and as noted by Pitt and Smith (1981), one of the goals often stressed in public organizations is public accountability - the need to justify and account for policies and programs to the public. Public accountability is tied to issues of the efficiency, legality, consistency and fairness of the activities of the public organization (Pitt and Smith, 1981).

It is also related to the need to show that only the most appropriate procedures and information are used in work activities (Adamolekun, 1983; Adebayo, 1981; Orlans, 1980; Pitt and Smith, 1981). Thus, the ability of a source to provide the information that enables users to justify or account for official decisions is probably another important factor to consider in studies of information-seeking behavior of users in public sector institutions.<sup>13</sup> This suggests the following hypothesis:

Hypothesis 8: There will be a direct relationship between the extent to which a user depends on an information source and the extent to which the source provides information that helps the user to justify or account for official decisions to superiors or to the public.

#### 1.8 Summary of the theoretical perspectives.

The discussions of the preceding sections have highlighted three groups of factors that can influence the use of information and information sources in public sector organizational environments:

(1) The characteristics of the work activities that users perform, in particular, the complexity of work activities, the amount of user discretion that the activities allow, and the information requirements of the activities.

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<sup>13</sup> Information sources that provide the information that enables users to justify or account for official decisions to the public are likely to be considered authoritative even if not very accurate.

(2) The characteristics of the task environment, specifically, the availability and accessibility of various sources in the environment.

(3) The characteristics of the information sources - the subject content, brevity and accuracy of the sources, and the extent to which sources provide information that enables users to justify or account for official decisions.

The key question at this point is: to what extent do these factors explain the use of various information sources in organizational environments? In the study, an effort is made to answer this question in terms of the eight hypotheses stated in the preceding sections.

### 1.9 Definitions of some terms.

The following definitions of terms were used in the study:

**Information source:** a medium (person, document or place) through which potentially-informative messages are sent or received by a user.

**Internal source:** an information source that is exclusively owned and controlled by the user's employing organization. In this study, the employing organization is considered to be the civil service within which the user is employed.

**External source:** an information source that is generally available to users whether or not they work in government ministries or the civil service.

**Accessibility of a source:** the ease in terms of the time, effort or convenience with which a user can obtain and use information from a source when the need arises.

**Adequacy of a documentary source:** the extent to which a type of documentary information source is available in sufficient number and variety to meet the needs of users for information from the source.

**Accuracy of a source:** the factual correctness of the information often provided by a source.

**Authoritativeness of a source:** the extent to which a source provides information that is accepted as appropriate and relevant to a specific social environment.

**Work activity (or task):** The job or work undertaken by a user on a regular basis as part of his/her schedule of duties.

**Work (task) complexity:** the extent of difficulty with which the inputs, procedures and outputs of a work activity can be delineated or specified.

**Organizational (or task) environment:** the surrounding context of persons, institutions, resources, networks and interpersonal relationships within which a user in an organization seeks and uses information.

## CHAPTER TWO

### METHODOLOGY

#### 2.0 Introduction.

In this chapter, the methods and procedures that were used to gather data are described. A questionnaire was administered to senior civil servants in eleven different ministries in seven states of Nigeria. Additionally, semi-structured interviews were held with the managers of libraries in the ministries. Finally, published documents about the functions, structure and operations of the ministries were analyzed to obtain background information.

#### 2.1 Location and population.

The population studied included senior civil servants in the administrative, professional and executive cadres in the civil services of the states of Nigeria.<sup>14</sup>

Nigeria operates a federal political system with three levels of government - the federal, state and local government levels. At the federal and state levels, the structural and institutional arrangement of the governmental systems are very similar. The main features of the systems are shown in Figure

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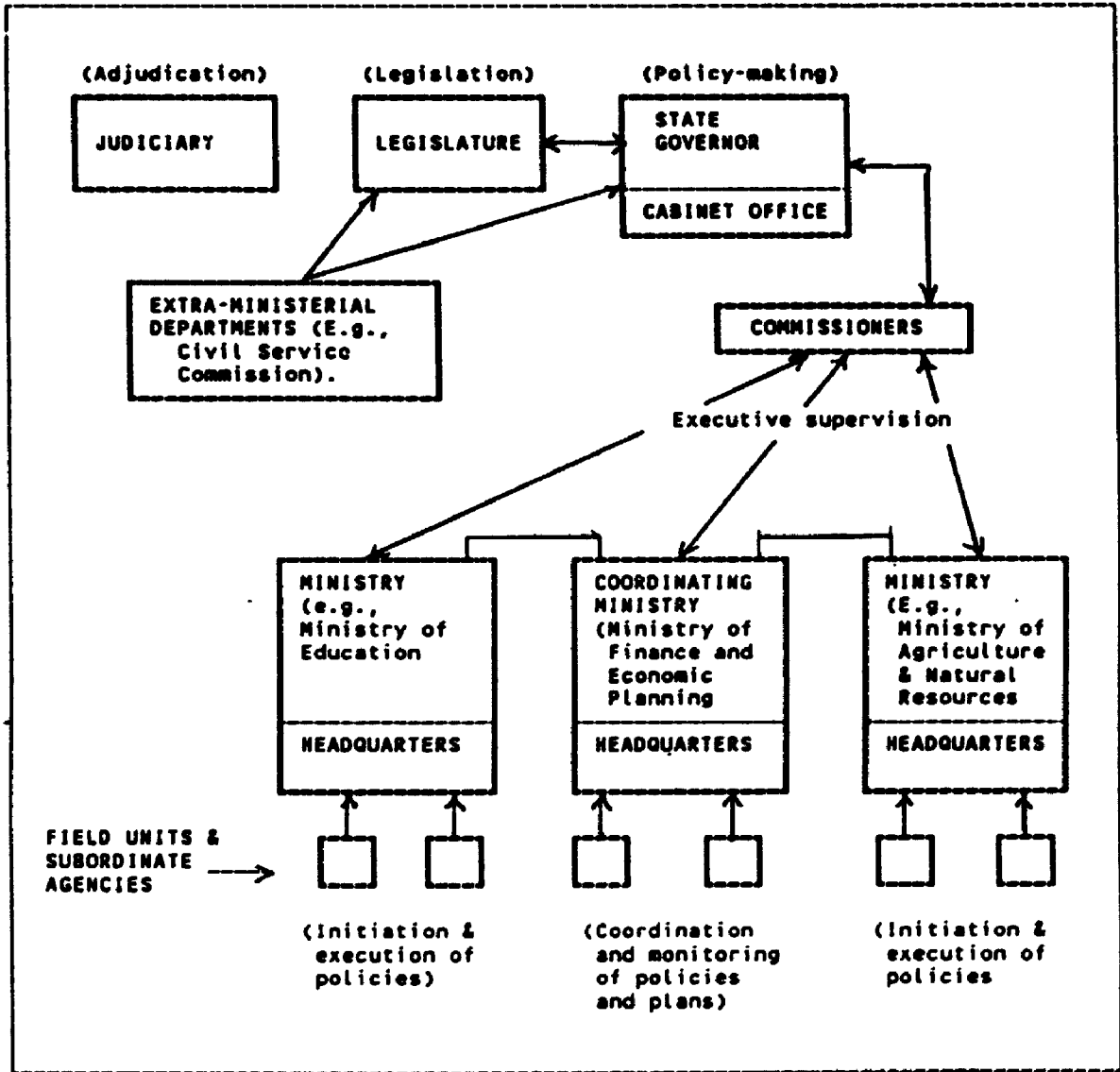
<sup>14</sup> This definition is almost identical to that used in the IDUPOM project described in section 1.4.2 of Chapter 1.

1. The arrangement has the civil service subdivided along functional lines into inter-connected ministries. The ministries are either line ministries that combine policy formulation with policy execution (e.g., the ministries of education), or service ministries that render technical and maintenance services to other ministries and the public (e.g., works), supervisory ministries that control, supervise or assist other ministries (e.g., finance and establishments), or coordinating ministries that work in conjunction with other ministries (e.g., economic development and planning) (Aiyepoku, 1982). However, in the last decade, due to organizational restructuring, the erstwhile separate ministries of finance and establishments and of economic planning and development have been fused into ministries of Finance and Economic Planning (MFEPs). The most recent of such organizational restructuring of the civil services in Nigeria began early in 1988, about nine months before the present study (Federal Government of Nigeria, 1988). Thus, at the time of the study, all of the ministries were undergoing significant organizational changes.

Prior to 1988, the senior staff of the ministries comprised two separate cadres - the general administrative and the professional expert. The general administrative cadre had functional responsibility for the administrative aspects of the ministerial function - matters pertaining to operational expenditure, personnel and administrative procedures. The

**FIGURE 1**

**RELATIONSHIPS AMONG MINISTRIES AND DEPARTMENTS WITHIN STATE GOVERNMENTS IN NIGERIA**



professional expert cadre provided expert or opinion on policy matters of a technical nature - opinion grounded in scientific and/or technological research (Adebayo, 1981). The basis for staff recruitment into, and training of the two cadres had been different, with emphasis being placed more upon technical qualifications and expertise in the professional expert cadres than in the general administrative cadres.<sup>15</sup> However, both cadres reported through heads of divisions to the permanent secretary of the ministry who, in turn, reported to the honorable commissioner (or at the federal level, the honorable minister) of the ministry.<sup>16</sup> The permanent secretary had overall responsibility for the operational direction and

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<sup>15</sup> One of the changes introduced in 1988 is the 'professionalization' of the ministries. This involved the implementation of a restructuring program that emphasized technical and professional expertise in the functioning and staffing of the ministries. Much of the discussion in this section pertains to the situation before 1988.

<sup>16</sup> Apart from the general administrative and the professional expert cadres, other classes of mostly junior civil servants belonged to the secretarial, clerical and maintenance classes. These classes of civil servants were supervised by senior officers in the general administrative cadre.



managerial supervision of the ministry, and was often politically appointed (Adebayo, 1981).<sup>17</sup>

Each ministry was divided into an administration and policy division (staffed mostly by general administrative and executive personnel) and a number of technical divisions and sub-divisions. Most ministries also maintained offices and field units in the headquarters of local governments.

In the study, it was decided to gather data primarily from senior civil servants in the Ministries of Finance and Economic Planning (MFEPs) in the states. The decision was influenced by two factors. By virtue of their statutory function of coordinating and monitoring policies and expenditure plans in various other ministries, the MFEPs occupy a central position within the network of institutions in state and federal governments. Also, the MFEPs often provide professional personnel (accountants, statisticians, planners, revenue officers, etc.) to support the project and financial planning operations of other ministries. Consequently, the information-seeking environments of civil servants in the MFEPs (in terms of relevant information institutions and sources) are probably wider-ranging than for

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<sup>17</sup> Since the introduction of the 1988 Civil Service Reforms, the permanent secretaries are now designated 'Director-generals'.

their counterparts in other ministries.<sup>18</sup> Consequently, civil servants in the MFEPs may be better placed to comparatively evaluate the wide-ranging types of source focussed upon in the study. Secondly, compared to their counterparts in other ministries, civil servants in the MFEPs are, as a group, more office-work oriented. In the Nigerian context, few studies have focussed upon the information-seeking and information requirements of such civil servants.<sup>19</sup> Nevertheless, to enable comparisons across different ministries, data were also gathered from a few other ministries in one state.

The survey covered a pre-selected rather than a random sample of the states of Nigeria. Given the large size of the country and the unreliability of telephone communications, a survey of a random sample of states would have been very expensive and probably inefficient.<sup>20</sup>

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<sup>18</sup> Conversely, in other ministries, relevant information institutions and sources would be more specialized.

<sup>19</sup> In contrast, there have been quite a number of studies of the information-seeking behavior of medical doctors, educationists and agriculturalists employed in various government and quasi-government departments and institutes in Nigeria.

<sup>20</sup> The similarities in the structure, functions and operations of the MFEPs in the states probably implies that there would not have been much difference in the nature of the data gathered from a random compared to a pre-selected sample of the states.

Accordingly, data were gathered from the MFEPs in seven of the 21 states of Nigeria - Kaduna, Kwara, Lagos, Niger, Ondo, Oyo and Plateau states (see Figure 2). Additionally, data were also gathered from the following four other ministries in Kwara State - Agriculture and Natural Resources, Commerce and Industry, Education, and Social Development, Youth and Sports. The states were selected on the basis of proximity to one another and to the University of Ibadan, Nigeria.<sup>21</sup>

## 2.2 Data collection instruments and procedures.

The main data gathering method used in the study was the administration of a 12-page questionnaire (see Appendix 1). The questionnaire was used to gather evaluation data from civil servants about various characteristics of work activities and information sources.

### 2.2.1 The questionnaire.

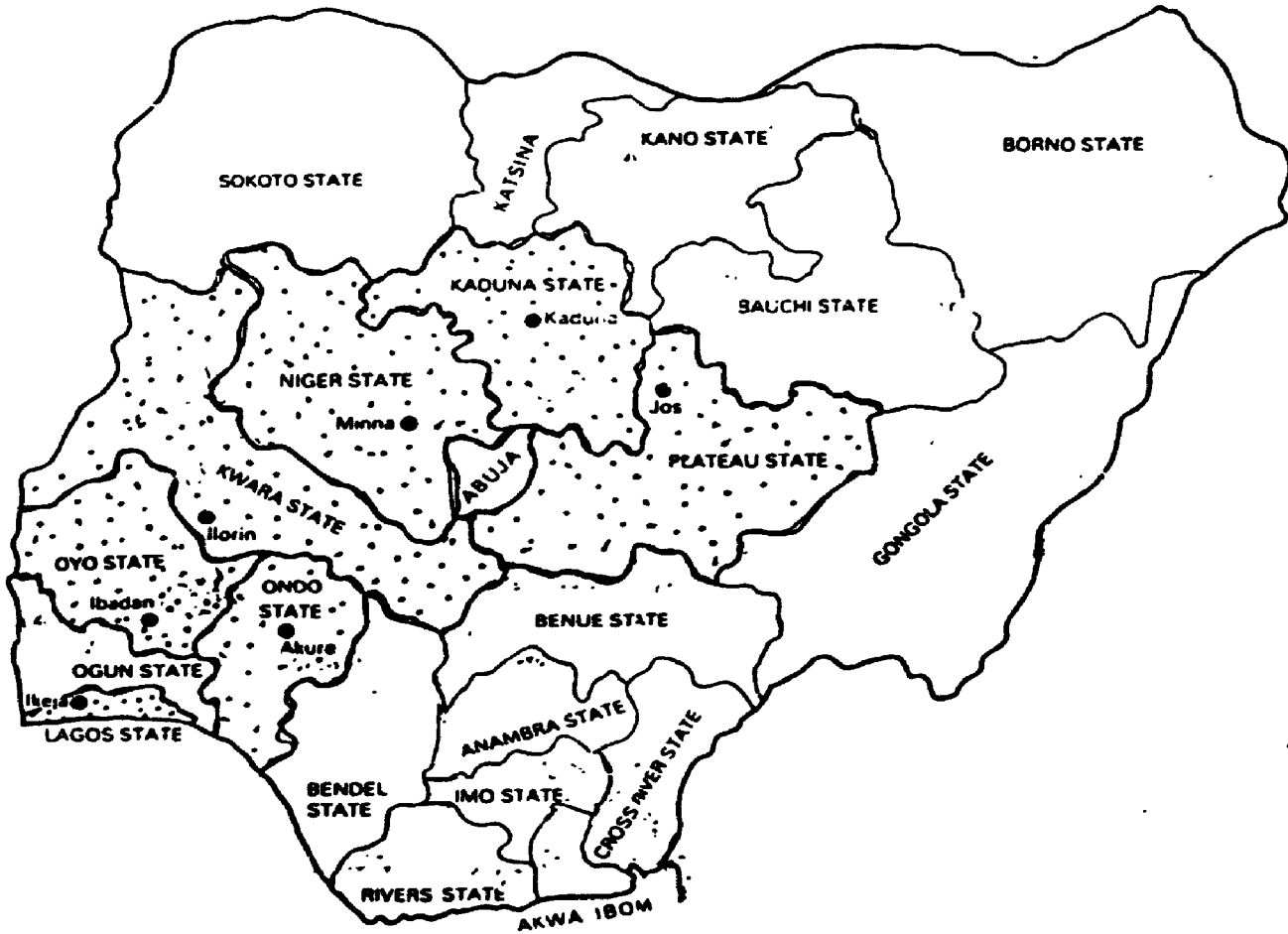
In designing the questionnaire, a number of decisions were made about the types of information, information sources and work activities about which questions were to be asked of the respondents.

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<sup>21</sup> During the survey, communication was handled through the Department of Library, Archival and Information Studies of the University of Ibadan, Nigeria. That arrangement was facilitated by the fact that prior to the study, this researcher had many years of contact with the university.

**FIGURE 2**

**STATES OF NIGERIA FROM WHICH DATA WERE GATHERED**



- States from which data were gathered.
- State capitals where the state ministries and respondents are located.

### Types of information sources.

A survey of the previous studies of users in organizational environments (in particular, Aiyepoku, 1980; Culnan, 1985; Lindsey, 1979; Paisley and Hardy, 1980; Salasin and Cedar, 1985; Tagliacozzo, 1971; Wilson and Streatfield, 1977; Wilson, Streatfield and Mullings, 1979; Wolek, 1986), revealed that the information sources relevant to users in organizational environments can be broadly cross-categorized in terms of the . man/documentary and the internal/external dimensions.<sup>22</sup> Thus, it was decided to include at least one type of source from each of the four cells defined by the two dimensions. The decision was based on two factors, the first of which was the desire to focus upon a sample of relevant information sources in the information environment of civil servants. More importantly, it was considered necessary to ensure adequate contrast among the selected sources such that respondents can easily compare them in terms of specified criteria. Ultimately, the focus of the study was directed to the following twelve information sources:

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<sup>22</sup> The internal/external dimension is defined in terms of whether or not the source is maintained and controlled by and within the user's employing organization. In this study, sources in other ministries in the civil service of the same state are considered to be internal sources.

**Human sources:**

1. Persons in state government ministries
2. Persons in academic and research institutions
3. Persons in private sector organizations

**Documentary sources:**

4. Internal files
5. Government publications
6. Consultancy reports
7. Conference or workshop papers
8. Academic journals
9. Management and professional journals
10. Newspapers and magazines
11. Books
12. Bulletins from the private sector

Three social systems or domains are represented by these sources: the governmental system in which civil servants are employed (sources 1, 4 and 5), the academic and research system (sources 2, 6, 7, 8 and 9) and the private sector (sources 3, 6, 10, 11 and 12).

**Types of work activities.**

The problem of identifying the work activities or tasks upon which to focus can be divided into two: (1) identifying the series of interrelated sub-tasks which can be grouped as distinct work activities, and (2) establishing 'meaningful' labels for the identified activities.<sup>23</sup>

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<sup>23</sup> In this context, meaningful labels for the activities would be those understood by civil servants within their work environment.

It was decided to identify and define labels for work activities beforehand and ask the respondents to react to the activities. A number of reasons underlie the decision.<sup>24</sup> Firstly, the data collection process was intended to gather information about the characteristics of work activities and not to identify all the activities performed by respondents in the organizational setting. Though the strategy of establishing and defining the labels beforehand restricts respondents to the pre-defined activities, it forces them to focus upon and react to the same set of activities. Secondly, a pretest of the questionnaire incorporating the pre-defined activities was undertaken; thus, there was the opportunity to rectify the omission or mislabelling of important activities before the final questionnaire was administered. Finally, prior to the study, this researcher had benefitted from more than ten years of experience working at both the junior and senior officer levels in one of the government ministries; that experience was used to inform the identification and labelling of the activities.

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<sup>24</sup> In some of the previous studies of the activities performed by users in organizations, users were asked to describe in their own words the work activities that they perform. Subsequently, content analyses of the descriptions are performed to identify the main types of activities (Van de Ven and Ferry; 1980; Wilson and Streatfield, 1977; Wilson et al., 1979).

To identify candidate activities and labels for the activities, an analysis was undertaken of the publicly-available documents about the statutory functions of various state government ministries in Nigeria, and about the functions and job descriptions of different divisions and senior level positions in the ministries. Subsequent modifications to the descriptions and labels of the activities were undertaken based on the comments made by expert evaluators of earlier versions of the questionnaire, and by respondents during the pretest of the questionnaire. Eventually, the following twelve work activities were identified:

**Work activities:**

1. Evaluating project proposals
2. Publication of information on projects/plans
3. Implementing and/or inspecting projects
4. Compiling and writing reports on various issues of public interest
5. Gathering statistical data
6. Evaluating field reports or data compiled by other staff members
7. Providing services directly to the public
8. General administrative work
9. Summarizing lengthy reports, memos, etc.
10. Communicating with other departments
11. Attending meetings within the ministry
12. Attending meetings outside the ministry



These were the activities initially presented to respondents in the questionnaire.<sup>25</sup> Though many respondents defined various other activities, very few of the respondent-defined activities were designated by the respondents as major work activities.<sup>26</sup>

Admittedly, the list of activities focused upon in the study may not include all the important activities that civil servants perform in all state government institutions. Moreover, given that the identification and labelling of the activities were not based on a taxonomical analysis, one cannot claim that the activities are completely mutually exclusive.

#### Types of information.

One of the hypotheses of the study is a statement about the influence on the use of various sources of the relationship between the types of information provided by the sources and the types of information required in various work activities. To gather the data for testing that hypothesis, it was necessary to identify and focus upon specific types of

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<sup>25</sup> More detailed labels/descriptions of the activities were provided in the questionnaire (see Appendix 1).

<sup>26</sup> In the questionnaire, each respondent were asked to designate one of the pre- or respondent-defined activities as his/her major work activity on the basis of how frequently he/she performs the activity.

information relevant to the work situation of civil servants. In this respect, previous empirical and analytical studies (in particular, Caplan et al., 1975; Knorr, 1977; Saracevic, 1980; Simmler, 1980; Wilson and Streatfield, 1977) proved very useful. Ultimately, the following five types of information were identified:

(1) Directory information: comprising information about people, institutions, companies, places, etc.).

(2) Research information: comprising the results of scientific and social research, surveys, etc.).

(3) Procedural information: comprising information about methods and procedures by which the user may perform various official activities or functions.

(4) Statistical information: comprising summary statistics about the population, government revenues and budgets, commerce and industry, agriculture, etc.

(5) Legal information: comprising information about laws and statutes, administrative rules, executive or judicial orders, etc.

### 2.2.2 The structure of the questionnaire.

The questionnaire comprised seven sections.

Sections I and II: of the questionnaire sampled the opinions of respondents about various characteristics of work activities.

In section I, each respondent was required to (a) scan some predefined activities and tick all activities that he/she performs (b) specify two other important activities (if any) that he/she performs but that are not listed (c) rank order the activities in terms of how frequently he/she performs them.

Section II further asked the respondent to focus upon a major work activity (the activity performed most frequently) and evaluate the different characteristics of the activity. Questions in the section were intended to gather judgmental data about the following characteristics of the respondent's major work activity:

(i) Frequency with which directory, research, procedural, statistical and legal information are required in the activity.

(ii) Frequency with which directory, research, procedural and statistical information are produced in the activity, and the brevity of the information produced.

(iii) The time often required to complete each occurrence of the activity and the frequency with which the pressure of deadlines is experienced in the activity.

(iv) The extent to which each of twelve different information sources is depended upon for information in the activity.

(v) The level of user discretion associated with the activity. The level of user discretion was measured in terms of responses to the following two questions:

"In doing your major work activity,

(a) how much discretion do you have in decidin on the information sources from which to obtain the information that you need?

(b) to what extent are the information sources that you may use in the activity prescribed by official regulations?"

(vi) The complexity of the activity. The complexity of the activity was measured in terms of resposes to the following four questions:

"In doing your major work activity,

(a) to what extent do you believe that there are clear and specific ways to do the activity?

(b) how clear are you about the sources of information that you can use in the activity?

(c) how easy is it for you to know whether you have done the activity correctly?

(d) how often do difficult problems arise for which there are no immediate or clear solutions?"

These questions were designed to measure the amount of uncertainty associated with the inputs, procedures and outputs

of the activities.<sup>27</sup> Questions (a), (c) and (d) are slightly modified forms of the questions developed by Van de Ven and his associates to measure work complexity in their Organizational Assessment Instrument (OAI) (Van de Ven and Ferry, 1980).<sup>28</sup>

Section III: of the questionnaire sampled the opinions of respondents about the availability, organization and accessibility of various sources in their ministry. Respondents were required to

(a) indicate, whether certain documentary information sources were (i) available in their ministry (ii) available in sufficient number/variety to meet requirements, and (iii) kept in arranged order in the ministry.

(b) to indicate whether they were aware of libraries in other ministries and institutions, and (if so), whether they make use of those libraries as sources of information.

(c) to express opinions about the accessibility to them of various human and documentary sources.

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<sup>27</sup> It is acknowledged here that the aspects of the present study dealing with the complexity of work activities had been significantly influenced by the work of Van de Ven and his associates (Van de Ven and Ferry, 1980).

<sup>28</sup> The original questions had previously been tested with the employees of government (child care and employment) agencies in the United States (Van de Ven and Ferry, 1980).

To enable an evaluation of the consistency of the responses, the accessibility of sources was measured in two ways:

(1) with respect to both human and documentary sources, the frequency with which the respondent encounters problems with a source;

(2) with respect only to human sources, the ease with which the respondent can obtain access to the source; and

(3) with respect only to documentary sources, the amount of time it takes to obtain the source when it is needed.

Sections IV and V: of the questionnaire sampled the opinions of respondents about the extent to which various sources provide directory, research, procedural, statistical, legal, accurate and authoritative information, and about the brevity with which the sources provide information. Respondents were required to rate each of the sources in terms of each of the source attributes.

Section VI: Questions in this section were intended to obtain background information about how respondents perceive other social groups or institutions in their environment. Questions in the section sampled the views of respondents about

(1) the extent to which government institutions and employees contribute to and/or influence the information provided by various documentary sources; and

(2) the extent to which various socio-political groups share viewpoints with, and understand the work situation of civil servants in Nigeria.

Section VII: of the questionnaire requested the respondent to provide some personal data. The questions in the section were intended to gather data on

(i) organization-related personal characteristics of the respondent (state, ministry, division of ministry, and position in the ministry);

(ii) variables measuring the respondent's level of experience, and exposure to information sources outside the ministry (number of years in the public service, number of courses and conferences attended, number of inter-ministerial task forces served, etc.).

Most of the questions in the questionnaire had 5-point Likert-type scales attached to them. For such questions, respondents were required to circle one of the five options on the scale. Only the end points of the scales were labelled; thus, the responses to the questions were clearly ordinal-scaled.

Also, questions which required respondents to compare and rate different sources in terms of the same characteristic were consistently grouped. This was to aid respondents in the task of comparatively evaluating the sources. The same strategy was used for questions that required respondents to compare and rate the extent to which an activity had certain closely related attributes. For example, the questions (and the scales attached to the questions) about the extent to which directory, research, procedural, statistical and legal information are each required in an activity were placed alongside one another.

### 2.2.3 Pretest and expert evaluation of the questionnaire.

#### (a) Pretest of the questionnaire.

The questionnaire used in the study was pretested with senior civil servants sampled from five different ministries in Kwara state - the ministries of Agriculture and Natural Resources (MANR), Commerce and Industry (MCI), Finance and Economic Planning (MFEP), Information, and Works and Transport. Twenty-two pilot questionnaires were given to respondents during the pretest which was conducted between mid-August and mid-September, 1988. Nineteen of the questionnaires were eventually returned.

Though a comments form was attached to the pilot questionnaire, only one respondent provided comments on the form. Other respondents wrote their comments by the side of



the appropriate questions. A short interview, lasting 10-15 minutes was held with each of the respondents who commented on the questionnaire. The dialogue centered on the following issues: (i) unclear comments made by the respondent (ii) whether any questions were ambiguous or sensitive, and (iii) the length of the questionnaire. The interviews revealed that some respondents had problems with the wording of some of the questions, and a few others complained about the unavailability of a 'never' or 'not at all' option on the response scales attached to some of the questions. Though no questions were found to be sensitive, the majority of the respondents complained about the length of the questionnaire. The information gathered during the interviews was later used to modify the questionnaire.<sup>29</sup>

(b) Expert evaluation of the pilot questionnaire.

Concurrent with the pretest, copies of the pilot questionnaire, together with brief explanatory information about the study were given to two 'expert' evaluators for assessment.<sup>30</sup> One of the evaluators has many years of

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<sup>29</sup> Apart from modifications made to the wording of some of the questions, and to the response scales attached to the questions, the length of the questionnaire was reduced from 15 to 12 pages.

<sup>30</sup> The explanatory information given to the expert evaluators is reproduced in Appendix 3.

experience in the civil service of one of the states of Nigeria. The other was the principal investigator in the IDUPOM project which investigated aspects of the information-seeking behavior of public servants in federal government agencies in Nigeria. Both evaluators provided useful comments and both were concerned about the length of the questionnaire.

#### 2.2.4 Administration of the questionnaires.

For sampling purposes, the population of senior civil servants was narrowed to include only those (a) on salary grade levels GL08 or higher, and (b) located in the headquarters of the ministries. The first restriction was imposed because some of the issues covered in the study were likely to be beyond the intellectual level of civil servants on salary levels below GL08.<sup>31</sup> Three factors underlie the second restriction. First, many civil servants posted outside the headquarters are employed in activities that are often very different than those of their counterparts in the headquarters (for example, education officers in the Ministry of Education who are posted to teach in secondary schools). Second, some of the issues covered in the survey pertained to the availability, adequacy and accessibility of sources in the ministries. For civil servants located outside their ministry,

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<sup>31</sup> Such civil servants are non-university graduates and would probably not be able to evaluate some of the information sources focussed upon in the study.

perceptions about such issues would be very vague. Finally, there is the higher cost of conducting a survey on respondents located in remote areas. In the eleven ministries covered in the survey, the estimated population of senior civil servants satisfying the preceding criteria is about 700.

The sampling objectives of the survey were:

(i) to distribute up to 60 questionnaires to prospective respondents in the Ministry of Finance and Economic Planning in each of seven states, and to four other ministries in one state. With an expected average response rate of about 60 percent, this would have fetched a total of about 400 returned questionnaires.

(ii) to ensure that all divisions and organizational levels of each ministry are proportionately represented in the samples.

To achieve these objectives, a high level of control over the distribution of the questionnaires was planned. Thus, during the meetings with ministry officials that preceded the questionnaire administration processes, guidelines were given to contact persons in the various ministries. In practice however, to gain the cooperation of ministry officials who had to approve the research and/or act as contact persons, the procedures had to be varied somewhat to allow for some discretion on the part of the officials. Thus, contacts were asked to use their discretion within the framework of the sampling objectives. To a large extent, the contacts appeared

to have kept within the guidelines for the distribution of the questionnaires; however the return rate varied from division to division within the ministries. This could have resulted as much from variations in the intensity of follow-up processes as from differences in the way prospective respondents in the various divisions of the ministries reacted to the questionnaire.

Moreover, the actual coverage of the survey was lower than was envisaged due to communication problems and the fact that in one of the states, approval for the study was refused. In addition, officials in the ministries were generally reluctant to accept more than 30-40 questionnaires for distribution in their ministries.

A cover letter (Appendix 2) explaining the purpose and other aspects of the study was enclosed with each questionnaire. Almost all of the questionnaires were administered and returned through contact persons in the ministries, and though a self-addressed stamped envelope was included with each questionnaire, very few of the questionnaires were returned through the mail. A small number of the questionnaires were anonymously mailed to some civil servants randomly selected from the staff lists of some of the ministries in Kwara state. The method proved very ineffective

as, and in spite of two reminder notices, very few of the mailed questionnaires were returned.<sup>32</sup>

The survey lasted from late September 1988 through mid-March 1989. Due to the unreliability of telephone communication between the state capitals covered in the study, this researcher had to make three to four round-trips to each of the state capitals during the survey.

#### 2.2.5 Overview of the sampling results.

##### (a) Rates of questionnaire return.

A summary of the survey results are shown in Table 1. A total of 416 questionnaires were distributed. 307 of these were returned, with 274 being usable. Overall, the rate of questionnaire return appears to be adequate - the number of usable questionnaires as a percentage of the number distributed ranged between 36 % for the MFEP in Lagos State and 86 % for the MFEP in Niger State. The overall un-weighted average rate of return is 65.8 % (about 25 usable questionnaires per ministry). This percentage is higher than the 55.2 % rate of questionnaire return recorded by Aiyepku in the IDUPOM project (Aiyepku, 1983).

Table 2 shows the sampling depth achieved during the survey. Overall, the sample of 274 respondents (usable

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<sup>32</sup> It appears that mail-administered surveys may not be appropriate for civil servants in Nigeria.

TABLE 1

## SURVEY AND SAMPLING RESULTS BY STATE AND MINISTRY.

STATE/ MINISTRY	NUMBER OF QUESTIONNAIRES			PERCENTAGE USABLE <sup>1</sup>
	DISTRIBUTED	RETURNED	USABLE	
1. KADUNA MFEP	34	28	23	67.6
2. LAGOS ..	50	23	18	36.0
3. NIGER ..	50	47	43	86.0
4. ONDO ..	19	19	16	84.0
5. OYO ..	45	36	31	77.5
6. PLATEAU ..	42	40	35	83.3
7. KWARA MANR	40	28	28	70.0
8. .. MCI	25	16	14	56.0
9. .. ME	41	25	24	58.5
10. .. MFEP	50	36	31	68.9
11. .. MSWYS	20	9	9	45.0
TOTALS	416	307	274	65.8

NOTES: <sup>1</sup> - Number of usable questionnaires as a percentage of the number of questionnaires distributed.

MANR - Ministry of Agriculture and Natural Resources.  
MCI - Ministry of Commerce and Industry.  
ME - Ministry of Education.  
MFEP - Ministry of Finance and Economic Planning.  
MSWYS - Ministry of Social Welfare, Youth and Sports.

**TABLE 2****POPULATION SIZES AND SAMPLING RATIOS BY STATE AND MINISTRY.**

STATE / MINISTRY	POPULA- TION OF SENIOR STAFF <sup>1</sup>	NUMBER OF USABLE QUESTION- NAIRES	SAMPLING RATIO <sup>2</sup>
	(a)	(b)	(c)
1. KADUNA MFEP	65	23	.35
2. LAGOS ..	82	18	.22
3. NIGER ..	70	43	.61
4. ONDO ..	61	16	.26
5. OYO ..	103	31	.30
6. PLATEAU ..	66	35	.53
7. KWARA MANR	43	28	.65
8. .. MCI	31	14	.45
9. .. ME	60	24	.40
10. .. MFEP	83	31	.37
11. .. MSWYS	19	9	.47
<b>TOTALS</b>	<b>683</b>	<b>274</b>	<b>.40</b>

- NOTES:
- 1 - Comprising senior staff members on salary grade level GL08 or higher and located in the headquarters of the ministry.
- 2 - Column (b) divided by column (a).
- MANR - Ministry of Agriculture and Natural Resources.
- MCI - Ministry of Commerce and Industry.
- ME - Ministry of Education.
- MFEP - Ministry of Finance and Economic Planning.
- MSWYS - Ministry of Social Welfare, Youth and Sports.

**TABLE 3**

NUMBERS OF USABLE QUESTIONNAIRES FROM THE MAIN DIVISIONS OF THE MINISTRIES OF FINANCE AND ECONOMIC PLANNING (MFEPs).

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DIVISION OF THE MFEP	NUMBER OF USABLE QUESTIONNAIRES	
		%
Administration/Policy	17	8.7
Planning/Research	55	28.1
Revenue	37	18.9
Statistics	34	17.3
Treasury	23	11.7
Other divisions of the MFEPs	31	15.3
TOTAL	197	100.0

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**TABLE 4**

**NUMBERS OF USABLE QUESTIONNAIRES FROM VARIOUS PROFESSIONAL GROUPS IN THE MINISTRIES.**

PROFESSIONAL GROUP	NUMBER OF USABLE QUESTIONNAIRES	
		%
Accountants	32	11.7
Administrative Officers	22	8.0
Agricultural Officers	23	8.4
Commercial/Trade Officers	11	4.0
Education Officers	16	5.8
Executive Officers	28	10.2
Planning/Research Officers	56	20.4
Revenue/Tax Officers	31	11.3
Social Welfare Officers	9	3.3
Statisticians	35	12.8
Others	4	1.5
Indeterminate	7	2.6
<b>TOTAL</b>	<b>274</b>	<b>100.00</b>

**TABLE 5**

NUMBERS OF USABLE QUESTIONNAIRES FROM THE MAIN  
FUNCTIONAL DIVISIONS OF THE MINISTRIES.

FUNCTIONAL DIVISION	NUMBER OF USABLE QUESTIONNAIRES	
		%
General administration	40	14.5
Accounting/supplies	34	12.4
Research & Development	119	43.4
External/public operations	73	26.6
Indeterminate	8	2.9
<b>TOTAL</b>	<b>274</b>	<b>100.0</b>

**TABLE 6**

NUMBERS OF USABLE QUESTIONNAIRES FROM DIFFERENT  
LEVELS IN THE HIERARCHIES OF THE MINISTRIES.

LEVEL IN THE HIERARCHY	NUMBER OF USABLE QUESTIONNAIRES	
		%
Top	50	18.2
Upper-intermediate	66	24.1
Lower-intermediate	40	14.6
Bottom	71	25.9
Indeterminate	47	17.2
<b>TOTAL</b>	<b>274</b>	<b>100.0</b>

questionnaires) represents about 40 % of the estimated population of senior civil servants on salary levels GL08 or higher and located in the headquarters of the eleven ministries.

It is also noted that 197 of the 274 usable questionnaires (72 %) were from respondents in the Ministries of Finance and Economic Planning (MFEPs). Table 3 shows a breakdown by the division of the MFEPs of the 197 questionnaires returned by respondents in those ministries.

(b) Representativeness of the sample.

A number of other tabulations of the usable questionnaires highlight the extent to which various sub-populations of the population of senior civil servants are represented in the survey sample. The following variables were used as classification variables: the professional group of the respondent, the position (level) of the respondent in the hierarchy of the ministries, and the main functional divisions of the ministries. Tables 4 through 6 show the breakdowns. Also, civil servants with widely ranging experiences within the services were sampled. The mean number of years spent by respondents in the sample was 14.4 years with a standard deviation of 8.8 years.

### 2.3 Semi-structured interviews.

Interviews were conducted in the Ministries of Finance and Economic Planning (MFEP) in Kaduna, Kwara, Niger, Ondo, Oyo and Plateau states, and in the following two other ministries in Kwara state - the Ministry of Commerce and Industry (MCI) and the Ministry of Education (ME).<sup>33</sup> The interviews were held with the most senior staff member of the libraries of the respective ministries.

The objective of the interviews was to gather information about the nature and organization of published documentary sources in the various ministries covered by the study. Each interview took about thirty minutes and was based on the questions in Appendix 5. Apart from discussions centering on the items in the appendix, the last ten minutes of the interviews were devoted to general open-ended discussion of the problems of providing library-based documentary information services in the ministries. All the interviews were held during the period January through February 1989.

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<sup>33</sup> During the survey, this researcher also visited the Ministries of Agriculture and Natural Resources and of Social Development, Youth and Sports in Kwara State. However, the ministries had no libraries; thus, the interviews centered only on the need for library services in the two ministries.

#### 2.4 Survey of published documentary sources.

Published documentary sources (annual budgets, government gazettes, organizational charts, etc.) were studied to gather useful background information about the structure of the civil services in Nigeria and about the functions, structure and operations of various ministries in the civil service.

## CHAPTER THREE

### ANALYSES AND RESULTS

#### 3.0 Introduction.

This chapter comprises three parts. In part I, the data pertaining to the work activities performed by civil servants are analyzed. First, the relative importance of the activities is evaluated. Then, analyses are performed to investigate the relationships between the use of information sources and certain characteristics of the activities.

Part II begins with the analysis and discussion of the nature of the documentary information resources and services that are available in the ministries. Thereafter, analyses are undertaken to investigate the relationships between source use and perceptions by civil servants of the availability, adequacy and accessibility of the sources in the ministries.

In Part III, analyses are performed to assess the nature of the relationships between source use and various characteristics of information sources, and between source use and some personal characteristics of civil servants.

## PART I

### **THE IMPORTANCE OF WORK ACTIVITIES IN THE MINISTRIES AND THE RELATIONSHIPS BETWEEN SOURCE USE AND THE CHARACTERISTICS OF THE ACTIVITIES.**

In this part, the data are first analyzed to determine the pervasiveness and frequency of various work activities in the ministries. Next, analyses are performed to investigate the relationships between the use of sources and the level of complexity and user discretion associated with the activities. Finally, analyses are undertaken to determine the relationship between source use and the extent to which different types of information are required in the activities.

#### **3.1 The pervasiveness and frequency of various work activities in the ministries.**

##### **3.1.1 Pervasiveness of the activities in the ministries.**

The pervasiveness of a work activity is used here to mean the spread of the activity among the different ministries, divisions of the ministries, levels in the hierarchies of the ministries, etc. In contrast, the frequency of an activity is used here to mean the number of times during a given time period that a civil servant performs the activity. The data pertaining to the pervasiveness and frequency of different work activities in the eleven ministries are summarized in Table 7.

The data show that among the twelve work activities, ATTENDING MEETINGS WITHIN THE MINISTRY and ATTENDING MEETINGS OUTSIDE THE MINISTRY occur in the work schedules of almost all of the respondents. Also important are GENERAL ADMINISTRATIVE WORK and COMMUNICATING WITH OTHER MINISTRIES. In contrast, PUBLISHING INFORMATION ON PROJECTS/PLANS, EVALUATING PROJECT PROPOSALS and PROVIDING DIRECT PUBLIC SERVICES are performed by the fewest number of respondents.

To assess the relative pervasiveness of the activities in the ministries, it is necessary to determine whether the activities are proportionately spread among different classes of respondents. Specifically, it is necessary to determine whether the occurrence of each activity in the work schedules of respondents is independent of the (1) ministry, (2) division of the ministry, (3) hierarchical level, and (4) professional group to which the respondents belonged.

Chi-square analyses reveal that among the four activities that occur most often in the work schedules of the respondents, ATTENDING MEETINGS WITHIN THE MINISTRY and GENERAL ADMINISTRATIVE WORK are not independent of the division of the ministry, hierarchical level or the professional group of the respondent (Table 8). Moreover, COMMUNICATING WITH OTHER MINISTRIES is not independent of the division of the ministry or the professional group of the respondent, and ATTENDING MEETINGS OUTSIDE THE MINISTRY is not independent of any of the four classification variables.



**TABLE 7****PERVASIVENESS AND FREQUENCY OF THE WORK ACTIVITIES IN THE MINISTRIES (ALL STATES).**

<b>WORK ACTIVITIES</b>	<b>PERCENT OF RESPONDENTS INDICATING THAT THEY DO THE ACTIVITY <sup>1</sup></b>	<b>NUMBER OF 1ST OR 2ND RANKS OVER TOTAL RANKS <sup>2</sup></b>	<b>MEAN RANK <sup>3</sup></b>
1. EVALUATING PROJECT PROPOSALS	34.3	60.9	2.94
2. COMMUNICATING WITH OTHER MINISTRIES	57.3	57.8	2.88
3. PUBLISHING INFORMATION ON PROJECTS/PLANS	32.8	31.7	4.09
4. IMPLEMENTING/INSPECTING PROJECTS	40.5	57.9	3.03
5. WRITING REPORTS ON PUBLIC POLICY ISSUES	44.2	47.7	3.69
6. SUMMARIZING REPORTS	49.6	36.7	3.83
7. GATHERING STATISTICAL DATA	50.0	62.2	3.12
8. EVALUATING REPORTS COMPILED BY OTHERS	55.1	63.0	2.88
9. DOING GENERAL ADMINISTRATIVE WORK	64.2	58.2	3.48
10. PROVIDING DIRECT PUBLIC SERVICES	37.6	59.4	3.46
11. ATTENDING MEETINGS WITHIN THE MINISTRY	82.8	38.5	3.75
12. ATTENDING MEETINGS OUTSIDE THE MINISTRY	66.1	25.4	4.47

- NOTES:
- <sup>1</sup> - Number of respondents who do the activity as a percentage of the 274 respondents sampled.
  - <sup>2</sup> - Number of 1st or 2nd ranks as a percentage of the number of different ranks assigned to the activity by respondents who do the activity. Respondents were asked to rank the activities on the basis of how frequently they perform them.
  - <sup>3</sup> - Average of all the different ranks assigned by respondents to the activity.

TABLE 8

RESULTS OF THE CHI-SQUARE TESTS COMPARING GROUPS OF RESPONDENTS ON THE EXTENT TO WHICH THEY PERFORM DIFFERENT WORK ACTIVITIES.

WORK ACTIVITIES	CLASSIFICATION VARIABLE <sup>1</sup>			
	MINISTRY	GROUP	DIVISION	LEVEL
1. EVALUATING PROJECT PROPOSALS	.012	.000	.000	.005
2. COMMUNICATING WITH OTHER MINISTRIES	.462	.000	.000	.425
3. PUBLISHING INFORMATION ON PROJECTS/PLANS	.151	.000	.000	.497
4. IMPLEMENTING/INSPECTING PROJECTS	.002	.000	.000	.000
5. WRITING REPORTS ON PUBLIC POLICY ISSUES	.548	.438	.121	.849
6. SUMMARIZING REPORTS	.029	.000	.000	.608
7. GATHERING STATISTICAL DATA	.581	.000	.000	.447
8. EVALUATING REPORTS COMPILED BY OTHERS	.224	.000	.000	.006
9. DOING GENERAL ADMINISTRATIVE WORK	.087	.000	.003	.001
10. PROVIDING DIRECT PUBLIC SERVICES	.000	.000	.002	.408
11. ATTENDING MEETINGS WITHIN THE MINISTRY	.053	.034	.022	.003
12. ATTENDING MEETINGS OUTSIDE THE MINISTRY	.018	.000	.000	.000
Minimum total sample sizes	250	250	189	250
Degrees of freedom	4	9	7	3

- NOTES: <sup>0</sup> - Table values are the  $X^2$  test probabilities.  
<sup>1</sup> - The classification variables used in the  $X^2$  tables are  
 MINISTRY - Ministry of the respondent.  
 GROUP - Professional group of the respondent.  
 DIVISION - Division of the Ministries of Finance & Economic Planning of the respondent.  
 LEVEL - Level in the hierarchy of the ministry of the respondent.

The categories of these variables are detailed in Appendix 28.



Subsequently, analyses of the chi-square residuals were performed to identify the ministries, divisions, hierarchical levels and professional groups among which particular activities are performed more or less than in other ministries, divisions, levels or groups. The results are shown in Table 9.<sup>34</sup>

#### Differences among the ministries.

As previously noted, with only a few exceptions, the pervasiveness of most of the work activities is similar across different ministries. The few exceptions are as follows.

(i) EVALUATING PROJECT PROPOSALS is more pervasive in the Ministry of Commerce and Industry (MCI) and the Ministry of Agriculture and Natural Resources (MANR) than in the other ministries, and is less pervasive in the Ministry of Education (MOE) and the Ministry of Social Development, Youth and Sports (MSDYS) than in the other ministries.

(ii) IMPLEMENTING/INSPECTING PROJECTS is more pervasive in the MANR than in the other ministries, and is less pervasive in the MSDYS than in the other ministries.

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<sup>34</sup> Due to the limitation of space, only the results in respect of the differences among the ministries and levels in the ministries are discussed here. The results in respect of the differences among the divisions of the Ministries of Finance and Economic Planning, and among the professional groups are summarized in Appendix 12.

(iii) SUMMARIZING REPORTS is more pervasive in the MCI and the MOE than in the other ministries.

(iv) PROVIDING DIRECT PUBLIC SERVICES is more pervasive in the MSDYS and the MCI than in the other ministries, and is less pervasive in the MFEP and the MOE than in the other ministries.

(v) ATTENDING MEETINGS OUTSIDE THE MINISTRY is more pervasive in the MSDYS than in the other ministries, and is less pervasive in the MFEP than in the other ministries.

#### Differences among levels in the hierarchy.

As previously reported, the pervasiveness of the work activities is generally independent of the hierarchical level of the respondents. However, there are a few exceptions as follows.

The analyses reveal that EVALUATING PROJECT PROPOSALS, IMPLEMENTING/INSPECTING PROJECTS, EVALUATING REPORTS COMPILED BY OTHERS and DOING GENERAL ADMINISTRATIVE WORK are less pervasive among civil servants at the bottom of the senior staff hierarchy (those on salary grade level 09 or lower) than for more senior officers. Also less pervasive among such staffers is ATTENDING MEETINGS WITHIN THE MINISTRY and ATTENDING MEETINGS OUTSIDE THE MINISTRY. Indeed, the analyses reveal that these activities tend to be performed more by senior staffers at the intermediate levels (on salary grade levels 10 through 13) than by people at the other (higher or

lower) levels. Finally, GENERAL ADMINISTRATIVE WORK, EVALUATING REPORTS COMPILED BY OTHERS and ATTENDING MEETINGS OUTSIDE THE MINISTRY are more pervasive among ministerial top-notchers (those on salary grade level 14 or higher) than among people at lower levels in the hierarchy of the ministries.

Top-ranking civil servants, like their counterparts in other organizations, generally perform institutional roles that often entail political bargaining for resources and status by such persons on behalf of their institutions (Van de Ven and Ferry, 1980; Pitt and Smith; 1981). Thus, they often undertake not only administrative functions pertaining to policy formulation, but also attend meetings outside their ministries more often than other staffers. Also, in the civil service, status is often directly related to years in service (and thus level of experience): this probably explains why civil servants at the bottom of the senior staff hierarchies (and thus less experienced) seldom perform evaluation activities.

### 3.1.2 Relative frequency with which activities are performed by respondents.

An equally important aspect of work activities is the frequency with which they are performed in the ministries. In other words, how often over time do people perform each of the activities? The number of times that each of the activities was ranked first or second by respondents who do the activity was used to measure the relative frequency with which the

activities are performed in the ministries (Table 7).<sup>35</sup> Using this criterion, the data show that, in declining order, EVALUATING REPORTS COMPILED BY OTHERS, GATHERING STATISTICAL DATA and EVALUATING PROJECT PROPOSALS occur most frequently. In contrast, ATTENDING MEETINGS OUTSIDE THE MINISTRY, PUBLISHING INFORMATION ON PROJECTS/PLANS and ATTENDING MEETINGS WITHIN THE MINISTRY occur least frequently.

### 3.1.3 Summary of the findings.

The main results of the analyses are summarized in Figure 3. From the figure, it would be observed that COMMUNICATING WITH OTHER MINISTRIES and GENERAL ADMINISTRATIVE WORK are widely spread among civil servants, Also, the activities are frequently performed by civil servants. Two other activities, namely, ATTENDING MEETINGS INSIDE THE MINISTRY and ATTENDING MEETINGS OUTSIDE THE MINISTRY, are widely spread among civil servants but occur very infrequently. Finally, EVALUATING PROJECT PROPOSALS, IMPLEMENTING and INSPECTING PROJECTS and PROVIDING DIRECT PUBLIC SERVICES occur frequently, but are not widely spread among civil servants.

Though the twelve activities that were defined, labelled and analyzed in the study are probably not exhaustive, they

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<sup>35</sup> Respondents were asked to rank the activities on the basis of how frequently they performed them. Thus, from the sample of respondents who do an activity, the proportion assigning top ranks to the activity was used as a summary measure of how frequently the activity is performed.

**FIGURE 3**

**CATEGORIZATION OF WORK ACTIVITIES IN TERMS OF Pervasiveness AND FREQUENCY.**

		Pervasiveness of the Activity <sup>1</sup>		
		Below 40 %	40 - 55 %	Over 55 %
FREQUENCY OF THE ACTIVITY <sup>2</sup>	Over 50 %	EVALUATING PROJECT PROPOSALS  IMPLEMENTING/INSPECTING PROJECTS  PROVIDING DIRECT PUBLIC SERVICES	GATHERING STATISTICAL DATA  EVALUATING REPORTS COMPILED BY OTHERS	COMMUNICATING WITH OTHER MINISTRIES  DOING GENERAL ADMINISTRATIVE WORK
	40 % to 50 %		WRITING REPORTS ON PUBLIC POLICY ISSUES	
	Below 40 %	PUBLISHING INFORMATION ON PROJECTS/ PLANS	SUMMARIZING REPORTS	ATTENDING MEETINGS INSIDE THE MINISTRY  ATTENDING MEETINGS OUTSIDE THE MINISTRY

- NOTES: <sup>1</sup> - Measured by the number of respondents who do the activity as a percentage of the 274 respondents sampled.
- <sup>2</sup> - Measured by the number of 1st or 2nd ranks as a percentage of the number of different ranks assigned to the activity by respondents who do the activity. Respondents were asked to rank the activities on the basis of how frequently they perform them.



appear to be representative of the activities performed by civil servants. Knowledge about the relative importance of the activities in the ministries is necessary for understanding how information services may be designed to serve civil servants doing the activities.

### 3.2 The influence of the nature of work activities on the use of information sources.

One of the objectives of this study was to analyze the relationship between the use of information sources and certain features of the activities that users perform. The review of the literature led to the following two hypotheses of the study:

Hypothesis (1): The number of sources depended upon for information by users performing activities that are the most complex or that allow much user discretion would be greater than the number of sources depended upon by users performing activities that are the least complex or that allow little user discretion.

Hypothesis (2a): In activities that are the most complex or that allow much user discretion, external information sources will be depended upon for information more often than they would be in activities that are the least complex and that allow little user discretion. Conversely,

Hypothesis (2b): internal sources will be depended upon for information more often in the latter group of activities than they would be in the former group of activities.

### 3.2.1 Analysis of the data and evaluation of the hypotheses.

#### (a) Assessment of the quality of the data.

Analyses were performed to determine the extent to which the variables used to measure work complexity, user discretion and other characteristics of the activities are correlated. The analyses reveal only a few significant correlations (Table 10). However, the few significant correlations are as expected. With respect to the results, it may be noted that the complexity of a work activity (task) is a multi-dimensional construct (Van de Ven and Ferry, 1980; Culnan, 1983). Thus, the absence of significant correlations among some of the variables does not necessarily imply inconsistencies in the responses to the questions used to measure the variables; it could mean that the variables are measuring distinct dimensions of work complexity.

There is also no significant correlation between the two variables used to measure the level of user discretion in work activities (i.e., between DISCRETION IN USE OF SOURCES and PRESCRIPTION OF SOURCES BY REGULATIONS). A plausible explanation for this finding is that the extent to which sources are prescribed by regulations is a stable and observable feature of a work activity, whereas the perception by a user of the amount of discretion that he/she has in an activity is relatively less stable.

(b). Evaluation of the hypotheses.

To evaluate the hypotheses, the work activities were categorized into those that are the most complex or that allow much user discretion and those that are the least complex or that allow little user discretion.<sup>36</sup> Given the ordinal nature of the data, Kruskal-Wallis one-way analysis of variance tests were performed to ascertain whether there are significant differences among the activities in terms of each of the variables pertaining to work complexity, user discretion, pressure of deadlines and the time required for the activities. The results of the tests are presented in Table 11, which also shows the average rank scores of the activities.<sup>37</sup>

The analyses show that the nine activities are different with respect to three of the four variables pertaining to work complexity - DIFFICULTY OF DETERMINING EFFECTIVENESS, CLARITY

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<sup>36</sup> The analyses reported here were undertaken with respect to nine work activities. These were the activities for which the number of cases were at least 16 (see Appendix 13). They comprise seven of the twelve activities initially focussed upon in the study, and two other activities mentioned by a significant number of the respondents (Appendices 6 and 7).

<sup>37</sup> The average rank scores are the mean ranks computed for the work activities in applying the Kruskal-Wallis tests. The scores give an indication of the ranking of the activities in terms of the variables used to measure work complexity, user discretion and the time required for the activities.

ABOUT SOURCES and FREQUENCY OF DIFFICULT PROBLEMS. In addition, there are differences among the activities with respect to one of the two variables pertaining to user discretion (PRESCRIPTION OF SOURCES BY REGULATIONS), and with respect to TIME REQUIRED FOR WORK.<sup>38</sup>

The rank ordering of the activities differ slightly depending upon which of the variables is used to compare them.<sup>39</sup> However, the following overall conclusions are supported: among the nine work activities, EVALUATING PROJECT PROPOSALS, EVALUATING REPORTS COMPILED BY OTHERS, and COMMUNICATING WITH OTHER MINISTRIES are the most complex. On the other hand, ADMINISTERING TAX LAWS AND COLLECTING REVENUES, ACCOUNTING AND EXPENDITURE CONTROL and IMPLEMENTING/INSPECTING PROJECTS are the least complex. The analyses also reveal that sources are highly prescribed by regulations (i.e., user discretion is low) in ADMINISTERING TAX LAWS AND COLLECTING REVENUES, ACCOUNTING AND EXPENDITURE CONTROL, and GENERAL ADMINISTRATIVE WORK. Conversely, user discretion tends to be high in EVALUATING PROJECT PROPOSALS,

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<sup>38</sup> The mean ranks scores of the activities in terms of the variables have been used to rank order the activities in Appendices 14 through 18).

<sup>39</sup> The low correlation among the variables used to measure the levels of work complexity and user discretion in activities means that meaningful composite indices of complexity and/or user discretion cannot be constructed for the activities.

EVALUATING REPORTS COMPILED BY OTHERS, and GATHERING STATISTICAL DATA.

Subsequently, and for the variables pertaining to work complexity, user discretion, and the time required for the activities, the average rank scores of the activities were used to categorize them into HIGH LEVEL and LOW LEVEL groups of activities.<sup>40</sup> From the perspective of the hypotheses of this section, the next analytical question is: do the users who do the two groups of activities differ in terms of the number and types of information sources on which they depend for information?

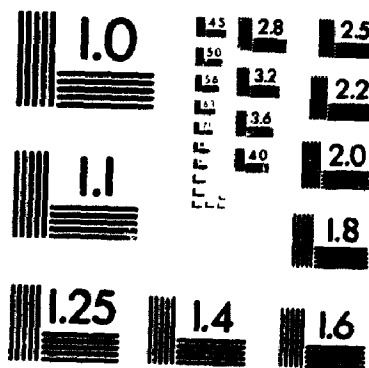
**Differences among users in the number of sources used.**

First, the number of sources that each respondent depends upon for information when doing his/her major work activity

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<sup>40</sup> As detailed in Appendices 14 through 18, for each of the variables used to measure work complexity, user discretion and time required for the activity, there were significant differences only between the first few highest-ranked and the last few lowest-ranked activities. The appendices show which of the activities were included in the HIGH LEVEL and LOW LEVEL groups respectively.

# 2



was determined.<sup>41</sup> Subsequently, student t-tests were undertaken to compare users who do the HIGH LEVEL group of activities to users who do the LOW LEVEL group of activities. The results of the analyses are presented in Table 12.

From the table, it is observed that generally, users who do the high level group of activities depend on more sources than users who do the low level group of activities. However, the difference in the number of sources depended upon by the two groups is significant only if the complexity of work activities is measured by CLARITY ABOUT SOURCES ( $p = .0305$ ). Furthermore, the difference in the number of sources used is significant if user discretion is measured by PRESCRIPTION OF SOURCES BY REGULATIONS ( $p = .0256$ ). These results clearly support Hypothesis (1). However, the difference between the number of sources depended upon for information by users doing the activities that require the most or the least time is not significant ( $p = .1515$ ).

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<sup>41</sup> Respondents were asked to rate each of 12 sources on the basis of how frequently they use them in activities. Respondents were required to rate the sources on five-point scales on which '1' meant 'not at all' and '5' meant 'very great extent'. Thus the number of sources (out of 12) to which a respondent assigned any one of the ratings '2', '3', '4' or '5' was taken as the number of sources used by that respondent.

**TABLE 10**

**CORRELATION AMONG THE VARIABLES USED TO MEASURE WORK COMPLEXITY, USER DISCRETION, PRESSURE OF DEADLINES AND THE TIME REQUIRED FOR THE ACTIVITIES.**

(Minimum pairwise number of cases = 219).

VARIABLES <sup>1</sup>	VARIABLES <sup>1</sup>						
	1	2	3	4	5	6	7
1. CLARITY ABOUT METHODS	.						
2. DIFFICULTY OF DETERMINING EFFECTIVENESS	-.298*						
3. DISCRETION IN USE OF SOURCES	.264*	-.044					
4. CLARITY ABOUT SOURCES	.473*	-.127	.322*				
5. PRESCRIPTION OF SOURCES BY REGULATIONS	.237*	-.131	.078	.267*			
6. FREQUENCY OF DIFFICULT PROBLEMS	-.224*	.153	-.034	-.146	-.109		
7. PRESSURE OF DEADLINES	.125	.003	.114	.131	.006	.170+	
8. TIME REQUIRED FOR WORK	.112	-.035	-.005	.120	-.235*	.078	.125

NOTES: <sup>1</sup> - Detailed explanation of the labels are given in Appendix 4.

+ -  $p < .01$ .

\* -  $p < .001$ .



TABLE 11

RESULTS OF KRUSKAL-WALLIS TESTS COMPARING ACTIVITIES IN TERMS OF WORK COMPLEXITY, USER DISCRETION AND THE TIME REQUIRED FOR THE ACTIVITIES.

WORK ACTIVITIES	VARIABLES <sup>1</sup>					
	DIFFICULTY OF DETERMINING EFFECTIVENESS	CLARITY ABOUT SOURCES	PRESCRIPTION OF SOURCES BY REGULATIONS	FREQUENCY OF DIFFICULT PROBLEMS	TIME REQUIRED FOR WORK	
1. EVALUATING PROJECT PROPOSALS	152.64	89.27	86.22	135.77	146.50	
2. COMMUNICATING WITH OTHER MINISTRIES	106.21	99.24	107.59	147.21	99.56	
3. IMPLEMENTING/INSPECTING PROJECTS	123.68	177.33	115.90	113.76	89.92	
4. GATHERING STATISTICAL DATA	110.31	130.84	101.52	131.67	177.54	
5. EVALUATING REPORTS COMPILED BY OTHERS	119.17	105.10	86.73	136.15	138.14	
6. DOING GENERAL ADMINISTRATIVE WORK	135.55	123.80	130.97	118.31	81.14	
7. PROVIDING DIRECT PUBLIC SERVICES	131.06	134.56	125.44	154.63	107.53	
8. ADMINISTERING TAX LAWS & COLLECTING REVENUE	84.38	124.10	152.23	98.40	78.13	
9. ACCOUNTING AND FINANCIAL CONTROL	117.80	147.35	139.93	92.96	134.24	
TEST DATA	p	.0086	.0288	.0270	.0020	.0000
DATA	N	244	239	245	235	231

NOTES: \* - Only the variables for which the test probabilities are less than .05 are included in the table. Table values are the mean ranks computed for the activities in applying the Kruskal-Wallis tests.

<sup>1</sup> - The tests were performed by comparing the activities in terms of each of these variables.

**TABLE 12**

RESULTS OF T-TESTS COMPARING ACTIVITIES IN TERMS OF THE NUMBER OF SOURCES DEPENDED UPON BY USERS DOING THE ACTIVITIES.

VARIABLE LABEL <sup>1</sup>	NUMBER OF SOURCES DEPENDED UPON IN ACTIVITIES RANKED				
	HIGHEST IN TERMS OF THE ROW VARIABLE		LOWEST IN TERMS OF THE ROW VARIABLE		Test p <sup>3</sup>
	Mean <sup>2</sup>	N	Mean <sup>2</sup>	N	
1. DIFFICULTY OF DETERMINING EFFECTIVENESS	10.20	25	9.18	79	.0535
2. CLARITY ABOUT SOURCES <sup>a</sup>	8.88	25	10.20	52	.0305
3. PRESCRIPTION OF SOURCES BY REGULATIONS <sup>b</sup>	8.99	77	10.05	42	.0256
4. FREQUENCY OF DIFFICULT PROBLEMS	9.60	67	9.33	42	.160
5. TIME REQUIRED FOR WORK	9.83	47	9.30	73	.1515

NOTES: <sup>1</sup> - See Appendix 4 for the detailed descriptions of the variable labels.

<sup>2</sup> - Average number of sources depended upon for information.

<sup>3</sup> - Two-tailed probability,

<sup>a, b</sup> - These variables are inversely related to the level of work complexity and user discretion respectively.

**TABLE 13**

RESULTS OF THE MANN-WHITNEY TESTS COMPARING GROUPS OF ACTIVITIES ON THE EXTENT TO WHICH USERS DOING THE ACTIVITIES DEPEND ON TWELVE INFORMATION SOURCES.

INFORMATION SOURCES <sup>2</sup>	VARIABLES USED TO GROUP THE ACTIVITIES <sup>1</sup>				
	DIFFICULTY OF DETERMINING EFFECTIVENESS	CLARITY ABOUT SOURCES	PRESCRIPTION OF SOURCES BY REGULATIONS	FREQUENCY OF DIFFICULT PROBLEMS	TIME REQUIRED FOR WORK
Internal files			L > H (.0038)	L > H (.0368)	L > H (.0026)
Consultancy reports	H > L (.0000)	H > L (.0000)	H > L (.0001)	H > L (.0044)	
Conference and workshop papers	H > L (.0244)	H > L (.0482)			
Academic journals			H > L* (.0372)		

## NOTES:

- <sup>1</sup> - See Appendix 4 for the detailed descriptions of the variable labels.
  - <sup>2</sup> - Only the sources for which significant results were are listed. The test probabilities are shown in parentheses. Appendix 29 includes details about sample sizes.
- H > L - Users doing activities ranked highest in terms of the variable in column depend on the source in the row more often than users doing activities ranked lowest in terms of the variable.
- L > H - Users doing activities ranked lowest in terms of the variable in column depend on the source in the row more often than users doing activities ranked highest in terms of the variable.

**Differences among users in the types of sources used.**

The Mann-Whitney non-parametric test procedure was used to compare users on the extent to which they depend on each of the twelve information sources. The results of the tests differ slightly depending upon which of the variables is used to group the activities (Table 13). Consequently, the results are discussed here separately under each variable.

**DIFFICULTY OF DETERMINING EFFECTIVENESS and CLARITY ABOUT SOURCES:** When work complexity is measured with either of these variables, the tests show that users doing the most complex activities depend on consultancy reports ( $p < .001$ ) and conference/workshop papers ( $p < .05$ ) more often than users doing the least complex activities. Both of these are external sources. However, there are no significant differences between users doing the most complex and the least complex activities in the extent to which they depend on the other sources. These results provide support for Hypothesis (2a) but not for Hypothesis (2b).

**FREQUENCY OF DIFFICULT PROBLEMS.** If work complexity is measured with this variable, it is found that users doing the most complex activities depend on consultancy reports ( $p < .01$ ) more often than users doing the least complex activities. On the other hand, users doing the least complex activities depend on internal files ( $p < .05$ ) more often than users doing

the most complex activities. Though users doing the most complex and the least complex activities do not differ in the extent to which they depend on the other sources, the results provide support for both hypotheses (2a) and (2b).

**PRESCRIPTION OF SOURCES BY REGULATIONS.** When user discretion is measured with this variable, the tests show that users doing the activities that allow much user discretion depend on consultancy reports ( $p < .001$ ) and academic journals ( $p < .05$ ) more often than users doing the activities that allow little user discretion. These are external sources. On the other hand, users doing the activities that allow little user discretion depend on internal files ( $p < .01$ ) more often than users doing activities that allow much user discretion. Users doing activities with much or with little user discretion do not differ in the extent to which they depend on the other sources. These results also provide support for both hypotheses.

**TIME REQUIRED FOR WORK.** It is interesting to note that users doing the activities in which little time is required to complete the activities tend to depend on internal files significantly more often than users doing activities in which much time is required ( $p < .01$ ).

### 3.2.2 Summary of the findings.

In summary, the analyses revealed that the average number of sources used in activities is directly related to the levels of the complexity of, and user discretion in the activities. It was also found that the use of consultancy reports, and of conference/workshop papers are directly related to the complexity of the activities, but that the use of internal files is inversely related to the complexity of activities. Finally, it was found that having more time to do an activity does not result in the use of more sources, and that internal files tend to be used more often in activities that require a short time to perform.

In conclusion, the results provide support for the hypotheses and suggest that the more complex the activity in which the user is engaged or the higher the level of discretion that such user has in the activity, (1) the higher is the number of sources used, and (2) the greater is the inclination to use external sources such as consultancy reports and conference/workshop papers.

### 3.3 The influence of the information provided by sources relative to the information required in activities.

As discussed in the literature review, it is reasonable to expect that a rational information user will use a source if it provides the type of information that the user requires to do his/her work activity. The possibility that such an

expectation may not be borne out by empirical data led to the following hypothesis of the study:

Hypothesis (5): Users doing a work activity will depend more on the information sources that best provide the type(s) of information which they require in the activity than they would on other information sources.<sup>42</sup>

In the study, the hypothesis was evaluated in terms of the extent to which five different types of information are required in activities relative to the extent to which twelve different sources provide the types of information.

### 3.3.1 Analysis of the data and evaluation of the hypothesis.

#### (a) Assessment of the quality of the data.

Analysis was performed to assess the nature of the correlation among the variables that were used to measure the extent to which types of information are required and produced in the activities. The matrix of correlation coefficients is reproduced in Table 14. The requirement of each type of information in activities is positively correlated with the production of that type of information in the activities. In other words, the more a given type of information is required in an activity, the more that type of information is also produced in the activity. Also, the requirement of research

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<sup>42</sup> In other words, to what extent does the ability of a source to provide the types of information required in an activity 'explain' the use of the source by users performing the activity?

information in activities is significantly correlated with the requirement of statistical information, and the requirement of procedural information is significantly correlated with the requirement of legal information.

(b) Evaluation of the hypothesis.

The analyses that were undertaken to evaluate Hypothesis (5) were in five stages. Firstly, the extent to which various types of information are required in each work activity was determined. Secondly, for each type of information, the relative extent to which the twelve sources provide that type of information was ascertained. The third step involved the determination, on the basis of the results from the preceding analyses, the extent to which users doing an activity would have depended upon various sources if the hypothesis was true, (i.e., if users were influenced by the extent to which various sources provide the types of information that they require the most in the activities). The fourth step involved the determination of the extent to which users actually depend upon the various sources. The final step entailed the comparison of the actual to the expected extent to which users depend upon each of the sources to ascertain the validity of the hypothesis.

The analyses were undertaken with respect to nine work activities. First, the Friedman non-parametric test was performed to ascertain whether, for each work activity, there



**TABLE 14**

**CORRELATION AMONG THE VARIABLES USED TO MEASURE THE EXTENT TO WHICH FIVE TYPES OF INFORMATION ARE REQUIRED AND PRODUCED IN THE WORK ACTIVITIES.**

(Minimum pairwise number of cases = 219).

VARIABLES <sup>1</sup>	VARIABLES <sup>1</sup>							
	1	2	3	4	5	6	7	8
1. NEED FOR DIRECTORY INFORMATION	-							
2. NEED FOR RESEARCH INFORMATION	.285*							
3. NEED FOR PROCEDURAL INFORMATION	.223*	.049						
4. NEED FOR STATISTICAL INFORMATION	.148	.370*	.106					
5. NEED FOR LEGAL INFORMATION	.167+	.074	.261*	.051				
6. OUTPUT OF DIRECTORY INFORMATION	.499*	.150	.118	.096	.211+			
7. OUTPUT OF RESEARCH INFORMATION	.122	.308+	.105	.223*	-.095	.149		
8. OUTPUT OF PROCEDURAL INFORMATION	.095	-.059	.298*	.019	.148	.074	.078	
9. OUTPUT OF STATISTICAL INFORMATION	.157	.165	.168*	.604*	-.049	.137	.178+	.124

NOTES: <sup>1</sup> - See Appendix 4 for the detailed descriptions of the variable labels.

+ -  $p < .01$ .

\* -  $p < .001$ .

**TABLE 15**

**RESULTS OF FRIEDMAN TESTS COMPARING WORK ACTIVITIES ON THE EXTENT TO WHICH FIVE TYPES OF INFORMATION ARE REQUIRED IN THE ACTIVITIES.**

WORK ACTIVITIES	TEST DATA		TYPES OF INFORMATION REQUIRED <sup>1</sup>	
	N	p	MOST OFTEN <sup>2</sup>	LEAST OFTEN <sup>2</sup>
1. EVALUATING PROJECT PROPOSALS	28	.0086	STA	PRO, LEG
2. COMMUNICATING WITH OTHER MINISTRIES	15	.0521	DIR	RES
3. IMPLEMENTING/INSPECTING PROJECTS	15	.3546	*	*
4. GATHERING STATISTICAL DATA	21	.0000	STA, DIR	LEG
5. EVALUATING REPORTS COMPILED BY OTHERS	21	.0004	STA, RES	LEG
6. DOING GENERAL ADMINISTRATIVE WORK	38	.0000	PRO, DIR	RES
7. PROVIDING DIRECT PUBLIC SERVICES	14	.7358	*	*
8. ADMINISTERING TAX LAWS AND COLLECTING REVENUE	25	.0000	DIR	RES
9. ACCOUNTING AND FINANCIAL CONTROL	22	.0033	PRO, LEG	RES
ALL WORK ACTIVITIES	215	.0000	STA, DIR	LEG, RES

NOTES: \* - The test was not significant at the 5% level.

1 - The types of information are  
 DIR - Directory information;  
 LEG - Legal information;  
 PRO - Procedural information;  
 RES - Research information;  
 STA - Statistical information.

2 - The types of information are listed in the declining order of mean ranks. The mean ranks are those computed for the types of information in applying the Friedman test procedure.

TABLE 16

RESULTS OF FRIEDMAN TESTS COMPARING SOURCES IN TERMS OF THE PROVISION OF FIVE TYPES OF INFORMATION.

WORK ACTIVITIES	TYPES OF INFORMATION MOST OFTEN REQUIRED <sup>1</sup>	SOURCES WHICH BEST PROVIDE THE TYPE(S) OF INFORMATION <sup>2,3</sup>	TEST DATA	
			N	p
1. EVALUATING PROJECT PROPOSALS	STA	S5, S4, S2, S1	24	.0002
2. COMMUNICATING WITH OTHER MINISTRIES	DIR	*	8	.1915
4. GATHERING STATISTICAL DATA	STA	S1, S2, S5, S4	12	.0028
	DIR	*	10	.4527
5. EVALUATING REPORTS COMPILED BY OTHERS	STA	*	10	.6513
	RES	*	9	.7762
6. DOING GENERAL ADMINISTRATIVE WORK	PRO	S4, S1, S5	27	.0000
	DIR	S4, S10, S5, S1	20	.0052
8. ADMINISTERING TAX LAWS AND COLLECTING REVENUE	DIR	S4, S10, S11, S9	13	.0464
9. ACCOUNTING AND FINANCIAL CONTROL	PRO	*	13	.1443
	LEG	S5, S4	11	.0524
ALL WORK ACTIVITIES	STA	S5, S4, S1, S2	121	.0000
	DIR	S4, S10, S1, S5	110	.0000

NOTES: \* - Test not significant at the 55 level (see the last column).

- 1 - From Table 15. The types of information are  
 DIR - Directory information;  
 LEG - Legal information;  
 PRO - Procedural information;  
 RES - Research information;  
 STA - Statistical information.

- 2 - The sources codes have the following interpretations:  
 S1 - Persons in state government ministries  
 S2 - Persons in academic institutions  
 S3 - Persons in private sector organizations  
 S4 - Internal (ministerial) files  
 S5 - Government publications  
 S6 - Consultancy reports  
 S7 - Conference/workshop papers  
 S8 - Academic journals  
 S9 - Management/professional journals  
 S10 - Newspapers and magazines  
 S11 - Books  
 S12 - Bulletins from the private sector

- 3 - The sources are listed in the declining order of the extent to which they provide each type of information. The mean ranks from the Friedman tests were used to rank order the sources.

**TABLE 17**

**LISTS OF EXPECTED AND ACTUAL SOURCES THAT USERS DEPEND UPON FOR INFORMATION IN WORK ACTIVITIES.**

WORK ACTIVITIES	SOURCES DEPENDED UPON FOR INFORMATION <sup>1</sup>		FRIEDMAN TEST DATA	
			N	p
1. EVALUATING PROJECT PROPOSALS	Expected <sup>2</sup>	S5, S4, S2, S1	-	-
	Actual <sup>3</sup>	S4, S5, S1, S11	25	.0000
4. GATHERING STATISTICAL DATA	Expected <sup>2</sup>	S1, S2, S5, S4	-	-
	Actual <sup>3</sup>	S1, S4, S5, S11, S3	22	.0000
6. DOING GENERAL ADMINISTRATIVE WORK	Expected <sup>2</sup>	S4, S1, S10, S5	-	-
	Actual <sup>3</sup>	S4, S5, S1, S11	35	.0000
8. ADMINISTERING TAX LAWS & COLLECTING REVENUE	Expected <sup>2</sup>	S4, S10, S11, S9	-	-
	Actual <sup>3</sup>	S4, S5, S11, S1, S3	22	.0000
9. ACCOUNTING AND FINANCIAL CONTROL	Expected <sup>2</sup>	S5, S4	-	-
	Actual <sup>3</sup>	S4, S1, S5, S11	22	.0000
ALL WORK ACTIVITIES	Expected <sup>2</sup>	S4, S5, S10, S1, S2	-	-
	Actual <sup>3</sup>	S4, S5, S1, S11	196	.0000

- NOTES:
- 1 - The source codes have the following interpretations:
    - S1 - Persons in state government ministries;
    - S2 - Persons in academic institutions;
    - S3 - Persons in private sector organization;
    - S4 - Internal (ministerial) files;
    - S5 - Government publications;
    - S6 - Consultancy reports;
    - S7 - Conference/workshop papers;
    - S8 - Academic journals;
    - S9 - Management/professional journals;
    - S10 - Newspapers and magazines;
    - S11 - Books;
    - S12 - Bulletins from the private sector.
  - 2 - These are the sources that provide the type(s) of information most often required in the activities (from Table 16).
  - 3 - These are the sources that users actually depend upon most often. The sources are listed in the decreasing order of the mean ranks test computed for the sources in applying the Friedman test procedure.

are significant differences in the extent to which the five types of information are required in the activity.<sup>43</sup> The tests show that in most of the work activities, there are significant differences in the requirement of the different types of information. A summary of the results is presented in Table 15. In the table, the type(s) of information that is most often required, and the type(s) that is least often required in each activity are shown.

Next, for each work activity, Friedman tests were again performed to ascertain whether there are differences among the sources in the extent to which they provide the type(s) of information that is most often required in the activity. The results of the tests are shown in Table 16. In the table, only the first few top-ranking sources are shown against each type of information. In terms of the hypothesis, it is expected that users doing the activity would depend more often upon these top-ranking sources for information than they would upon other sources.

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<sup>43</sup> In the survey, respondents were asked to compare and rate the twelve sources on the extent to which each source provides a given type of information. In effect, each respondent provided dependent ratings of the sources. The ratings were also defined on ordinal scales. Under such situations, the Friedman test is the most appropriate statistical method to use. The reader should refer to Conover (1980) for the theoretical justification of the use of the Friedman test procedure.

Finally, further Friedman tests were performed to ascertain whether there are differences in the extent to which users doing each activity actually depend upon the various sources for information. In most cases, the tests show that there are significant differences. In Table 17, the list of information sources that users actually depend upon most often for information are placed alongside the list of sources that best provide the types of information most often required in activities (the sources that were identified from the analyses described in the last paragraph). In terms of the hypothesis, it is expected that the two lists would be identical or almost identical.

Comparison of the two lists of sources reveals substantial overlap between the sources used most often by users doing specific activities and the sources which best provide the information that such users require most often in the activities. Thus, there is strong support for the view that the information provided by sources is an important correlate of source use by civil servants in the ministries.

### 3.3.2 Summary of the results.

Though the results of the analyses are as expected, there are a few exceptions that merit discussion. In Table 17, it will be observed that persons in academic institutions (S2) are considered by some users (those evaluating project

proposals and gathering statistical data) to be very productive of the types of information that they most often require in the activities. However, such users seldom depend on that source for information. A similar anomaly is found with users doing general administrative work or administering tax laws and collecting revenues. In this instance, newspapers and magazines (S10) are seldom depended upon for information though users consider them to be highly productive of the types of information that they require. These findings seem to suggest that there may be some barriers to the adequate exploitation of information from those sources.<sup>44</sup>

Also noticeable is the fact that though books (S11) are not highly rated in terms of the provision of work-relevant information, they are nevertheless much depended upon for information. This is a surprising finding that cannot be explained on the basis of the extent to which books provide the types of information required in the work activities.

A few other comments about the data seem appropriate. When all activities are considered together, statistical and directory information are the types of information that are most often required in the activities, and research

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<sup>44</sup> It may be noted that in the case of users doing general administrative work or administering tax laws and collecting revenue, they operate within activities in which the sources that may be used are highly prescribed by regulations (Table 11). Indeed, low user discretion in these activities is probably one of the important barriers to the adequate use of some information sources.

information is the least required (Table 15). Furthermore, among the twelve sources considered in the study, bulletins from the private sector (S12) are considered to be the least productive of the types of information most often required in various activities.

Finally, irrespective of the work activity performed, users tend to emphasize the use of internal files (S4), government publications (S5) and persons in government ministries (S1), and depend very little on bulletins from the private sector (S12) and persons in private sector organizations (S3). Indeed, an examination of the nature of the overlap between the sources most often used by the civil servants and those rated as best providers of the types of information needed in activities reveals a tendency for civil servants to depend on the internal sources more than is warranted by the ratings of those sources. (As shown in Table 17, the ranking of the internal sources is higher for actual use than for the rated extent to which they provide required information).



## **PART II**

### **THE NATURE OF THE DOCUMENTARY INFORMATION RESOURCES IN THE MINISTRIES AND THE RELATIONSHIPS BETWEEN SOURCE USE AND THE AVAILABILITY, ADEQUACY AND ACCESSIBILITY OF THE SOURCES.**

Part II comprises three main sections. First, the data gathered through the semi-structured interviews are reviewed. The review is intended to highlight aspects of the documentary information resources and services in the ministries. Then, analyses are performed to highlight the nature of the perceptions by civil servants of the availability, adequacy and accessibility of sources in their ministries. Finally, analyses are performed to assess the relationships between source use and the availability, adequacy and accessibility of the sources.

#### **3.4 The nature of library-based documentary information resources and services in the ministries.**

##### **3.4.1 Availability of library-based information services.**

The analyses here are intended to highlight problem areas in the management of library-based documentary resources and services in the ministries, and provide a context for

evaluating and interpreting the results of subsequent analyses.<sup>45</sup>

At the time of the survey, two of the ministries had no formal library-based documentary information services.<sup>46</sup> Of the ministries that had libraries, there were marked differences in the level of development of the facilities. The majority of the libraries were no more than archival storage facilities with no active information service functions. It is only in two of the ministries - the Ministry of Education in Kwara State and the Ministry of Finance and Economic Planning in Kaduna State that there were well-organized libraries.

Nevertheless, in virtually all the ministries, decisions had recently been taken either to establish a library or to improve the resource base or physical condition of the

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<sup>45</sup> The term 'library-based documentary information resources and services' is used here to refer to documents (and the information services based on them) that can be organized within the framework of a library, rather than a record management system. Thus the term encompasses such documents as government publications and other non-classified reports, journals, books, magazines and newspapers, but excludes internal files, and classified reports and documents.

<sup>46</sup> The absence of a formal library service in a ministry does not necessarily imply the lack of library-based documentary resources, but only that the resources are not organized and managed at a central location. In such cases, available documentary resources are often scattered over the organizational landscape and consequently often difficult to locate.

existing facility. These decisions seem to reflect increasing recognition within ministries that organized library-based information services are an important complement of the existing systems for the organization and management of internal files and classified government documents and reports.<sup>47</sup>

#### 3.4.2 Acquisition of materials and information services.

The bulk of the materials in the libraries comprises non-classified materials that are sent to the library over time from various use centers in the ministry. Only the library in the MFEP in Kaduna State has a standing materials budget, though most of the other libraries can make applications for funds to support the purchase of the occasional book, dictionary or magazine.

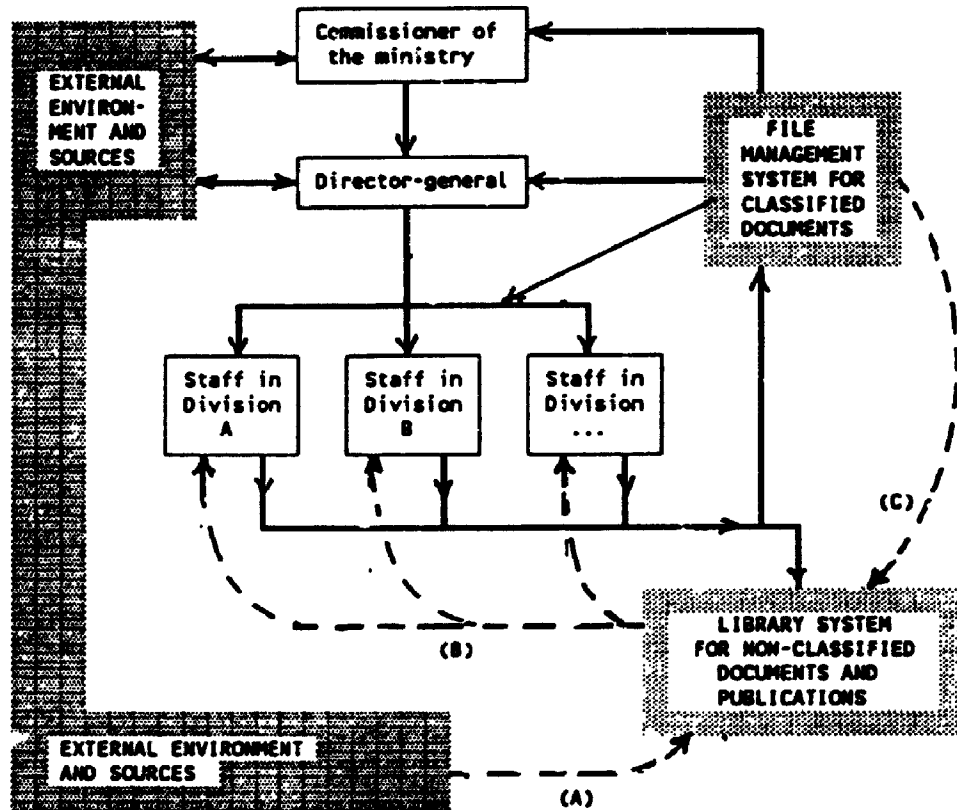
Generally, the flows of library-based documentary information resources between the library and users/units in the ministry is similar across the ministries. Key elements of the flows are represented in Figure 4. The main deficiencies in the library-based documentary information services where they are available appear to be both the lack

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<sup>47</sup> The increasing recognition of the utility of library-based information systems in ministries appears to be one of the beneficial impacts of the recent national policy decision to emphasize professional expertise within government ministries in Nigeria. (See Federal Government of Nigeria, 1988).

FIGURE 4

MAIN FLOWS OF DOCUMENTARY INFORMATION RESOURCES IN  
STATE GOVERNMENT MINISTRIES IN NIGERIA



- NOTES: —> Predominant flows of documentary information resources.  
--> Currently absent or minimal flows of library-based information resources and/or service.
- (A) Proactive acquisition of library-based resources.
  - (B) Proactive dissemination of information to users and use centres.
  - (C) De-classification of previously classified information resources.

of initiative by the library to acquire relevant materials from the external environment, and the lack or underdevelopment of information dissemination functions based on the available documentary resources. In most of the libraries, there are no systematic arrangements to seek and acquire even those materials that are freely available from external sources such as other governmental agencies or private institutions. Moreover, when new materials are received from sources within or outside the ministry, there are often no established arrangements for disseminating information about the materials to the user population.

#### 3.4.3 Collection sizes, organization of materials and patronage of the ministry libraries.

Tables 18 and 19 present the data on library collection sizes, the main types of documents maintained by the libraries, and the patronage of the libraries by users from within and outside the ministry. It can be observed that library collection sizes vary a great deal from as many as 5000 items in the case of the MFEP in Oyo state to as few as 150 items in the Ministry of Commerce and Industry in Kwara State. The breakdown of the type of materials held by the libraries (Table 19) shows that libraries usually maintain mainly government publications of their own state governments, as well as books and newspapers. Though five of the libraries subscribe to journals, only one of them subscribes to academic journals.

**TABLE 18****DOCUMENTARY RESOURCES AND PATRONAGE OF EIGHT MINISTRY LIBRARIES.**

STATE/MINISTRY <sup>*</sup>	Types of documentary resources held				Number of visits per week by users ..... ministry	
	No. of book items <sup>+</sup>	Number of .... subscriptions			inside	outside
		journal	magazine	news-papers		
1. KADUNA MFEP	650	10	0	0	10	2
2. NIGER ..	1500	1	0	4	22	12
3. ONDO ..	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4. OYO ..	5000	1 <sup>a</sup>	3	3	20	15
5. PLATEAU ..	200	0	0	5	5	2
6. KVARA ..	400	0	0	0	5	0
7. .. ME	1050	4	0	0 <sup>b</sup>	10	5
8. .. MCI	150	0	0	0 <sup>b</sup>	5	1 <sup>c</sup>

NOTES: \* The ministry codes have the following interpretations:  
 MFEP - Ministry of Finance and Economic Planning;  
 ME - Ministry of Education;  
 MCI - Ministry of Commerce and Industry.

+ Refers to bound volumes of monographs, reports, etc.

<sup>a</sup> Occasional copies of academic and professional journals kept - no standing subscription.

<sup>b</sup> Though some old newspapers are kept in the library, the control of newspaper subscriptions is maintained by the public relations office of the ministry.

<sup>c</sup> Only about two visits per three-month period.

n.a. Data not available.

TABLE 19

HOLDINGS OF VARIOUS TYPES OF LIBRARY-BASED DOCUMENTARY INFORMATION RESOURCES IN EIGHT MINISTRY LIBRARIES.

TYPE OF DOCUMENT	STATE/MINISTRY							
	KADUNA MFEP	NIGER MFEP	ONDO MFEP	OYO MFEP	PLATEAU MFEP	KWARA MFEP	KWARA ME	KWARA NCI
1. Govt. publications (a) of own state government	XX	XX	X	XX	X	XX	X	X
(b) of other governments	X	XX	X	X		X	X	X
2. Consultancy reports	X	X	X	X	X	X		XX
3. Conference papers	X		X	X	X	X	X	
4. Journals (a) academic				X <sup>a</sup>			X	
(b) management/ professional	X	X		X <sup>a</sup>		X	X	X
5. Newspapers	XX	XX	X	X	X	XX		
6. Books	XX	XX	X	XX	X	X	XX	X
7. Pamphlets/bulletins	X	X	X	XX	X	XX	X	X

NOTES: \* - The ministry codes have the following interpretations:  
 MFEP - Ministry of Finance and Economic Planning;  
 ME - Ministry of Education;  
 NCI - Ministry of Commerce and Industry.

- x - Library in column has less than 100 units of the type of document in row.  
 xx - Library in column has more than 100 units of the type of document in row.

Note also that a blank cell indicates that the library in column has none of the type of document in row.

- <sup>a</sup> - Occasional copies of academic and professional journals.

**TABLE 20****ORGANIZATIONAL POSITIONING AND STAFFING OF EIGHT MINISTRY LIBRARIES.**

STATE AND MINISTRY	Division of ministry		Position of person supervising the library staff	Library staff	
	in which library is located	exercising supervisory control of the library		Number	Educational/ professional qualification
1. KADUNA MFEP	Planning/ research	Planning/ research	Head of research unit	2	B.Sc; Certificate in library studies
2. NIGER ..	Planning	Planning	Planning officer I	2	Sch. certificate; 9 months staff development course
3. ONDO ..	Planning	Planning	Director	1	n.a.
4. OYO ..	Research	Research	Senior assistant secretary	1	G.4; 1 month course in librarianship
5. PLATEAU ..	Planning, research & statistics	Planning research & statistics	Head of statistics section & 2 others	2	Sch. certificate; 6 weeks Library attendant course
6. KWARA ..	Adminis- tration	Adminis- tration	Secretary for admin.	2	Sch. certificate; Assistant library officer course
7. .. NE	Project unit	Curriculum/ research	Director of education	3	B.Sc; Bachelor of Library Science
8. .. MCI	Adminis- tration	Adminis- tration	Staff officer	1	School certificate

NOTES: \* The ministry codes have the following interpretations:  
 MFEP - Ministry of Finance and Economic Planning;  
 ME - Ministry of Education;  
 MCI - Ministry of Commerce and Industry.



In the libraries, the collection of materials is physically organized in open-access stacks. However, only two of the libraries maintain a system for the subject organization of the collection.<sup>48</sup> In the other libraries, only unalphabetized lists of titles are kept; but documents are grouped according to type, for example, government gazettes, consultancy reports, etc. This approach to the organization of materials, coupled with the small sizes of library collections makes manageable the task of searching for and locating items.

Patronage of the libraries by users within the ministry vary between a low of 5-10 persons to a high of 20-25 persons per week. Generally, patronage of the libraries by persons outside the ministry is low and seems to be related to the size of the collection and the number of newspapers and magazines subscribed to by the library.

#### 3.4.4 Organizational positioning and staffing of the ministry libraries.

The notion of the organizational positioning of the library of a ministry has both physical and status dimensions. Most of the ministry libraries are physically located close to the divisions of the ministries that are primarily

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<sup>48</sup> Both libraries employ the Dewey Decimal Classification system within a card catalogue framework. One of the remaining libraries is contemplating a similar framework for conceptually organizing its materials.

concerned with research, planning and data gathering activities. However, in two of the ministries, namely the ministries of Finance and Economic Planning (MFEP) and that of Commerce and Industry (MCI) in Kwara State, the library is located within the administration division of the ministry.<sup>49</sup> In all ministries, administrative control of the library is usually maintained through a senior staff member of the division in which the library is located (Table 20).<sup>50</sup>

A second dimension of the organizational positioning of the library pertains to the organizational status of the library, the library staff and the personnel in direct supervisory charge of the library staff. The level at which the library is staffed often determines whether the library can make proactive decisions about the provision of information services. As can be seen from Table 20, the libraries are mostly staffed at a low level. More often, the ministry library is staffed by two persons who between them may have less than three months training in the technical

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<sup>49</sup> In the MFEP in Kwara State, the library was originally located within the Planning Division of the ministry, but was moved to the administrative division when the ministry was reorganized in 1987.

<sup>50</sup> A somewhat different approach to the administrative control of the ministry library is the use of a library committee in the MFEP of Plateau State. The committee comprise 3 senior staff members from the Planning and Statistics sections of the Planning, Research and Statistics Division of the ministry.

skills required for effective acquisition and/or organization of library-based documentary resources or for the proactive dissemination of information within the ministries. In this regard, it is important to note that in the ministries of Education in Kwara State and the MFEP in Kaduna State where there are well organized libraries, the library staff have high general and professional qualifications and are consequently directly supervised by a top level staff member of the supervising division of the ministry. The qualifications and status of the library staff often determine whether such staff can be relied upon to seek and obtain work-relevant information resources for top level staff members of the ministry. The low level at which most of the libraries are staffed probably explains why the libraries are seen and used mainly as receptors for used documents rather than as proactive providers of new documentary resources for users.

### 3.5 Perceptions by users of the availability, adequacy and accessibility of sources in their ministries.

The objective in this section is to analyze the nature of perceptions by users themselves about aspects of the information resources in their work environments, and about the availability, adequacy and accessibility of various sources. Only eight of the twelve sources focused upon in the study can be organized and managed within the framework of library-based information systems. Of the remaining four sources, internal files are usually organized and managed

within file-based information systems; and the other three, comprising persons in state government ministries, persons in academic and research institutions and persons in private sector organizations, are human sources.

### 3.5.1 Perceptions about source availability and adequacy.

The data pertaining to these variables are summarized in Table 21. Analysis of the data was performed to provide answers to the following questions:

- (a) Which of the library-based sources do respondents (users) consider to be available and adequate in the ministries?

Analyses revealed that the majority of the civil servants in individual ministries consider government publications to be available in the ministries. Next in order are newspapers and magazines, closely followed by conference/workshop papers and consultancy reports. In contrast, users are least agreed on the availability in ministries of academic and professional journals, and of bulletins from the private sector.

Analysis also shows that there is much variation in the level of consensus among users about the adequacy of the documentary sources (Table 21). Generally, the numbers of users who felt that the sources are adequate were about 55 to 70 percent lower than the numbers of users who indicated that the sources are available. From the table, it appears that

relatively more users are inclined to see government publications, and thereafter, newspapers and magazines, as adequate. On the other hand, academic journals and bulletins from the private sector are considered by most users to be inadequate in the ministries.

**(b) Are perceptions by users of the availability and adequacy of the sources different among users in different ministries (thus different environments)?**

Chi-square tests were performed to compare ministries in terms of user consensus about the availability and adequacy of the sources.<sup>51</sup> The tests reveal that at the 5% level of significance, there are differences among some of the ministries in the extent of user consensus about the availability of consultancy reports ( $p = .0165$ ) and books ( $p = .0100$ ) (Table 22). However, there are no differences among ministries in the extent of user consensus about the adequacy of any of the sources.

Analyses of the chi-square residuals were then undertaken to ascertain whether the differences among the ministries in the levels of user consensus about the availability of consultancy reports and books are related to the extent to

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<sup>51</sup> For each ministry, the number of affirmative responses to the questions about the availability and the adequacy of sources when expressed as proportions of the total number of respondents sampled from the ministry provide measures of the extent of consensus among users about the availability and adequacy of the sources in the ministry.

which the two sources are formally acquired, organized and maintained in the ministry libraries. In other words, does the level of development of library-based documentary resources and/or services in a ministry have any positive impact on user perceptions about the availability of the sources?

The findings are not conclusive. For example, in the case of consultancy reports, user consensus about the availability of the source is highest in the Ministry of Finance and Economic Planning (MFEP) of Niger, Kaduna and Lagos states and in the Ministry of Commerce and Industry (MCI) of Kwara state (Table 22). However, only the library of the MCI of Kwara state has more than a few of such reports (Table 19).<sup>52</sup> Moreover, in the case of books, consensus about availability is highest in the MFEP of Lagos, Niger, Ondo and Plateau states and least in the MCI of Kwara state, the MFEP of Oyo state and the Ministry of Agriculture and Natural Resources (MANR) of Kwara state (Table 22). However, of the former group of ministries, only the library in the MFEP of Niger state has more than a few books, whereas of the latter group of ministries, the library of the MFEP of Oyo has a sizeable collection of books (Table 19).

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<sup>52</sup> The MFEP in Lagos state has a library but no information on the resources and services of that library is available.

**TABLE 21**

PROPORTIONS OF RESPONDENTS INDICATING THAT LIBRARY-BASED SOURCES ARE AVAILABLE AND/OR ADEQUATE IN THE MINISTRIES.

INFORMATION SOURCE	USERS INDICATING THAT SOURCE IS				
	AVAILABLE IN MINISTRY		ADEQUATE IN MINISTRY		ADEQUATE/ AVAILABLE/ PERCENT <sup>b</sup>
	Number	% <sup>a</sup>	Number	% <sup>a</sup>	
1. Government publications	230	86	104	39	45.2
2. Consultancy reports	157	58	54	20	34.4
3. Conference/workshop papers	161	60	57	21	35.4
4. Academic journals	131	49	39	14	29.8
5. Management/professional journals	142	53	51	19	35.9
6. Newspapers/magazines	190	71	82	30	43.2
7. Books	146	54	51	19	33.1
8. Bulletins from the private sector	134	50	40	15	29.9
Sample size (N)	269		269		

NOTES: <sup>a</sup> - Percent of total number of respondents sampled.

<sup>b</sup> - Number of respondents indicating that a source is available in sufficient number and variety as a percentage of the number of users indicating that the source is available.

**TABLE 22**

**RESULTS OF CHI-SQUARE TESTS COMPARING MINISTRIES IN TERMS OF CONSENSUS BY USERS ABOUT THE AVAILABILITY OF LIBRARY-BASED SOURCES IN THE MINISTRIES.<sup>1</sup>**

INFORMATION SOURCE	CHI-SQUARE	MINISTRIES WHERE CONSENSUS ON SOURCE AVAILABILITY IS	
	p <sup>2</sup>	HIGH <sup>3</sup>	LOW <sup>3</sup>
1. Government publications	.0700	*	*
2. Consultancy reports	.0165	Niger, MCI, Kaduna, Lagos	Oyo, ME, MANR
3. Conference/workshop papers	.5253	*	*
4. Academic journals	.2029	*	*
5. Management/professional journals	.3176	*	*
6. Newspapers/magazines	.2229	*	*
7. Books	.0100	Lagos, Niger, Ondo, Plateau	MCI, Oyo, MANR
8. Bulletins from the private sector	.0990	*	*

- NOTES: <sup>1</sup> - Consensus about the availability of a source is measured by the proportion of respondents who say that the source is available in the ministry.
- <sup>2</sup> - For all chi-square tables total frequencies = 268, and degrees of freedom = 10.
- <sup>3</sup> - Ministries are listed in the decreasing order of the magnitude of the standardized X<sup>2</sup> residuals.
- \* - The test is not significant at the 5% level; thus the analysis of X<sup>2</sup> residuals was not performed.
- MCI - Ministry of Commerce and Industry of Kwara state.
- ME - Ministry of Education of Kwara state.
- MANR - Ministry of Agriculture and Natural Resources of Kwara state.



TABLE 23

RESULTS OF CHI-SQUARE TESTS OF THE RELATIONSHIPS BETWEEN CHARACTERISTICS OF USERS AND PERCEPTIONS BY USERS ABOUT THE AVAILABILITY OF LIBRARY-BASED SOURCES IN MINISTRIES.

INFORMATION SOURCES	CHARACTERISTICS OF USERS <sup>1</sup>					
	DIVISION OF THE ORGANIZATION	MAJOR WORK ACTIVITY	LEVEL IN THE ORGANIZATION	NUMBER OF YEARS IN THE SERVICE	CONFERENCES ATTENDED	COURSES ATTENDED
1. Government publications	.0276*	.0311*	.4803	.7415	.6892	.6969
2. Consultancy reports	.0181*	.0478*	.8383	.0581	.3101	.1937
3. Conference and workshop papers	.2188	.2432	.5592	.2876	.1212	.0421
4. Academic journals	.3070	.5990	.0571	.0166*	.2976	.7937
5. Management and professional journals	.8207	.2636	.0351*	.0384*	.8993	.0529
6. Newspapers/magazines	.2336	.1329	.4723	.6831	.4607	.3397
7. Books	.2251	.3575	.6870	.0521	.4068	.2655
8. Bulletins from the private sector	.2948	.0949	.8628	.0297*	.8614	.0455*
MINIMUM TOTAL FREQUENCY <sup>2</sup> DEGREES OF FREEDOM	265 3	265 10	265 3	265 3	265 3	

NOTES: \* - Table values are the  $\chi^2$  test probabilities. Test probabilities less than .05 are asterisked.

1 - Detailed descriptions of the characteristics of users are provided in Appendix 4. The coding scheme used for categorizing values of the variables are detailed in Appendix 28.

2 - The grand total frequency in the  $\chi^2$  tables.

**TABLE 24**

**RESULTS OF CHI-SQUARE TESTS OF THE RELATIONSHIPS BETWEEN CHARACTERISTICS OF USERS AND PERCEPTIONS BY USERS ABOUT THE ADEQUACY OF LIBRARY-BASED SOURCES IN MINISTRIES.**

INFORMATION SOURCES	CHARACTERISTICS OF USERS <sup>1</sup>					
	DIVISION OF THE ORGANIZATION	MAJOR WORK ACTIVITY	LEVEL IN THE ORGANIZATION	NUMBER OF YEARS IN THE SERVICE	CONFERENCES ATTENDED	COURSES ATTENDED
1. Government publications	.0915	.8166	.2621	.0831	.3606	.5047
2. Consultancy reports	.0311*	.3919	.9991	.0114*	.3287	.2731
3. Conference and workshop papers	.7403	.8440	.4525	.2161	.3569	.9513
4. Academic journals	.4115	.9116	.3690	.1111	.4267	.8452
5. Management and professional journals	.0995	.1064	.3283	.0117*	.3964	.1706
6. Newspapers/magazines	.1285	.0752	.3170	.0251*	.2253	.3393
7. Books	.7624	.5887	.3347	.0915	.7831	.4492
8. Bulletins from the private sector	.4288	.1614	.8182	.1523	.4701	.9267
MINIMUM TOTAL FREQUENCY <sup>2</sup>	265	265	265	265	265	265
DEGREES OF FREEDOM	3	10	3	3	3	3

NOTES: \* - Table values are the  $\chi^2$  test probabilities. Test probabilities less than .05 are asterisked.

1 - Detailed descriptions of the characteristics of users are provided in Appendix 4.

2 - The grand total frequency in the  $\chi^2$  tables.

The results of the analyses suggest that ministries do not differ much in terms of user consensus about the availability and adequacy of the sources. Moreover, in the case of consultancy reports and books for which differences exist among ministries, the differences are not consistently related to the extent to which the sources are formally maintained and organized in ministry libraries. One reason for the results may be that even in ministries where the library-based documents are well organized and maintained, little effort is made to disseminate to users in the ministry information about the resources that are available in the ministry libraries. A second reason could be that perceptions by users about the availability and the adequacy of sources are influenced more by user-level variables (for example, the access that a user has to personally-maintained collections of documentary information sources) than by organization-level variables such as the development of formal library-based documentary services in a ministry. The importance of some of these user-level variables are considered next.

**(c) Do perceptions by users about the availability and the adequacy of sources differ among users having characteristics other than the ministry of employment?**

To answer this question, users were grouped in terms of values of the following user variables: (1) functional division of the organization, (2) work activity most frequently performed (major work activity), (3) position

(i.e., level in the organizational hierarchy), (4) length of service (i.e., number of years spent working in the service), (5) number of courses attended and (6) number of conferences attended.<sup>53</sup> The groups of users were then compared using chi-square procedures. The results are reported in Tables 23 and 24.

Significant differences were found in perceptions among certain groups of users about the availability and the adequacy of some of the sources. Three user characteristics or variables seem important - the length of service, the functional division of the organization, and the major work activity of the user.

Thus, perceptions about the availability of government publications and consultancy reports tend to differ among users who work in different functional divisions of the organization ( $p < .05$ ). Analyses of chi-square residuals reveal further that users in the research and development divisions of the ministries are most inclined to consider consultancy reports to be available and adequate. In contrast, users who work in the accounting/supplies and public/external

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<sup>53</sup> These user characteristics can engender or limit user exposure to various documentary sources. For example, attendances at conferences can alter a user's perception about the adequacy of conference papers in the ministry. Also, users who work in the different divisions of a ministry may differ in their perceptions due to differences in the work activities performed and in proximity to the libraries in the ministries.

operations divisions of the ministries are least inclined to consider such reports to be available and/or adequate.<sup>54</sup>

Also, perceptions about the availability of academic and management/professional journals and bulletins from the private sector, and about the adequacy of consultancy reports, management/professional journals and newspapers and magazines tend to be inversely related to the user's length of service. In other words, the longer the time that a user had been in the service, the less likely would the user consider these sources to be available and/or adequate. In this connection, it is important to note that in the civil service, at least in Nigeria, length of service is often positively correlated with position (level in the ministry hierarchy). In turn, position is positively related to the number of attendances at conferences and courses.<sup>55</sup> Thus, the longer the length of service, the higher the chances that the user would have been exposed (through conferences, workshops and courses) to documentary sources of high quality outside the ministry.

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<sup>54</sup> Apart from the nature of the work activities mostly performed in divisions of the ministry, another factor that may also account for the differences in perceptions is that the ministry libraries are often located nearest to, and controlled, by the research and development divisions of the ministries. The libraries are also often located farthest from the accounting/supplies divisions of the ministry.

<sup>55</sup> The correlation matrix in respect of these user variables is presented in Appendix 27.

Consequently, such a user is more likely to recognize the relative lack of the sources in his or her ministry, and probably less likely to consider the sources to be available and adequate.

### 3.5.2 Perceptions by users of the accessibility of sources in the ministries.

Awareness by a user about the existence of a source within his or her environment is a necessary condition for using the source. It is however not sufficient. To obtain a complete picture of how users relate to sources, it is important to analyze perceptions by users about the accessibility of the sources in their work environment.

#### (a) Assessment of the quality of the data.

Analyses were performed with the data to enable an assessment of the convergent and discriminant properties of the questions (variables) used to measure user perceptions about the accessibility of sources. Presented in Table 25 is the matrix of the correlations between the ease with which users can gain access to human information sources and the frequency with which users encounter problems with the sources. It would be observed from the table that there is some evidence in support of the convergent validity of the alternative ways of measuring the accessibility of the human information sources. Thus, the ease of access to higher ranking officials in other ministries is inversely correlated

**TABLE 25**

**CORRELATION BETWEEN THE PERCEIVED EASE OF ACCESS TO HUMAN INFORMATION SOURCES AND THE PERCEIVED FREQUENCY WITH WHICH PROBLEMS ARE ENCOUNTERED WITH THE SOURCES.**

(Minimum pairwise number of cases = 151).

EASE OF OBTAINING ACCESS TO	FREQUENCY OF PROBLEMS IN GETTING INFORMATION FROM PERSONS IN		
	State government ministries	Academic and research institutions	Private sector organi- zations
1. Higher ranking officials in other ministries	-.2640**	-.0065	-.0520
2. Officials of federal government agencies in the state	-.3322**	.0672	-.0654
3. University lecturers and researchers in research institutes	-.1175	-.0915	-.0186
4. Officials of local government in state	-.0833	.0114	.0029
5. Management of private sector companies in state	-.2200*	-.1673	-.2829**

NOTES: \* Pearson's r probability < .01.  
\*\* " " " " < .001.

TABLE 26

CORRELATION BETWEEN PERCEPTIONS OF THE TIME THAT IT TAKES TO OBTAIN DOCUMENTARY SOURCES AND THE PERCEIVED FREQUENCY WITH WHICH PROBLEMS ARE ENCOUNTERED WITH THE SOURCES.

(Minimum pairwise number of cases = 131).

TIME THAT IT OFTEN TAKES TO OBTAIN THE SOURCE WHEN NEEDED  SOURCES <sup>1</sup>	FREQUENCY OF PROBLEMS WITH THE SOURCES SOURCES <sup>1</sup>								
	1	2	3	4	5	6	7	8	9
1. FILES	.2396*	.1251	.0626	.1213	.0015	.0070	-.0483	.0388	.1923
2. GOV. PUBL.	.1758+	.2012+	.1783	.2113+	.0832	.1363	.0839	.1545	.2416+
3. CONS. REPS.	.1703	.1836	.3048*	.3562*	.1731	.2128+	.1275	.1598	.1004
4. CONF. PAP.	.1402	.1126	.2713*	.3338*	.2312+	.2299+	-.0678	.1786	.2232+
5. ACAD. JOU.	.1461	.0188	.1106	.1979	.3909*	.3005*	-.0815	.0552	.2356+
6. MGT. JOU.	.1379	.1016	.1472	.2894*	.3615*	.3828*	.0064	.1838	.2847*
7. NEWS./MAGS.	.1085	.1862+	.2371+	.1737	.0323	.0983	.2296*	.1864	.1588
8. BOOKS	.1895+	.2260+	.3110*	.3173*	.2346+	.2966*	.0174	.2666*	.1396
9. BULLETINS	.0435	.1515	.1515	.2057	.3679*	.2640+	.1295	.0836	.2168

NOTES: + - Pearson's r probability < .01.  
\* - " " " " < .001.

<sup>1</sup> - The documentary sources are the following:

1. FILES - internal files;
2. GOV. PUBL. - government publications;
3. CONS. REPS. - consultancy reports;
4. CONF. PAP. - conference/workshop papers;
5. ACAD. JOU. - academic journals;
6. MGT. JOU. - management/professional journals;
7. NEWS./MAGS - newspapers and magazines;
8. BOOKS - Books;
9. BULLETINS - Bulletins from the private sector.



with the frequency with which users encounter problems in getting information from persons in state government ministries. Similarly, the ease of access to the management of private sector companies is inversely correlated with the frequency with which users encounter problems in getting information from persons in private sector organizations. However, the ease of access to university lecturers and researchers is not significantly correlated with the frequency with which users encounter problems in getting information from persons in academic and research institutions.

Also reproduced in Table 26 is the matrix of the correlations between the time that it takes to obtain documentary sources and the frequency with which users encounter problems with the sources. The correlation coefficients show that the two methods of measuring the accessibility of documentary sources possess some convergent validity. Evidence in support of the convergent validity of the two methods is provided by the significantly positive correlation between the time it often takes to obtain a source when needed and the frequency with which users encounter problems with the same source (the coefficients along the main diagonal of the matrix).

(b) Differences in perceptions about the accessibility of different sources.

The responses to the questions about the accessibility of the sources were analyzed using Friedman non-parametric

test procedures. The aim of the analyses was to determine whether there are significant differences in perceptions by users about the accessibility of the sources.

**The time it takes to obtain documentary sources.**

As shown in Table 27, the test probability is less than .001. It takes the least time to obtain internal files (from file-based information systems) and newspapers, the most time to obtain bulletins from the private sector and academic journals, and more or less the same time to obtain books, consultancy reports and conference/workshop papers.

**Ease of gaining access to the human sources.**

The test probability is .0020, suggesting that users view some of the sources (in particular, local government officials and officials in other ministries) to be easier to contact than other sources (Table 28). Overall, users consider officials in government agencies to be more accessible than individuals in the private sector and in quasi-governmental institutions (universities and research institutes).

**Frequency with which problems are encountered with the sources.**

The results of the test are reported in Table 29. The objective of the test was to compare both the human and documentary sources using the same yardstick - the frequency with which users encounter problems in connection with the

**TABLE 27**

RESULTS OF FRIEDMAN TESTS COMPARING DOCUMENTARY SOURCES  
IN TERMS OF PERCEPTIONS BY USERS OF THE TIME THAT IT  
OFTEN TAKES TO OBTAIN THE SOURCES WHEN NEEDED.

INFORMATION SOURCE (in rank order) <sup>1</sup>	MEAN RANK <sup>2</sup>
Internal files	3.61
Newspapers and magazines	3.86
Government publications	4.43
Books	5.10
Conference/workshop papers	5.20
Consultancy reports	5.25
Management/professional journals	5.41
Academic journals	5.84
Bulletins from the private sector	6.31
TEST p	.0000
N	108

NOTES: <sup>1</sup> - The sources are ranked in the increasing order of the time that it takes to obtain the sources.

<sup>2</sup> - The mean ranks are those computed for the sources in applying the Friedman test procedure.

**TABLE 28**

**RESULTS OF FRIEDMAN TESTS COMPARING FIVE HUMAN SOURCES IN TERMS OF PERCEPTIONS BY USERS OF THE EASE WITH WHICH THEY CAN OBTAIN ACCESS TO THE SOURCES.**

INFORMATION SOURCE (in rank order) <sup>1</sup>	MEAN RANK <sup>2</sup>
Local government officials in the state	3.31
Officials ranking higher than the respondent in other state ministries	3.26
Officials of Federal government agencies in the state	2.90
Lecturers in universities and researchers in research institutes	2.79
Management of private sector companies in the state	2.74
TEST p	.0020
N	150

- NOTES: <sup>1</sup> - The sources are ranked in the decreasing order of the ease of obtaining access.
- <sup>2</sup> - The mean ranks are those computed for the sources in applying the Friedman test procedure.

**TABLE 29**

**RESULTS OF FRIEDMAN TESTS COMPARING HUMAN AND DOCUMENTARY SOURCES IN TERMS OF PERCEPTIONS BY USERS OF THE FREQUENCY WITH WHICH PROBLEMS ARE ENCOUNTERED WITH THE SOURCES.**

INFORMATION SOURCE (in rank order) <sup>1</sup>	MEAN RANK <sup>2</sup>
Internal files	5.26
Government publications	5.80
Newspapers and magazines	6.09
Persons in academic and research institutions	6.31
Consultancy reports	6.42
Persons in state government ministries	6.51
Conference/workshop papers	6.64
Books	6.73
Persons in private sector organizations	6.74
Academic journals	6.95
Management journals	7.04
Bulletins from the private sector	7.42
TEST p	.0019
N	111

NOTES: <sup>1</sup> - The sources are ranked in the increasing order with which problems are encountered.

<sup>2</sup> - The mean ranks are those computed for the sources in applying the Friedman test procedure.

sources. The test is significant at the .01 level. Users report that the frequency of problems is lowest with internal files, government publications and newspapers, and highest with bulletins from the private sector and academic and management/professional journals. Of the three human sources, users felt that persons in academic and research institutes pose the fewest problems (a result that differs somewhat from that found when only human sources are compared using the ease of access criterion (see last paragraph). Though users view persons in private sector organizations to be the most problematic among the three human sources, they nevertheless consider them to pose problems slightly less frequently than academic and management/professional journals and bulletins from the private sector.

### 3.6 The relationships between source use and the availability, adequacy and accessibility of sources.

The utilization of a source by a user may be influenced by a number of factors, some situational, some user-related and some source-related. However, before a causal relationship can be inferred between a factor and the use of a source, it is necessary, though not sufficient, to show that there is a relationship between the variables used to measure the factor and those used to measure source utilization. The objective of this section is to investigate the nature of the relationships between the extent to which users depend on the

sources and perceptions by users of the availability, adequacy and accessibility of the sources. In the review of the literature, the following hypotheses of the study were specified:

Hypothesis (3): There will be a positive relationship between the extent to which a user depends on a source for information and the (a) availability, (b) adequacy, and (c) accessibility of the information source.

#### 3.6.1 Analysis of the data and the evaluation of the hypotheses.

To explore the extent to which each of the preceding hypotheses is borne out by the data, hierarchical log-linear procedures were used.

Hierarchical log-linear procedures are used to analyze and identify the relationships that may exist between two or more categorical variables considered simultaneously. The objective of such analysis is to identify the log-linear model that best describes the observed distribution of cases among the cells of a multi-way cross-tabulation. The best model fitted to the data provides information about the relative importance not only of the relationship between a dependent and an independent variable in the cross-tabulation, but also the importance of the simultaneous relationship between two or more of the independent variables and the dependent variable.

The primary aim of the log-linear analyses performed with the data was to identify, for each type of source, the

significant relationships between the extent to which users depend on the source (DEPENDENCY ON SOURCE) and one or more of the following factors:<sup>56</sup>

(i) the ease with which users gain access to the human sources (EASE OF ACCESS TO SOURCE);

(ii) the time it takes to obtain the documentary sources when needed (TIME TO OBTAIN SOURCE);

(iii) the frequency with which users encounter problems with each of the sources (PROBLEMS WITH SOURCE);

(iv) perceptions by users about the availability of the documentary sources in the ministries (AVAILABILITY OF SOURCE); and

(v) perceptions by users about the adequacy of the documentary sources in the ministries (ADEQUACY OF SOURCE).<sup>57</sup>

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<sup>56</sup> The extent to which users depend on a source (DEPENDENCY ON SOURCE) is viewed as the dependent variable in all the fitted log-linear models.

<sup>57</sup> As could be inferred from previous analyses, the data in respect of the availability and adequacy of sources is defined on a binary scale. On the other hand, the data in respect of the extent to which users depend on sources, the time it takes to obtain the sources and the frequency with which problems are encountered in connection with sources are defined on 5-point ordinal scales. For the hierarchical log-linear analyses, the 5-point scales were transformed into 3-point scales with the first two and the last two points on the former scale being mapped onto the first and last points on the latter scale respectively.



The Iterative Proportional Fit algorithm of the SPSSX HILOGLINEAR procedure was used to determine the model that best explains (fits) the data. Basically, the procedure begins with a saturated model being fit to the data in the cross-tabulation. Through iteration, individual main and interaction effects are then removed from the saturated model until a parsimonious model including the fewest effects and providing an 'adequate' fit to the data is identified.<sup>58</sup> The results of the analyses are presented in Tables 30 through 32, and discussed below.

#### Human information sources.

The log-linear analyses involved the following three variables: DEPENDENCY ON SOURCE, EASE OF ACCESS TO SOURCE, and PROBLEMS WITH SOURCE. The best fit models show that for each of the human sources, there is no significant interaction between DEPENDENCY ON SOURCE and either EASE OF ACCESS TO SOURCE or PROBLEMS WITH SOURCE. As shown in Table 30, the goodness-of-fit (GOF) probabilities for the models are .796, .427 and .256 for persons in government ministries, persons in academic and research institutes and persons in private

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<sup>58</sup> The criterion used for determining if an effect should be retained in the 'best-fit' model was that the likelihood ratio chi-square ( $G^2$ ) be significant at the 5 % level.

sector organizations respectively.<sup>59</sup> These are surprising findings.

#### Internal files.

The cross-tabulation involved the following variables: DEPENDENCY ON SOURCE, TIME TO OBTAIN SOURCE, and PROBLEMS WITH SOURCE. The result of the analysis is similar to that found for the human sources: the best-fit model shows that DEPENDENCY ON SOURCE is not significantly interrelated with either TIME TO OBTAIN SOURCE or PROBLEMS WITH SOURCE (GOF  $p = .614$ ). (See Table 31). Though this is also a surprising finding, a plausible explanation for the finding can be made. As revealed in previous analyses, internal files constitute the most important source of information for persons in the ministries. However, in the ministries, the use of internal files is in most instances mandated by procedural rules rather than being a matter of choice. Thus, users probably adapt to cope with the problems associated with internal files rather than vary the use of internal files in line with variations in the accessibility of the source.

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<sup>59</sup> The probability of the goodness-of-fit of each log-linear model may be interpreted as the proportion of the variation in the data explained by the significant effects included in the best-fit model.

**Library-based documentary sources.**

For these sources, the interrelationships among the following variables were investigated: DEPENDENCY ON SOURCE, AVAILABILITY OF SOURCE, ADEQUACY OF SOURCE, TIME TO OBTAIN SOURCE and PROBLEMS WITH SOURCE. For each of the sources, two separate three-way cross-tabulations were analyzed - DEPENDENCY ON SOURCE by AVAILABILITY OF SOURCE by FREQUENCY OF PROBLEMS, and DEPENDENCY ON SOURCE by ADEQUACY OF SOURCE by TIME TO OBTAIN SOURCE. (Tables 32).<sup>60</sup> The reader should also note that after the significant interaction effects between DEPENDENCY ON SOURCE and the other factors had been identified, follow-up chi-square analyses were undertaken to determine the strength and direction of the significant interaction effects. The results of these later analyses are shown in Table 33.

**Government publications:**

The only significant interaction is among DEPENDENCY ON SOURCE, ADEQUACY OF SOURCE and TIME TO OBTAIN SOURCE.<sup>61</sup> In

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<sup>60</sup> Due to the low total sample sizes (which ranged from 250 to 270) it was not possible to analyze models involving more than three factors at a time. For cross-tabulations involving more than three factors, many expected cell frequencies equalled or were very close to zero.

<sup>61</sup> Within the framework of hierarchical log-linear analysis, a significant three-way interaction among three variables implies that there are also significant interactions between pairs of the three variables.

other words, the extent to which users depend on government publications is related to perceptions about the time that it takes to obtain the source when needed, and at the same time to perceptions about the adequacy of the source.<sup>62</sup>

#### **Consultancy reports and management/professional journals.**

For these sources, two significant interrelationships were found. The first is between DEPENDENCY ON SOURCE and AVAILABILITY OF SOURCE (GOF p = .195), and the second is between DEPENDENCY ON SOURCE and ADEQUACY OF SOURCE (GOF p = .167). Both interrelationships are positive (Table 33). Though the extent to which users depend on each of the sources is directly related to perceptions about the availability and the adequacy of the sources, it is however not related to perceptions about the time that it takes to obtain the source when needed, nor to perceptions about the frequency with which users encounter problems with the source.

#### **Conference/workshop papers and books.**

For each of these sources, there is only one significant and positive interrelationship - that between DEPENDENCY ON

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<sup>62</sup> For this source, the best-fit model is the saturated model. For saturated models, all the variation in the data is explained; thus, the GOF p = 1.00).

**TABLE 30**

**RESULTS OF HIERARCHICAL LOG-LINEAR ANALYSES OF THE RELATIONSHIPS BETWEEN THE EXTENT TO WHICH USERS DEPEND ON HUMAN SOURCES AND THE ACCESSIBILITY OF THE SOURCES.**

Source	Significant effects in the best-fit hierarchical log-linear model <sup>1,2</sup>	Goodness of fit data			
		N	Df	G <sup>2</sup>	p
PERSONS IN STATE GOVERNMENT MINISTRIES	EASE OF ACCESS * PROBLEMS, DEPEND.	225	16	11.22	.796
PERSONS IN ACADEMIC AND RESEARCH INSTITUTIONS	EASE OF ACCESS * PROBLEMS, DEPEND.	152	16	16.38	.427
PERSONS IN PRIVATE SECTOR ORGANIZATIONS	EASE OF ACCESS * PROBLEMS, DEPEND.	173	16	19.25	.256

- NOTES:**
- \* - Indicates that an interaction effect was found between the variables whose labels are connected by the symbol.
  - 1 - Effects that are significant at the .05 level are retained in the best-fit models.
  - 2 - The variable codes have the following interpretations:  
 DEPEND - Extent to which users depend on the source.  
 EASE OF ACCESS - Ease with which access can be gained to the source.  
 PROBLEMS - Frequency with which problems are encountered with the source.
  - N - Number of cases used in the analysis.
  - G<sup>2</sup> - Likelihood ratio chi-square.
  - DF - Degrees of freedom.
  - p - Probability of fit of the model. This may be interpreted as the proportion of the variation in the data explained by the effects included in the best-fit model.

**TABLE 31**

RESULTS OF HIERARCHICAL LOG-LINEAR ANALYSES OF THE RELATIONSHIPS BETWEEN THE EXTENT TO WHICH USERS DEPEND ON INTERNAL FILES AND THE ACCESSIBILITY OF THE SOURCE.

Source	Significant effects in the best-fit hierarchical log-linear model <sup>1,2</sup>	Goodness of fit data			
		N	Df	G <sup>2</sup>	p
INTERNAL FILES	TIME * PROBLEMS, DEPEND.	237	16	13.80	.614

- NOTES:
- 1 - Indicates that an interaction effect was found between the variables whose labels are connected by the symbol. Effects that are significant at the .05 level are retained in the best-fit models.
  - 2 - The variable codes have the following interpretations:  
 DEPEND - Extent to which users depend on internal files.  
 PROBLEMS - Frequency with which problems are encountered with internal files.  
 TIME - The time it often takes to obtain internal files when needed.
- N - Number of cases used in the analysis.  
 G<sup>2</sup> - Likelihood ratio chi-square.  
 DF - Degrees of freedom.  
 p - Probability of fit of the model. This may be interpreted as the proportion of the variation in the data explained by the effects included in the best-fit model.

**TABLE 32**

RESULTS OF HIERARCHICAL LOG-LINEAR ANALYSES OF THE RELATIONSHIPS BETWEEN THE EXTENT TO WHICH USERS DEPEND ON LIBRARY-BASED SOURCES AND THE AVAILABILITY, ADEQUACY AND ACCESSIBILITY OF THE SOURCES.

Source	Significant effects in the best-fit hierarchical log-linear model <sup>a,b,c</sup>	Goodness of fit data			
		N	Df	G <sup>2</sup>	p
GOVERNMENT PUBLICATIONS	(1) DEPEND AVAIL PROBLEMS	244	12	12.84	.380
	(2) DEPEND * TIME * ADEQ	238	0	.00	1.000
CONSULTANCY REPORTS	(1) DEPEND * AVAIL	177	12	15.91	.195
	(2) DEPEND * ADEQ ADEQ * TIME	165	8	11.67	.167
CONFERENCE/ WORKSHOP PAPERS	(1) DEPEND * AVAIL	203	12	15.07	.238
	(2) ADEQ * TIME	134	12	12.44	.411
ACADEMIC JOURNALS JOURNALS	(1) DEPEND AVAIL	164	14	24.61	.039
	(2) DEPEND * TIME * ADEQ	152	0	.00	1.000
MANAGEMENT/ PROFESSIONAL JOURNALS	(1) DEPEND * AVAIL	185	12	15.25	.228
	(2) DEPEND * ADEQ TIME * ADEQ	168	8	5.50	.703
NEWSPAPERS AND MAGAZINES	(1) DEPEND * PROBLEMS * AVAIL	216	0	0.00	1.000
	(2) DEPEND TIME ADEQ	199	12	8.19	.770
BOOKS	(1) DEPEND * AVAIL PROBLEMS	203	10	7.58	.670
	(2) DEPEND TIME ADEQ	188	12	17.90	.119

(Table is continued on the next page ...)

TABLE 32 (Continued)

Source	Significant effects in the best-fit hierarchical log-linear model <sup>1,2,3</sup>	Goodness of fit data			
		N	Df	G <sup>2</sup>	p
BULLETINS FROM THE PRIVATE SECTOR	(1) DEPEND * AVAIL PROBLEMS	159	10	9.16	.517
	(2) DEPEND * ADEQ TIME	154	10	9.65	.472

- NOTES:
- <sup>a</sup> - An asterisk (\*) Indicates that an interaction effect was found between the variables whose labels are connected with the symbol. Effects that are significant at the .05 level are retained in the best-fit models.
  - <sup>b</sup> - The variable codes have the following interpretations:  
ADEQ - Perceptions about the adequacy of the source.  
AVAIL - Perceptions about the availability of the source.  
DEPEND - Extent to which users depend on the source.  
PROBLEMS - Frequency with which problems are encountered with the source.  
TIME - The time it often takes to obtain the source when needed.
  - <sup>c</sup> - The number in parenthesis before each group of effects refer to the model for which the effects are significant. For each of the sources, the following two cross-tabulations of variables were analyzed:  
(1) DEPEND by AVAIL by PROBLEMS, and  
(2) DEPEND by ADEQ by TIME.
  - <sup>N</sup> - Number of cases used in the analysis.
  - <sup>G<sup>2</sup></sup> - Likelihood ratio chi-square.
  - <sup>DF</sup> - Degrees of freedom.
  - <sup>p</sup> - Probability of fit of the model. This may be interpreted as the proportion of the variation in the data explained by the effects included in the best-fit model.



SOURCE and AVAILABILITY OF SOURCE. The GOF probabilities are .238 and .670 for the two sources respectively.

**Academic journals and newspapers and magazines.**

For both of these sources, significant three-way interrelationships were found. For academic journals, the interrelationship is among DEPENDENCY ON SOURCE, ADEQUACY OF SOURCE and TIME TO OBTAIN SOURCE. For newspapers and magazines, the interrelationship is among DEPENDENCY ON SOURCE, AVAILABILITY OF SOURCE and FREQUENCY OF PROBLEMS. Both best-fit models are saturated models with GOF probabilities of 1.0.

**Bulletins from the private sector.**

Two significant and positive interrelationships are found - between DEPENDENCY ON SOURCE and AVAILABILITY OF SOURCE (GOF  $p = .517$ ) and between DEPENDENCY ON SOURCE and ADEQUACY OF SOURCE (GOF  $p = .472$ ).

The results obtained for the library-based documentary sources provide some support for the hypotheses that there is a direct relationship between the extent to which users depend on a source and perceptions about the availability and the adequacy of the sources. However, the extent to which users depend on sources appears to be unrelated to the accessibility

of the sources measured either by the time that it takes to obtain the sources when needed, or the frequency with which users encounter problems with the sources.

For government publications and academic journals, significant three-way interrelationships were found among DEPENDENCY ON SOURCE, ADEQUACY OF SOURCE and TIME TO OBTAIN SOURCE. Also, for newspapers and magazines, a three-way interrelationship was found among DEPENDENCY ON SOURCE, AVAILABILITY OF SOURCE and PROBLEMS WITH SOURCE. However, the chi-square analyses of the partial tables DEPENDENCY ON SOURCE by TIME TO OBTAIN SOURCE while controlling for ADEQUACY OF SOURCE reveals that the relationship between DEPENDENCY ON SOURCE and TIME TO OBTAIN is not inverse as one would expect. As shown in Table 33, the Kendal's Tau-c statistic is negative but insignificant for users who said that the sources are inadequate in their ministries, and positive (instead of negative) for users who say that the sources are adequate! These results suggest that the accessibility of these sources (in terms of the time that it takes to obtain the sources when needed) is only marginally important among users in the ministries. Similar results were obtained when chi-square analyses were performed with the partial tables DEPENDENCY ON SOURCE by PROBLEMS WITH SOURCE while controlling for AVAILABILITY OF SOURCE (Table 33).

**TABLE 33**

RESULTS OF CHI-SQUARE ANALYSES OF THE RELATIONSHIPS BETWEEN THE EXTENT TO WHICH USERS DEPEND ON SOURCES AND THE AVAILABILITY, ADEQUACY AND ACCESSIBILITY OF THE SOURCES.

SOURCES	Significant effects found in hierarchical log-linear analyses <sup>a</sup>	X <sup>2</sup> statistics for the partial table(s)			Measures of association	
		N	DF	p	Lambda	Kendal's Tau-c
GOVERNMENT PUBLICATIONS	DEPEND * TIME * ADEQUACY					
	DEPEND by TIME controlling for ADEQ = No	138	4	.0224	.0645	-.0055
	DEPEND by TIME controlling for ADEQ = Yes	100	4	.3829	.0000	.0537
CONSULTANCY REPORTS	DEPEND * AVAIL	241	2	.0000	.0614	.3553*
	DEPEND * ADEQ	241	2	.0000	.1491	.2550*
CONFERENCE/ WORKSHOP PAPERS	DEPEND * AVAIL	246	2	.0000	.0972	.2982*
ACADEMIC JOURNALS	DEPEND * TIME * ADEQ					
	DEPEND by TIME controlling for ADEQ = No	122	4	.6842	.0000	-.0135
	DEPEND by TIME controlling for ADEQ = Yes	30	4	.0746	.2142	.3100*
MANAGEMENT/ PROFESSIONAL JOURNALS	DEPEND x AVAIL	238	2	.0002	.0165	.2793*
	DEPEND x ADEQ	238	2	.0003	.0743	.1798*
NEWSPAPERS AND MAGAZINES	DEPEND x TIME x AVAIL					
	DEPEND by TIME controlling for AVAIL = No	130	4	.9550	.0000	-.0412
	DEPEND by TIME controlling for AVAIL = Yes	69	4	.7501	.1000	.1103

(Table is continued on the next page ...)

TABLE 33 Continued)

SOURCES	Significant effects found in hierarchical log-linear analyses <sup>a</sup>	x <sup>2</sup> statistics for the partial table(s)			Measures of association	
		N	DF	p	Lambda	Kendal's Tau-c
BOOKS	DEPEND * AVAIL	254	2	.0051	.0432	.2169 <sup>+</sup>
BULLETINS FROM THE PRIVATE SECTOR	DEPEND * AVAIL	242	2	.0011	.0000	.2454 <sup>+</sup>
	DEPEND * ADEQ	242	2	.0013	.0370	.1458 <sup>+</sup>

- NOTES:
- \* - The chi-square analyses are follow-ups to the hierarchical log-linear analyses reported in Table 32. (DF: degrees of freedom).
  - <sup>+</sup> - Significant at the .05 level.
  - <sup>a</sup> - Only the significant interactions involving the dependent variable are shown and analyzed. For the three-way interactions, the partial tables are separately analyzed.
  - <sup>b</sup> - The variable codes have the following interpretations:  
ADEQ - Perceptions about the adequacy of the source.  
AVAIL - Perceptions about the availability of the source.  
DEPEND - Extent to which users depend on the source.  
PROBLEMS - Frequency with which problems are encountered with the source.  
TIME - The time it often takes to obtain the source when needed.

### 3.6.2 Summary of the results.

The analyses of this section show that some sources (especially internal files, newspapers and government publications) are considered by most users to be available. Such sources are also considered to be more accessible than other sources. Moreover, among the library-based documentary sources, users are more inclined to consider government publications and newspapers to be available in sufficient number and variety in the ministries than they would other sources. On the other hand, bulletins from the private sector, and academic and management/professional journals are considered by most users to be unavailable, inadequate and relatively inaccessible within the ministries.

When both human and documentary sources are compared in terms of the frequency with which users encounter problems with them, sources linked to government institutions and agencies are considered to be more accessible than sources linked to the private sector and to quasi-governmental organizations. In addition, the human sources are considered to pose problems more frequently than some documentary sources (in particular, internal files and government publications), and less frequently than other documentary sources (in particular, journals and bulletins from the private sector). Finally, among the three human sources, persons in private sector organizations are considered to pose the most problems.

The analyses also show that the extent to which users depend on sources is directly related to perceptions about the availability and the adequacy of the sources in the ministries. However, the use of sources appears not to be directly related to the accessibility of the sources to civil servants.

### PART III

#### **THE RELATIONSHIPS BETWEEN SOURCE USE AND THE CHARACTERISTICS OF THE INFORMATION SOURCES, AND OF CIVIL SERVANTS.**

Part III comprises two main sections. In the first section, analyses are performed to assess the relationships between source use and various characteristics of the information sources. The objective of the analyses is to evaluate the relative importance of each of the characteristics. In the second section, the relationships between source use and various personal attributes of civil servants are explored.

#### **3.7 The relationships between source use and some characteristics of the sources.**

The analyses that were undertaken with the data were aimed at evaluating the following four hypotheses of the study:

Hypothesis (4): There will be a direct relationship between the extent to which a user depends on an information source and the extent to which the source provides information that is relevant and/or specific to the activities of the organization in which the user works.

Hypothesis (6): There will be a direct relationship between the extent to which a user depends on an information source and the extent to which the source provides accurate information.

Hypothesis (7): There will be a direct relationship between the extent to which a user depends on a information source and the brevity with which the source provides information.

Hypothesis (8): There will be a direct relationship between the extent to which a user depends on an information source and the extent to which the source provides information that helps the user to justify or account for official decisions to superiors or to the public.

3.7.1 The extent to which the sources provide the five types of information.

The Friedman non-parametric test performed with the data revealed that at the .001 level, there are significant differences among the sources in the extent to which they provide the five types of information. The results of the tests are presented in Table 34.

The tests reveal, firstly, that civil servants consider 2 internal sources - internal files, government publications and persons in state government ministries - to be the best providers of all but one of the types of information. The exception is research information.

Secondly, private sector sources - persons in the private sector and bulletins from the private sector - were rated low in terms of the provision of all the types of information. Given the wealth of information of various types that is often available from private sector sources, this finding probably reflects the users' lack of knowledge about the private sector sources (due probably to the infrequency with which they use



them) than the poverty of the sources of the types of information.

Thirdly, for the provision of research information, users consider persons in academic and research institutions, books, academic and professional/management journals and conference/workshop papers to be the best sources; on the other hand, the internal sources are considered to be poor providers of such information.

### 3.7.2 The accuracy, brevity and authoritativeness of the sources.

Further Friedman tests reveal also that at the .001 level, there are significant differences among the sources in terms of the provision of accurate information, information that enables users to justify or account for official decisions, and in terms of the brevity with which information is presented. (Table 35). Generally, internal sources are the most highly rated in terms of the provision of both accurate information and information that enables users to justify or account for official decisions. However, while academic journals are also considered to provide highly accurate information, they are nevertheless rated very poorly in terms of the provision of information that enables users to justify or account for official decisions. This suggests, as is often noted in the literature, that the potential for information to be used as justification for decisions transcends the notion of the accuracy of the information.

**TABLE 34**

**RESULTS OF FRIEDMAN TESTS COMPARING SOURCES IN TERMS OF THE PROVISION OF FIVE TYPES OF INFORMATION.**

SOURCES	PROVISION BY THE SOURCES OF				
	DIRECTORY INFO.	RESEARCH INFO.	LEGAL INFO.	STATISTICAL INFO.	PROCEDURAL INFO.
1. Persons in state government ministries	7.01	4.59	8.40	7.83	9.21
2. Persons in academic and research institutions	6.28	8.40	5.81	7.10	5.91
3. Persons in private sector organizations	5.94	5.75	5.42	4.85	4.80
4. Internal files	7.80	5.38	8.45	8.01	9.39
5. Government publications	6.97	5.66	8.43	8.49	8.38
6. Consultancy reports	5.98	6.64	5.60	6.16	5.48
7. Conference/workshop papers	6.29	7.25	5.94	6.13	6.29
8. Academic journals	6.06	7.64	5.64	6.58	5.68
9. Management/professional journals	6.56	7.40	6.95	6.58	6.56
10. Newspapers and magazines	7.54	6.19	6.34	5.86	5.65
11. Books	6.74	7.84	6.43	5.96	6.37
12. Bulletins from the private sector	4.84	5.25	4.59	4.45	4.29
TEST DATA	P	.0000	.0000	.0000	.0000
	N	110	118	120	121

NOTE: \* - Table values are the mean ranks computed for the sources in applying the Friedman test procedure.

**TABLE 35**

**RESULTS OF FRIEDMAN TEST, COMPARING SOURCES IN TERMS OF ACCURACY  
BREVITY AND AUTHORITATIVENESS.**

<b>SOURCES</b>	<b>ACCURACY OF SOURCE</b>	<b>BREVITY OF SOURCE</b>	<b>AUTHORITA- TIVENESS OF SOURCE</b>
1. Persons in state government ministries	7.16	7.67	8.48
2. Persons in academic and research institutions	6.90	6.54	5.70
3. Persons in private sector organizations	4.46	6.13	4.73
4. Internal files	8.27	7.47	9.31
5. Government publications	7.92	7.76	8.55
6. Consultancy reports	6.37	6.50	6.46
7. Conference/workshop papers	6.60	6.02	6.60
8. Academic journals	7.17	6.04	5.56
9. Management/professional journals	7.07	6.91	6.75
10. Newspapers and magazines	5.00	5.90	5.27
11. Books	6.53	5.24	5.97
12. Bulletins from the private sector	4.53	5.83	4.61
<b>TEST DATA</b>	<b>P</b>	<b>.0000</b>	<b>.0000</b>
	<b>N</b>	<b>131</b>	<b>143</b>

**NOTE:** - Table values are the mean ranks computed for the sources in applying the Friedman test procedure.

TABLE 36

RESULTS OF CHI-SQUARE ANALYSES OF THE RELATIONSHIPS BETWEEN THE EXTENT TO WHICH USERS DEPEND ON SOURCES AND SOME CHARACTERISTICS OF THE SOURCES.

INFORMATION SOURCE	SIGNIFICANT RELATIONSHIP EXISTS BETWEEN User dependency on the source and <sup>a,b</sup>	CHI-SQUARE STATISTICS <sup>c</sup>			
		$\chi^2$	p	Lambda	Kendal's Tau-c
Persons in state government ministries	Legal	14.24	.0066	.0000	.0927+
	Statistical	9.85	.0431	.0000	.1025+
Persons in academic and research institutions	Legal	7.88	.0962	.0000	.1561++
	Authoritativeness	9.20	.0562	.0000	.1392++
Persons in private sector organizations	Research	8.84	.06	.0000	.1185+
	Brevity	9.56	.0477	.0204	.0933
	Authoritativeness	23.30	.0001	.1827	.2932+++
Internal files	Statistical	14.07	.0071	.0000	.0892+
	Procedural	21.30	.0003	.0000	.1173+++
	Accuracy	15.12	.0047	.0000	.0714+
	Authoritativeness	20.67	.0004	.0000	.1327+++
Government publication	Legal	10.77	.0293	.0000	.1285++
	Statistical	13.85	.0078	.0124	.1332+++
	Procedural	23.65	.0001	.0000	.2059+++
	Accuracy	16.10	.0029	.0000	.1349+++
	Authoritativeness	18.67	.0009	.0132	.1482+++
Consultancy reports	Directory	9.23	.0557	.1078	.1831++
	Procedural	8.99	.0613	.1456	.1839++
Conference/workshop papers	Directory	10.01	.0403	.0887	.1836++
	Research	11.56	.0209	.0856	.1683++
	Legal	23.86	.0001	.1983	.2513+++
	Statistical	12.55	.0137	.0750	.1533++
	Procedural	34.64	.0000	.1901	.2825+++
	Accuracy	17.99	.0012	.0873	.1501++
	Authoritativeness	10.47	.0331	.0391	.1135+
Academic journals	Legal	18.07	.0012	.0682	.2758+++
	Procedural	28.13	.0000	.0787	.3269+++
	Authoritativeness	10.13	.0383	.0000	.1829++
Management/professional journals	Legal	24.54	.0001	.0909	.2109+++
	Statistical	8.32	.0805	.0396	.1446+
	Procedural	11.69	.0199	.0204	.1988+++
	Authoritativeness	14.51	.0058	.0673	.2225+++

(Table is continued on the next page ...)

TABLE 36 (Continued)

INFORMATION SOURCE	SIGNIFICANT RELATIONSHIP EXISTS BETWEEN User dependency on the source and a,b	CHI-SQUARE STATISTICS <sup>c</sup>			
		x <sup>2</sup>	p	Lambda	Kendal's Tau-c
Newspapers and magazines	Research	15.28	.0042	.0982	.2079+++
	Legal	8.76	.0675	.0727	.1098+
	Procedural	12.12	.0165	.0849	.2132+++
	Accuracy	19.56	.0006	.1132	.2212+++
	Authoritativeness	24.14	.0001	.0974	.2392+++
Books	Directory	14.88	.0050	.0490	.1810++
	Legal	9.81	.0438	.0430	.1418+
	Statistical	13.84	.0078	.0000	.1661++
	Procedural	10.35	.0349	.0095	.1669++
	Brevity	11.76	.0192	.0094	.1478++
	Authoritativeness	14.69	.0054	.0289	.2189+++
Bulletins from the private sector	Legal information	21.30	.0003	.0488	.2191+++
	Statistical	12.96	.0115	.0000	.1953++
	Procedural	34.60	.0000	.1205	.2537+++
	Accuracy	14.28	.0064	.0119	.1769++
	Brevity	10.52	.0325	.0000	.1263+
	Authoritativeness	23.89	.0001	.0595	.2894+++

NOTES: <sup>a</sup> - Only the source characteristics (variables) for which the x<sup>2</sup> statistic is significant at the .10 level are listed in the column.

<sup>b</sup> - The variable labels have the following interpretations:

User dependency on source - extent to which a user depend on a source for information (the dependent variable);  
 Directory - extent to which a source provides directory information;  
 Research - extent to which a source provides research information;  
 Legal - extent to which a sources provides legal information;  
 Statistical - extent to which a source provides statistical information;  
 Procedural - extent to which a source provides procedural information;  
 Accuracy - Accuracy of a source;  
 Brevity - Brevity of a source;  
 Problems - frequency with which users encounter problems with the source.  
 Authoritativeness - extent to which a source provides information that enables users to justify or account for official decisions.

<sup>c</sup> - Degrees of freedom for each analyzed table = 4; total frequencies for the tables ranged between 164 and 238.

+ - Kendal's Tau-c is significant at the .05 level.  
 ++ - " " " " " " " " .01 level.  
 +++ - " " " " " " " " .001 level.

It is also noted that of the eight source characteristics that were investigated, the differences in average ratings between the highest and lowest rated sources is greatest with respect to the provision of procedural information and information that enables users to justify or account for decisions, and least with respect to the provision of directory information, and the brevity with which information is presented.<sup>63</sup>

3.7.3 The relative importance of the source characteristics as factors underlying source use.

To evaluate the relative importance of the different characteristics of the sources as potential factors underlying the use of the sources, chi-square analyses were performed to ascertain the strength and direction of the relationships between the extent to which users depend on each source and the ratings of the source in terms of the different characteristics. The results of the analyses are reported in Table 36. The analyses show that at the 5 % level, and for most of the sources, the extent to which users depend on the sources is not independent of the extent to which sources provide procedural and legal information and information that enables users to justify or account for official decisions. In addition, and using the Kendal Tau-c statistic as the

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<sup>63</sup> The mean ranks computed for the information sources in applying the Friedman tests have been used to rank the sources in Appendices 19 through 26.

decision criterion, the direction of the relationship is positive and significant at the 5% level. In contrast, the extent to which users depend on the sources is generally independent of the extent to which the sources provide research and directory information and the brevity with which the sources present information.

The preceding analyses show, that among the different characteristics of sources, the capabilities of sources to provide procedural and legal information, and information that enables users to justify or account for decisions are important factors that probably underlie the use of the sources.<sup>64</sup> However, it must be noted that the characteristics of sources are but one of the various groups of factors that may jointly explain information-seeking behavior. Among the other important groups of factors are the characteristics of work activities, the availability and accessibility of sources, and of the characteristics of the users. The influence of the first two of the preceding groups of factors have been evaluated in the preceding parts and sections of this chapter; the influence of the third group of factors is analyzed and discussed in the next section.

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<sup>64</sup> Note the use of the qualification 'probably'. This is because in analyzing survey data it is often difficult to unambiguously determine the direction of causality among the variables.

### 3.8 The relationships between source use and some personal characteristics of civil servants.

In the questionnaire, respondents were also asked to provide personal information about themselves. Of relevance here are responses by the respondents to the questions about (1) the number of years that they had been working in the service (a measure of the users's level of experience), (2) the position they occupy in the organizational hierarchy (a measure of the user's status in the ministry and civil service), (3) the number of in-service courses that they had attended (4) the number of conferences/workshops that they had attended (5) the number of inter-ministerial task forces that they had served, and (6) the average number of inter-ministerial meetings that they attend per month. These user-level characteristics measure the extent to which the civil servant is exposed to various information sources and forums within and outside the ministries.

Exploratory analyses of the data were performed to determine the nature of the relationships between the extent to which civil servants depend on the sources and the preceding personal characteristics. The results of the chi-square analyses are presented in Table 37. The findings are as follows.<sup>65</sup>

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<sup>65</sup> The coding schemes used for categorizing values of the variables (user characteristics) for the chi-square analyses are shown in Appendix 28.



First, the extent to which civil servants depend on both internal files and academic journals is independent of any of the user characteristics. The finding in respect of internal files is not surprising given that in ministries internal files are the standard routing media and storage receptacle for all written forms of official communication. However, the finding in respect of academic journals is surprising.

Secondly, at the 5 percent level, the length of service of the civil servant (a measure of the level of experience with civil service routines, rules and procedures) is inversely related to the extent to which he/she depends on books ( $p = .0109$ ; Kendal's Tau-c  $< .001$ ) and bulletins from the private sector ( $p = .0012$ ; Kendal's Tau-c  $< .001$ ). An explanation for this finding may be that as the civil servant becomes more experienced, he/she becomes increasingly aware that these sources are unlikely to provide the information suitable for decision-making in the civil service environment.

Thirdly, the extent to which civil servants depend on consultancy reports is significantly and positively related to the frequency with which they attend inter-ministerial committee meetings ( $p = .0145$ ; Kendal's Tau-c  $< .001$ ). In this connection, it may be noted that inter-ministerial committee meetings are arenas for resolving complex policy-making issues involving many ministries. As was found in section 3.3, consultancy reports are used most often in work activities that are highly complex. The fact that both inter-ministerial

TABLE 37

RESULTS OF CHI-SQUARE ANALYSES OF THE RELATIONSHIPS BETWEEN THE EXTENT TO WHICH USERS DEPEND ON SOURCES AND SOME USER CHARACTERISTICS.

INFORMATION SOURCE	SIGNIFICANT RELATIONSHIP EXISTS BETWEEN User dependency on the source and a,b	CHI-SQUARE STATISTICS <sup>c</sup>			
		$\chi^2$	p	Lambda	Kendal's Tau-c
Persons in state government ministries	Years in the service	11.09	.0857	.0000	-.0821 <sup>+</sup>
Persons in academic and research institutions	Years in the service	12.13	.0590	.0000	-.0554
	Courses attended	10.84	.0934	.0000	.0449
	Inter-ministerial meetings/month	24.55	.0781	.0286	-.0080
	Level in the hierarchy	11.17	.0831	.0000	.0499
Persons in private sector organizations	Level in the hierarchy	14.29	.0266	.0198	.0443
Internal files	*				
Government publications	Inter-ministerial meetings/month	30.95	.0136	.0115	.0809
Consultancy reports	Inter-ministerial meetings/month	30.74	.0145	.0667	.1921 <sup>+++</sup>
Conference/workshop papers	Conferences or workshops attended	13.09	.0416	.0489	.1701 <sup>++</sup>
Academic journals	*				
Management/ professional journals	Conferences and workshops attended	11.84	.0656	.0083	.0748
	Level in the hierarchy	10.70	.0979	.0000	.1646 <sup>++</sup>
Newspapers and magazines	Years in the service	10.89	.0919	.0620	-.0963 <sup>+</sup>
	Courses attended	17.35	.0081	.0703	.0926 <sup>+</sup>
	Inter-ministerial task forces served	11.10	.0852	.0159	-.0414

(Table is continued on the next page ...)

TABLE 37 (Continued)

INFORMATION SOURCE	SIGNIFICANT RELATIONSHIP EXISTS BETWEEN User dependency on the source and <sup>a,b</sup>	CHI-SQUARE STATISTICS <sup>c</sup>			
		$\chi^2$	p	Lambda	Kendal's Tau-c
Books	Years in the service	16.60	.0109	.0435	-.1952 <sup>+++</sup>
	Courses attended	11.09	.0857	.0074	-.0572
Bulletins from the private sector	Years in the service	22.05	.0012	.0654	-.2160 <sup>+++</sup>
	Courses attended	19.18	.0039	.0000	-.0274

- NOTES:
- <sup>a</sup> - Only the user characteristics (variables) for which the  $\chi^2$  statistic is significant at the .10 level are included in the table.
  - <sup>b</sup> - The coding schemes used to categorize values of the user characteristics are detailed in Appendix 28.
  - <sup>c</sup> - Degrees of freedom: for tables involving 'Inter-ministerial meetings/month' = 16; all other variables = 6. Total number of cases in tables: 201 to 263.
  - <sup>+</sup> - Kendal's Tau-c is significant at the .05 level.
  - <sup>++</sup> - " " " " " " " " .01 level.
  - <sup>+++</sup> - " " " " " " " " .001 level.
  - <sup>\*</sup> - Indicates that no significant relationship is found at the .10 level between the extent to which users depend on the source and any of the user characteristics.

committee meetings and consultancy reports are used in highly complex activities probably explains the positive relationship between the use of consultancy reports and the frequency with which civil servants attend committee meetings.

Finally, at the 5 percent level, there is a significant and positive relationship between the extent to which the user depends on conference/workshop papers and the number of conferences or workshops that the user had attended ( $p = .0416$ ; Kendall's Tau-c  $< .01$ ). However, only a weak direct relationship is found between the extent to which the user depends on management/professional journals and the user's level in the organizational hierarchy ( $p < .10$ ; Kendall's Tau-c  $< .01$ ).

These results indicate that while a higher level of experience with civil service functions and procedures is associated with a lower use of books and bulletins from the private sector, greater exposure to inter-departmental and external information forums such as courses, conferences, inter-ministerial meetings and task forces is associated with a higher use of the sources linked to those forums - consultancy reports, conference/workshop papers and management and professional journals.

## CHAPTER FOUR

### DISCUSSION

#### 4.0 Introduction.

There were five objectives for this study. Three of the objectives were to investigate the relationships between the use of information sources and the characteristics of the work performed by civil servants, the availability and accessibility of information sources in ministries, and the characteristics of information sources. The objectives were further stated in terms of the evaluation of eight hypotheses. The hypotheses were evaluated with respect to twelve types of information sources three of which were human and internal sources respectively. The other two objectives of the study relate to the need to expand the knowledge base for designing information systems and services for civil servants in Nigeria.

In this chapter, the results will be discussed in terms of the hypotheses of the study and their implications for information policy initiatives in the ministries. Subsequently, the methodological limitations of the study are discussed and recommendations for further research are made.

#### 4.1 Source use and the complexity of work activities.

One of the issues investigated in the study is the connection between the use of sources and the level of complexity and user discretion associated with the activities performed by civil servants. It was found that the average number of sources used in activities is directly related to work complexity and to the level of user discretion in the activities. In other words, the more complex an activity, or the higher the level of discretion the user has in the activity, the greater the average number of sources used.

Also, it was found that whereas the use of consultancy reports and conference/workshop papers were directly related to work complexity and user discretion, the use of internal files was inversely related to work complexity and user discretion. Finally, source use was found to be unrelated to the amount of time available for doing the different activities.

Three internal sources - persons in government institutions, government publications and internal files - were considered in this study. However, it was found that differences exist between users doing the most and the least complex activities only in the use of internal files. Similar findings were made when the users doing activities that allow little or much user discretion were compared. Among the internal sources, internal files are available within a user's own ministry or department, whereas persons in other

ministries and government publications are less exclusive to a particular ministry. Thus the findings suggest that low levels of work complexity and user discretion in work activities probably induce civil servants to emphasize information sources that are available in their respective ministries or departments.

Of the nine external sources considered in the study, consistent results were found only with respect to the use of consultancy reports and, to a lesser extent, conference and workshop papers. It was found that users doing activities that are the most complex or that allow much user discretion depend on these sources more often than those doing activities that are the least complex or that allow little user discretion.

The consistent results obtained with respect to consultancy reports merit discussion. Consultancy reports (sometimes referred to as contract research) are often compiled by persons external to the government department. Such reports are often commissioned by the department to generate background information on complex policy issues. Given that the reports are compiled by professional and intellectual experts within the private and academic systems, they provide a communication link between users in government departments and external research systems. However, once accepted by the client department, the report becomes a proprietary information source for users within the department and often assumes the mantle of an 'internal source'. This

probably explains why civil servants in highly complex activities tend to use consultancy reports more than other research-oriented sources such as academic journals, management/professional journals and books. From the perspective of the civil servant, these latter sources probably lack the apparently desirable attributes of consultancy reports - the focussing of reports on specific and organizationally-relevant issues, and the exclusive organizational control of the reports.

The findings with respect to the relationships between source use and work complexity and user discretion corroborate those made in previous studies (Culnan, 1983; Randolph and Finch, 1977; Van de Ven and Ferry, 1980), and validate the General Incongruity Adaptation Level (GIAL) model proposed by Streufert and associates for describing the relationship between environmental complexity (or incongruity) and levels of information processing activity (Streufert and Streufert, 1978).<sup>66</sup> The findings also demonstrate the observation often made that work complexity and user discretion are often directly associated in activities. Whereas work complexity is

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<sup>66</sup> The basic GIAL model hypothesized a direct relationship between environmental complexity and levels of information processing activity, but that the relationship becomes inverse at extremely high levels of environmental complexity. For the present findings to be used to validate the GIAL model, it would be necessary to assume that none of the activities analyzed in the study is characterized by extreme levels of complexity.



seen as an innate attribute of activities, user discretion seems to be a variable amenable to policy manipulation. Thus, if the objective of policy is to increase the use of more and external sources, an appropriate strategy would be to increase the amount of discretion that users have in those activities. However, there is a problem: given that work complexity and user discretion often co-vary, there is the issue of whether user discretion can be varied independently of work complexity. Indeed, it may be very risky to increase the amount of user discretion in activities without adequate recognition of the complexity of the work and the capabilities of the user.

#### 4.2 Source use and the extent to which sources provide required information.

It probably seems very obvious that the use of information sources would be greatly influenced by the extent to which the sources provide the information required for problem-solving activities. However, given that other factors (e.g., work complexity, availability of sources, timeliness and accuracy of information, etc.) can engender or inhibit the use of sources, one cannot be certain about the relationship between the use of specific sources and the extent to which the sources provide work-relevant information. In other words, to what extent is the subject content of sources an important predictor of source use in specific activities?

The hypothesis underlying this question was evaluated separately for each work activity, and in terms of five types of information - directory, research, procedural, legal and statistical. It was found that the sources which were highly rated on the provision of the information most often required in activities substantially overlapped those depended upon for information in the activities. However, there were a few exceptions. Though persons in academic institutions, and newspapers and magazines were highly rated on the provision of the information required in activities, they were seldom used by civil servants as sources of information. This finding suggests that there may be barriers to the exploitation of information from the sources. However, given that newspapers and magazines are considered by most civil servants to be available, adequate and very accessible, it seems that the barriers to the adequate exploitation of such sources may transcend their physical unavailability and/or inaccessibility.<sup>67</sup>

At a more aggregate level, it was found that statistical and procedural information were most often required for

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<sup>67</sup> One possible explanation for the finding with respect to newspapers and magazines is that the information conveyed by such media is often highly politicized. In the Nigerian setting, the news media are often either pro-government or pro-opposition, and seldom simultaneously both. Thus, civil servants may consider them as lacking in objectivity and ideological and political balance.

activities in the ministries and research information was least often required. These findings are suggestive of the types of information that can fruitfully be mediated and channeled by information systems in the ministries. However, the finding that research information is least often required does not mean that it is an unimportant type of information in ministries. Research information is probably periodically required to illuminate complex policy issues. And as was previously noted, consultancy reports are often commissioned to provide the required information.

Most library and information systems are based on the principle of maintaining and providing the information resources that provide task- or problem-relevant information. It would have been very discomfoting indeed had only a small overlap been observed between the sources which civil servants actually used for activities and the sources which they rated as best providers of work-relevant information. At least for the types of information considered in the study, it was found that the use of sources strongly correlated with the ability of the sources to provide work-relevant information.

#### 4.3 Source use and the availability, adequacy and accessibility of sources.

In the study, the relationships between source use and the availability, adequacy and accessibility of sources were investigated. It was found that perceptions by civil servants about the availability and adequacy of documentary sources

were not consistently related to the extent to which the sources were formally maintained and organized in the libraries of the ministries. This finding partially reflects the low organizational status of, and low levels of information dissemination services by the libraries in the ministries. Also, internal files, newspapers and government publications are considered by most civil servants to be available, adequate, and more accessible than other sources. In contrast, bulletins from the private sector, and academic and management/professional journals were considered by civil servants to be unavailable, inadequate and relatively inaccessible within the ministries. When both human and documentary sources are compared in terms of the frequency with which users encounter problems with them, sources linked to government institutions and agencies are generally considered to be more accessible than sources linked to the private sector or to research institutions.

However, to place these findings in a proper perspective, it must be noted that though internal files seems to be the most accessible source within ministries, some civil servants reported significant problems with them.<sup>68</sup> Given that internal files are used by civil servants more often than most other

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<sup>68</sup> Some respondents noted that they often encounter the following problems with internal files - misclassification and misfiling of documents and the inability to get all the documents relevant to an issue due to the inadequate cross-referencing of the documents.

sources, the effect of such problems is magnified. Conversely, the fact that journals and bulletins are least accessible to users may or may not be important depending upon the extent and frequency with which civil servants need them for their work.

It was also found that the extent to which civil servants depend on documentary sources is directly related to their perceptions about the availability and the adequacy of the sources in their ministries. However, the extent to which users depend on both the human and documentary sources was found to be unrelated to the accessibility of the sources measured either by the time that it takes to obtain the sources, or the frequency with which civil servants encounter problems with them.

The finding with respect to the accessibility of sources is very surprising, and is different than had been found in many previous studies (e.g., Culnan, 1983; O'Reilly, 1982). For the sources that are either used extremely frequently (e.g., internal files) or very seldom (e.g., bulletins from the private sector) the results could be due to the processes of environmental adaptation or lack of awareness. For example, for such sources as internal files, use is often frequent and forced by organizational regulations. Thus, users probably adapt, and consequently become less sensitive to the problems of access to the source. On the other hand, for sources that are seldom used, users may be insensitive to the problems of

access because of inadequate exposure to the sources. However, it is difficult to explain why for all the twelve sources considered in the study, source use and source accessibility are not correlated.

Though the findings with respect to the availability and adequacy of sources were as expected, it is still difficult and risky to infer cause and effect relationships between source use and perceptions by users about the availability and adequacy of sources in the ministries. While it is possible that the realization by the civil servant that a source is available and adequate in the ministry could induce him/her to use the source, it is equally possible that source use may have been induced by factors other than changes in the availability and adequacy status of the source in the ministry, and in the civil servant's perceptions about such changes. Two findings of the study are pertinent. First, it was found that perceptions by civil servants about the availability and adequacy of library-based sources were not consistently related to the extent to the sources are formally maintained and organized in ministries. Moreover, the fact that no meaningful relationship was found between source use and the accessibility of the sources could mean that the observed relationships between source use and perceptions about source availability and adequacy were either spurious or part of a complex network of interrelationships among the variables. Thus, it is risky to infer any cause-effect

relationship between source use and the availability and adequacy of the sources in the ministries.

For the same reason, it is difficult to make iron-clad recommendations about information policy initiatives in the ministries. Apart from internal sources, the use of most of the other types of sources (and especially those linked to the private sector) was low. Most civil servants also believed that such sources do not provide the types of information they most often need in their work. However, that state of affairs could be due to lack of awareness about these other sources due to the unavailability, inadequacy and/or inaccessibility of the sources. Evidence in support of this view is the currently underdeveloped state of library-based information dissemination services in the ministries. Accordingly, the development of library-based services in the ministries could be the required catalyst for increasing the awareness and use of external sources by civil servants.

#### 4.4 Source use and the attributes of sources.

How important are the various characteristics of information sources in explaining the use of different sources? An attempt was made to answer this question with respect to eight source characteristics - the ability of sources to provide directory, research, procedural, legal, statistical, accurate and authoritative information, and the brevity with which sources provide information. Analyses were

performed to compare the relative importance of the characteristics as correlates of source use.

It was found that civil servants consider internal sources - internal files, government publications and persons in state government ministries - to be the best providers of all but one of the types of information. The exception is research information. Secondly, private sector sources - persons in the private sector and bulletins from the private sector - were rated low in terms of the provision of all the types of information. Given the wealth of information of various types that is often available from private sector sources, this finding probably reflects the civil servants' lack of knowledge about the private sector sources (due probably to the infrequency with which they use them) than the poverty of the sources of the types of information.

Also, internal sources were the most highly rated in terms of the provision of both accurate information and information that enables users to justify or account for official decisions (authoritative information). Though academic journals were also highly rated on the provision of accurate information, they were rated very poorly in terms of the provision of authoritative information. The last finding demonstrates that the accuracy and the authoritativeness of information are two different things. It also partly confirms the conclusions reached in some previous studies (e.g., Larkey and Smith, 1984), that accurate information may, for strategic



reasons, be less acceptable within an organizational system than inaccurate information.

Of the eight source characteristics that were investigated, civil servants considered the sources to be most different with respect to the provision of procedural and authoritative information. It was also found that for most of the sources, there were significant and direct relationships between source use and the extent to which the sources provide procedural, legal, and authoritative information. In contrast, civil servants considered the sources to be least different with respect to the provision of directory information, and with respect to the brevity with which the sources provide information. Source use was generally independent of these characteristics.

The findings that civil servants do not see much difference among the sources on the question of source brevity, and that source use was unrelated to source brevity warrant discussion. One of the findings of the IDUPOM project was that civil servants in federal government ministries in Nigeria preferred original, full-length documents to summaries of such documents. The preceding findings suggest that civil servants are not very sensitive to differences in the brevity with which the sources provide information. Under such situation, whether documentary sources are full-length or summarized may be of little importance to the civil servants. This finding probably constitutes part of the explanation for

the IDUPOM finding. The other part may be that full-length documents probably have certain desirable features that summarized versions of the documents lack.<sup>69</sup>

There is yet another angle to the preceding findings. Information brevity probably becomes a desirable source attribute when a user is experiencing conditions of information overload, and of little importance under conditions of inadequate information flows. Thus, the seemingly strange findings made in the IDUPOM project and in this study are probably a reflection of the currently sub-optimal flows of information resources to civil servants in ministries in Nigeria.

#### 4.5 Source use and exposure of civil servants to information forums.

From the exploratory analyses of the data, it was found that the number of years that civil servants had spent in the service was inversely related to the use of books and bulletins from the private sector. In contrast, it seems that the frequency of exposure of civil servants to inter-ministerial and external information exchange forums such as courses, conferences, inter-ministerial meetings and task forces, is directly related to their self-reported use of the

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<sup>69</sup> It may be noted here that very often documents are used by civil servants as reference sources - to check on a fact, a regulation or a procedure. In such situations, summaries of the documents would not be very helpful.

sources linked to those forums - consultancy reports, conference/workshop papers and managements and professional journals. Though causal relationships were not proven in the analyses, these findings suggest (a) that extended periods of exposure to the civil service environment probably results in reduced external orientation in information-seeking behavior, and (b) that if the objective of policy is to counteract the effect of length of service (i.e., to increase the use of external sources), allowing civil servants to benefit from attendances at inter-ministerial meetings, in-service courses, and conferences or workshops may be an appropriate strategy.

#### 4.6 The importance of work activities in ministries.

One of the other important findings of the study was that the relative importance of various activities differed among professional groups of civil servants, and to a lesser extent among ministries. By itself, the finding is not dramatic. However when combined with other findings about the nature and information requirements of the activities, one has the ingredients for designing work-relevant information systems for particular ministries or professional groups of civil servants. Such a rational approach to the design of information systems in the ministries will be very crucial in the Nigerian government ministries of the 1990's. The thrust of the 1988 Civil Service Reforms (Federal Government of Nigeria, 1988) is to raise the level of professional and

technical expertise and specialization within the ministries, at the same time as the level of inter-ministerial connectivity is being reduced.<sup>70</sup> With time, as the restructuring processes continue, the increasing level of professional and technical specialization in the ministries will probably result in increased demand for more ministry-specific information and sources - information and sources that are relevant to the important activities in each ministry.

Of course, the preliminary results obtained from this study would need to be confirmed through other more intensive studies of specific ministries. The methodological approach developed and used in this study will be very useful in that endeavour.

#### 4.7 Development of library services in ministries.

The survey of the libraries of some of the ministries revealed that most of them are at the embryonic stage of development. The key characteristic of the libraries in the ministries was their low organizational status and visibility.

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<sup>70</sup> Before 1988, certain professional groups of civil servants, among them administrative secretaries, accountants, planning officers, etc. were often recruited by one ministry and posted to various other ministries as needed. With the 1988 reforms, that practice was to be discontinued, and each ministry is now expected to recruit, train and supervise its own complement of staff.

This seems largely due to the absence in the libraries of highly qualified information specialists who, by virtue of their higher status and professional expertise, can provide the initiative to raise the level of proactive library-based information services, and spearhead efforts to establish and/or strengthen links between the library systems and the existing systems for the control of files and classified documents. However, given the current financial constraints faced by most Nigeria government institutions today, the idea of investing in a high level information services position may not be an easy sell. With the exception of government publications and consultancy reports, civil servants consider most of the other library-based sources to be poor providers of the types of information that they require for activities in the ministries. Thus when it comes to making real decisions about budgetary allocations, it is likely that the idea of improving the level of library-based information services may be side-stepped.

In Chapter 1 it was noted that the ready availability of a source in users' environments often generated greater use of the source. It was also noted that in the absence of relevant information, available information (whether relevant or not) is often over-emphasized. Given the presently low level of development of library-based information services in the ministries, one cannot be sure that perceptions by civil servants about the relevance of external library-based

resources to work activities is real or a reflection of their subconscious adaptation over time to the currently inadequate flows of information resources in the ministries. It may be wise to experiment with improved library-based information services in the ministries not only for the preceding reason, but also in view of the re-structuring processes taking place in the ministries. With time, the decreasing level of inter-ministerial connectivity would necessitate the creation of self-contained information systems and services in individual ministries.

#### 4.8 Limitations of the study.

There are three main limitations of this study. The first is actually a characteristic limitation of survey research in which variables are only observed in situ without conscious manipulation or experimental control. Consequently, the analyses in the study have been correlational rather than causal. Though many significant and conceptually meaningful relationships were found between source use and some characteristics of activities, sources, users and ministries, no specific causal relationships between the variables were proven.

Secondly, the study employed two main methods of data collection - self-administered questionnaires and semi-structured interviews. Both instruments were highly structured. It is possible that the conceptual structure used

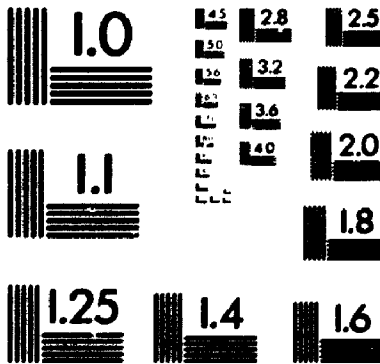
for the investigation of information use in the ministries may have overlooked some important variables or forced some other variables into conceptual pigeon-holes. Though a diverse range of sources was studied, it is possible that some important sources relevant to civil servants were overlooked. Similarly, only twelve activity and five information categories were pre-defined and employed in the instruments and analyses. It is possible that these entities were too broadly or narrowly defined.

The third limitation of the study is the nature and coverage of the sampling method used. There are 21 states in Nigeria each with between 8 and 10 ministries. However, the study's sample was purposely drawn from the population of senior civil servants located in the headquarters of eleven of the ministries in seven states. Given the non-probability nature of the sample, caution should be exercised about generalizing the results of this study to the entire population of senior civil servants in Nigeria. The high degree of similarity in organizational structure, staffing and functions of Nigerian state government ministries and the uniformity in the socio-political environments within which the ministries and civil servants operate suggest that a case may be made for a generalization of the findings of the study. However, it may also be true that the findings apply only to Nigerian senior civil servants located in the headquarters of their respective ministries.

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#### 4.9 Recommendations for further research.

In several respects, this has been an extensive, quantitative and preliminary study of the correlates of source use in government institutions in Nigeria. My recommendations for further study on the subject derive from both the greater insight to the processes of information utilization in government institutions gained in the study and the limitations of the study.

Firstly, given the limited sampling coverage achieved in the study, a fruitful area of further research would be to replicate the study with a different sample of civil servants from the other states of Nigeria. In the replication, certain aspects of the methodology of this study such as the definition and labelling of the types of sources, activities and information could also be varied. Moreover, parts of the methodology may be integrated with other frameworks for studying source use in the ministries. For instance, some of the issues covered in the study may be re-examined within a qualitative study of the processes and dynamics of source use in specific ministries.

Secondly, the final word has not yet been said about the linkages between source use and work activities in the ministries, and about the characteristics of the activities relevant to the study of source use. These areas require further study.

Thirdly, there is also the issue of the role that special libraries can play in the ministries. The study revealed that much needs to be done in the ministries to improve the quality, integration and functional relevance of library-based information services in the ministries. Studies about the nature of the information services that can raise productivity in the ministries are indicated.

Finally, there is also the issue of identifying the frequency and direction of information flows and communication between a specific ministry (or activities in the ministry) and other institutions in the environment. Such studies would help to throw some light on such questions as: with which other institutions are Ministries of Finance and Economic Planning (or of Agriculture and Natural Resources) mostly linked, and how can such links be facilitated or improved?

#### 4.10 Conclusion.

In the study some of the factors associated with the differential use of information sources by civil servants have been investigated. It has been established that source use is related to some characteristics of work activities, the availability and adequacy of sources, and some attributes of the sources and information users. Though it has not been possible to establish causal relationships between source use and these variables, the findings suggest that the variables

may indeed be crucial to the explanation of information-seeking behavior in organizational systems.

Additionally, the study has shed light on the nature and importance of the different work activities performed in government ministries, and on the features of, and problems with the provision of library-based information services in the ministries.

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## APPENDIX 1

### THE QUESTIONNAIRE USED IN THE STUDY

(NOTE: The questionnaire has been photo-reduced to fit on this and subsequent pages. The original is legal-size, with a typeset of 10 characters per inch).

#### Information in Work Project (IWP)

#### QUESTIONNAIRE

DEAR RESPONDENT,

Thank you for undertaking to complete this questionnaire. In almost all the questions, all you need to do is to circle a number or write down the ranks of items. Overall, you will need not more than 20 - 25 minutes to complete the questionnaire.

In this questionnaire, "Information" means spoken or written facts, ideas or opinions and "Information sources" refer to people, written or printed documents or places where information or information materials can be obtained.

Let us begin. The first question is at the back of this sheet.

**SECTION I**

The purpose of this section is to learn about the nature of the work activities that you perform in your ministry. Listed below are some work activities, some or all of which you may have performed or be performing in your present position.

**INSTRUCTIONS:**

- (1) Firstly, please scan through the work activities listed below and tick all activities that you perform in your ministry in your present position.
- (2) Next, check whether there are any other important work activities that you perform but that are not listed. If there are, briefly specify them in the spaces provided at the bottom of the list.
- (3) Finally, focus on the activities that you perform in your present position (those that you have ticked). Then, rank the activities by writing '1' beside the activity that you perform most often, '2' beside the activity that you perform second most often, and so on. Write the rank of each activity in the space provided.

WORK ACTIVITIES	RANK
<input type="checkbox"/> Evaluating project proposals.	_____
<input type="checkbox"/> Communicating with other departments on projects and programs.	_____
<input type="checkbox"/> Publication of information on projects/plans.	_____
<input type="checkbox"/> Implementing and/or inspecting projects, and compiling reports on the projects	_____
<input type="checkbox"/> Compiling and writing reports on various issues of public interest	_____
<input type="checkbox"/> Summarizing lengthy reports, memos, etc.	_____
<input type="checkbox"/> Gathering statistical data through surveys, fieldwork, visits to sites, communities, etc.	_____
<input type="checkbox"/> Evaluating field reports or data compiled by other staff members	_____
<input type="checkbox"/> General administrative work (e.g., approving leave rosters, evaluating staff, etc.).	_____
<input type="checkbox"/> Providing services directly to the public (e.g., advising the public, doing social work, approving contract applications, etc.).	_____
<input type="checkbox"/> Attending meetings within your own ministry	_____
<input type="checkbox"/> Attending meetings outside your ministry	_____

Other work activities (please specify below):

a. \_\_\_\_\_

b. \_\_\_\_\_

**IMPORTANT INSTRUCTION - PLEASE NOTE!**

For the remaining questions of this questionnaire, you will be asked to give your opinion about various issues by circling any one of the numbers 1, 2, 3, 4, or 5. For each question, an indication of what the lowest and highest numbers (i.e., 1 and 5) stand for will be given. This is to guide you.

For each question, circle a number on the basis of how close your opinion about an issue is to the meaning implied by the number 1 or to the meaning implied by the number 5. You may tick "I don't know" if you cannot give an opinion on an issue.

**SECTION II**

In this section, we would like to learn about the nature of the work activity that you do most often in your ministry. If there are more than one activity that you do equally most often, please decide which of them you prefer to talk about. Then, enter in the space below a brief description of the activity. The description should be like one of those given in the previous section.

ACTIVITY THAT YOU  
DO MOST OFTEN: \_\_\_\_\_

**INSTRUCTION:** Please answer the questions in this section with respect only to the work activity that you have entered in the space above. Hereafter, the activity will be referred to as your major work activity.

1. In doing your major work activity, how often do you require each of the following types of information in the activity? Please circle a number for each type of information.

	never			very often	I don't know
Information about people, institutions, companies, places, etc.).	1	2	3	4 5	( )
Results of scientific and social research, surveys, etc.).	1	2	3	4 5	( )
Information about procedures for doing <u>your major work activity</u> ?	1	2	3	4 5	( )
Summary statistics about the population, government revenues and budgets, commerce and industry, agriculture, etc.	1	2	3	4 5	( )
Information about laws and statutes, administrative rules, executive orders, etc.	1	2	3	4 5	( )

2. In doing your major work activity,

(a) to what extent do you believe that there are clear and specific ways to do the activity?

(small extent) 1 2 3 4 5 (great extent) ( ) I don't know

(b) how easy is it for you to know whether you have done the activity correctly?

(very easy) 1 2 3 4 5 (very difficult) ( ) I don't know

(c) how much discretion do you have in deciding on the information sources from which to obtain the information that you need?

(very little) 1 2 3 4 5 (very much) ( ) I don't know

(d) how clear are you about the sources of information that you can use in the activity?

(very unclear) 1 2 3 4 5 (very clear) ( ) I don't know

(e) to what extent are the information sources that you may use in the activity prescribed by official regulations?

(small extent) 1 2 3 4 5 (great extent) ( ) I don't know

(f) how often do difficult problems arise for which there are no immediate or clear solutions?

(not often) 1 2 3 4 5 (very often) ( ) I don't know

3. When you do an instance of your major work activity, at least how much time do you normally need to complete the work or your portion of the work?

- ( ) a few hours                      ( ) 1 week                      ( ) 2-3 months
- ( ) within a day                      ( ) 2-3 weeks                      ( ) 4-6 months
- ( ) 2-3 days                      ( ) 1 month                      ( ) over 6 months

4. In doing your major work activity, how often do you feel the time pressure of deadlines for the completion of the activity?

(not often) 1 2 3 4 5 (very often) ( ) I don't know

5. When you do the major work activity, how often do you produce each of the following types of information?

	never		very often		I don't know	
Information about people, institutions, companies, places, etc.	1	2	3	4	5	( )
Written reports on projects, social issues, etc.	1	2	3	4	5	( )
Information about procedures by which other staff members may do their work activities.	1	2	3	4	5	( )
Summary statistics about the population, government revenues and budgets, commerce and industry, agriculture, etc.	1	2	3	4	5	( )

6. How brief and succinct would you describe the communication, information, or documentation that you produce when you do your major work activity?

(very brief) 1 2 3 4 5 (very lengthy) ( ) I don't know

**PLEASE NOTE!**

In answering the next question (Question 7), please take note of how each of the information sources is described. This is because throughout the rest of the questionnaire, questions will be asked about other aspects of these same sources.

7. When you do your major work activity, to what extent do you depend on each of the following information sources for obtaining the information that you need in the activity?

	not at					very	I don't
	all					great	know
	1	2	3	4	5		( )
Persons in state government ministr:as (through face-to-face or telephone discussions)?	1	2	3	4	5		( )
Persons in universities and research institutes (through face-to-face or telephone discussions)?	1	2	3	4	5		( )
Persons in private sector organizations (through face-to-face or telephone discussions)?	1	2	3	4	5		( )
Internal files (of your ministry)?	1	2	3	4	5		( )
Government publications (plans, budget:; gazettes, etc. published by Nigerian Federal and state governments)?	1	2	3	4	5		( )
Consultancy reports (commissioned by the Federal and various state governments of Nigeria)?	1	2	3	4	5		( )
Conference (workshop) papers (i.e., papers presented at various state and national conferences in Nigeria)?	1	2	3	4	5		( )
Academic journals (and periodicals)?	1	2	3	4	5		( )
Management and professional journals?	1	2	3	4	5		( )
Newspapers and magazines?	1	2	3	4	5		( )
Books (about public finance, economic development, social issues, agriculture, etc.)?	1	2	3	4	5		( )
Bulletins from private sector institutions (pamphlets, annual reports, bulletins, etc.)?	1	2	3	4	5		( )
Other information source (specify): _____	1	2	3	4	5		( )
Other information source (specify): _____	1	2	3	4	5		( )



**SECTION III**

The purpose of this section is to learn about the nature of the information sources and services that are available to you in your work environment.

1. Listed below are some types of documentary information sources some or all of which may be available in your ministry to help meet the information needs of staff members of the ministry.

For each of the information sources, please tick all and only the types of documents that are

- (a) available in your ministry;
- (b) available in sufficient number and variety;
- (c) stored and kept in arranged order

	TICK HERE IF SOURCE IS AVAILABLE AT ALL IN YOUR MINISTRY	TICK HERE IF SOURCE IS AVAILABLE IN SUFFICIENT NUMBER	TICK HERE IF SOURCE IS KEPT IN ARRANGED ORDER
Government publications?	( )	( )	( )
Consultancy reports?	( )	( )	( )
Conference papers?	( )	( )	( )
Academic journals?	( )	( )	( )
Management/professional journals?	( )	( )	( )
Newspapers and magazines?	( )	( )	( )
Books?	( )	( )	( )
Bulletins and pamphlets from the private sector?	( )	( )	( )

2. Are you aware of any written listing, catalogue or index of all the types of documents (in question 1) that are available in your ministry? Yes / No

3. For those of the following information sources that you use in your work, how much time does it normally take for you to obtain each of them whenever you need information from them in your work?

	little time	much time	I don't know
Internal files of your ministry?	1 2 3 4 5		( )
Government publications?	1 2 3 4 5		( )
Consultancy reports?	1 2 3 4 5		( )
Conference or workshop papers?	1 2 3 4 5		( )
Academic journal?	1 2 3 4 5		( )
Management/professional journals?	1 2 3 4 5		( )
Newspapers and magazines?	1 2 3 4 5		( )
Books?	1 2 3 4 5		( )
Bulletins from the private sector?	1 2 3 4 5		( )

4. Do you know of any libraries or information services in other government ministries or agencies in the city where you work? Yes / No

IF YOU ANSWERED 'NO' TO THE LAST QUESTION, GO ON TO QUESTION 6.

5. Have you ever used in your official work information documents from the library or information service of any of the other ministries or agencies? Yes / No

6. Do you know of any libraries or information services in any other non-governmental organization in the city where you work? Yes / No

IF YOU ANSWERED 'NO' TO THE LAST QUESTION, GO ON TO QUESTION 8.

7. Have you ever used in your official work information documents from the library or information service of any of the other non-governmental organizations? Yes / No
8. In your work experience, and for those of the following people with whom you interact in your official work how easy has it often been to obtain access to each of them?

	not easy at all					very easy	I don't know
Higher ranking officials of other ministries of the government of your state?	1	2	3	4	5	( )	
Officials of federal govt. agencies in your state?	1	2	3	4	5	( )	
University lecturers and researchers in research institutes?	1	2	3	4	5	( )	
Officials of local governments in your state?	1	2	3	4	5	( )	
The management of private companies in your state?	1	2	3	4	5	( )	

9. In your ministry, and for those of the following sources that you use in your work, how often do you encounter problems in getting the information that you need from each of them?

	never					very often	I don't know
Persons in other state government ministries?	1	2	3	4	5	( )	
Persons in academic and research institutions?	1	2	3	4	5	( )	
Persons in private sector organizations?	1	2	3	4	5	( )	
Internal files of your ministry?	1	2	3	4	5	( )	
Government publications?	1	2	3	4	5	( )	
Consultancy reports?	1	2	3	4	5	( )	
Conference/workshop papers?	1	2	3	4	5	( )	
Academic journals?	1	2	3	4	5	( )	
Management/professional journals?	1	2	3	4	5	( )	
Newspapers and magazines?	1	2	3	4	5	( )	
Books?	1	2	3	4	5	( )	
Bulletins from the private sector?	1	2	3	4	5	( )	

**SECTION IV**

The purpose of this section is to have your opinion on the extent to which various information sources are able to provide certain types of information when such information is needed in the various work activities that you perform in your ministry.

1. In your estimation, how would you rate each of the following information sources in terms of

(a) the ability of the source to provide information about people, institutions, companies, places, etc.)?

	very poor			very good	I don't know	
Persons in govt. ministries?	1	2	3	4	5	( )
Persons in academic institutions?	1	2	3	4	5	( )
Persons in the private sector?	1	2	3	4	5	( )
Internal (ministerial) files?	1	2	3	4	5	( )
Government publications?	1	2	3	4	5	( )
Consultancy reports?	1	2	3	4	5	( )
Conference or workshop papers?	1	2	3	4	5	( )
Academic journals?	1	2	3	4	5	( )
Management/professional journals?	1	2	3	4	5	( )
Newspapers and magazines?	1	2	3	4	5	( )
Books?	1	2	3	4	5	( )
Bulletins from the private sector?	1	2	3	4	5	( )

(b) the ability of the source to provide the results of scientific and social research, etc.)?

	very poor			very good	I don't know	
Persons in govt. ministries?	1	2	3	4	5	( )
Persons in academic institutions?	1	2	3	4	5	( )
Persons in the private sector?	1	2	3	4	5	( )
Internal (ministerial) files?	1	2	3	4	5	( )
Government publications?	1	2	3	4	5	( )
Consultancy reports?	1	2	3	4	5	( )
Conference or workshop papers?	1	2	3	4	5	( )
Academic journals?	1	2	3	4	5	( )
Management/professional journals?	1	2	3	4	5	( )
Newspapers and magazines?	1	2	3	4	5	( )
Books?	1	2	3	4	5	( )
Bulletins from the private sector?	1	2	3	4	5	( )

(c) the ability of the source to provide information about laws and statutes, administrative rules, executive orders, etc.?

	very poor			very good	I don't know	
Persons in govt. ministries?	1	2	3	4	5	( )
Persons in academic institutions?	1	2	3	4	5	( )
Persons in the private sector?	1	2	3	4	5	( )
Internal (ministerial) files?	1	2	3	4	5	( )
Government publications?	1	2	3	4	5	( )
Consultancy reports?	1	2	3	4	5	( )
Conference or workshop papers?	1	2	3	4	5	( )
Academic journals?	1	2	3	4	5	( )
Management/professional journals?	1	2	3	4	5	( )
Newspapers and magazines?	1	2	3	4	5	( )
Books?	1	2	3	4	5	( )
Bulletins from the private sector?	1	2	3	4	5	( )

(d) the ability of the source to provide summary statistics on the population, government revenues and expenditures, commerce and industry, agriculture, etc.? 183

	very poor					very good	I don't know
Persons in govt. ministries?	1	2	3	4	5	( )	( )
Persons in academic institutions?	1	2	3	4	5	( )	( )
Persons in the private sector?	1	2	3	4	5	( )	( )
Internal (ministerial) files?	1	2	3	4	5	( )	( )
Government publications?	1	2	3	4	5	( )	( )
Consultancy reports?	1	2	3	4	5	( )	( )
Conference or workshop papers?	1	2	3	4	5	( )	( )
Academic journals?	1	2	3	4	5	( )	( )
Management/professional journals?	1	2	3	4	5	( )	( )
Newspapers and magazines?	1	2	3	4	5	( )	( )
Books?	1	2	3	4	5	( )	( )
Bulletins from the private sector?	1	2	3	4	5	( )	( )

(e) the ability of the source to provide information about procedures for doing your official work activities?

	very poor					very good	I don't know
Persons in govt. ministries?	1	2	3	4	5	( )	( )
Persons in academic institutions?	1	2	3	4	5	( )	( )
Persons in the private sector?	1	2	3	4	5	( )	( )
Internal (ministerial) files?	1	2	3	4	5	( )	( )
Government publications?	1	2	3	4	5	( )	( )
Consultancy reports?	1	2	3	4	5	( )	( )
Conference or workshop papers?	1	2	3	4	5	( )	( )
Academic journals?	1	2	3	4	5	( )	( )
Management/professional journals?	1	2	3	4	5	( )	( )
Newspapers and magazines?	1	2	3	4	5	( )	( )
Books?	1	2	3	4	5	( )	( )
Bulletins from the private sector?	1	2	3	4	5	( )	( )

.....

*In each of the next two questions, a statement is presented followed by a list of information sources. Please give your opinion on the extent to which you believe the given statement is true of each of the information sources. Circle a number for each information source.*

2. STATEMENT: "The information that I can obtain from this source is often very accurate."

	not true					very true	I don't know
Persons in govt. ministries?	1	2	3	4	5	( )	( )
Persons in academic institutions?	1	2	3	4	5	( )	( )
Persons in the private sector?	1	2	3	4	5	( )	( )
Internal (ministerial) files?	1	2	3	4	5	( )	( )
Government publications?	1	2	3	4	5	( )	( )
Consultancy reports?	1	2	3	4	5	( )	( )
Conference or workshop papers?	1	2	3	4	5	( )	( )
Academic journals?	1	2	3	4	5	( )	( )
Management/professional journals?	1	2	3	4	5	( )	( )
Newspapers and magazines?	1	2	3	4	5	( )	( )
Books?	1	2	3	4	5	( )	( )
Bulletins from the private sector?	1	2	3	4	5	( )	( )

3. STATEMENT: "The information that I can obtain from this source is often presented in a brief and succinct format."

	not true				very true	I don't know
Persons in govt. ministries?	1	2	3	4	5	( )
Persons in academic institutions?	1	2	3	4	5	( )
Persons in the private sector?	1	2	3	4	5	( )
Internal (ministerial) files?	1	2	3	4	5	( )
Government publications?	1	2	3	4	5	( )
Consultancy reports?	1	2	3	4	5	( )
Conference or workshop papers?	1	2	3	4	5	( )
Academic journals?	1	2	3	4	5	( )
Management/professional journals?	1	2	3	4	5	( )
Newspapers and magazines?	1	2	3	4	5	( )
Books?	1	2	3	4	5	( )
Bulletins from the private sector?	1	2	3	4	5	( )

#### SECTION V

It is often noted that in the civil service, concerns about accountability (to supervisors, to the public, etc.) should underlie all official activities. Accountability is variously understood to mean the need to ensure that ministerial policies and activities are justified, that decisions are based on information from important sources, that policies are made after proper consultations, etc. The only question of this section is intended to obtain your view on the matter.

1. In your accumulated experience, to what extent does each of the following information sources provide the information that enables you to realistically justify (i.e., account for) your official decisions to your supervisor/superior?

	small extent				great extent	I don't know
Persons in govt. ministries?	1	2	3	4	5	( )
Persons in academic institutions?	1	2	3	4	5	( )
Persons in the private sector?	1	2	3	4	5	( )
Internal (ministerial) files?	1	2	3	4	5	( )
Government publications?	1	2	3	4	5	( )
Consultancy reports?	1	2	3	4	5	( )
Conference or workshop papers?	1	2	3	4	5	( )
Academic journals?	1	2	3	4	5	( )
Management/professional journals?	1	2	3	4	5	( )
Newspapers and magazines?	1	2	3	4	5	( )
Books?	1	2	3	4	5	( )
Bulletins from the private sector?	1	2	3	4	5	( )

SECTION VI

The purpose of this section is obtain your views on various issues pertaining to social and economic objectives and the funding of the production and dissemination of information in Nigeria. Please be frank as much as possible.

1. How much influence through financial funding do you believe agencies of Nigerian federal and state governments have on the nature of the information provided by each of the following information sources?

	very little					very much	I don't know
Government publications?	1	2	3	4	5	( )	
Consultancy reports?	1	2	3	4	5	( )	
Conference or workshop papers?	1	2	3	4	5	( )	
Academic journals?	1	2	3	4	5	( )	
Management/professional journals?	1	2	3	4	5	( )	
Newspapers and magazines?	1	2	3	4	5	( )	
Books?	1	2	3	4	5	( )	
Bulletins from the private sector?	1	2	3	4	5	( )	

2. How much influence through the contribution of ideas do you believe Nigerian civil servants have on the information that is made available by each of the following information sources?

	very little					very much	I don't know
Government publications?	1	2	3	4	5	( )	
Consultancy reports?	1	2	3	4	5	( )	
Conference or workshop papers?	1	2	3	4	5	( )	
Academic journals?	1	2	3	4	5	( )	
Management/professional journals?	1	2	3	4	5	( )	
Newspapers and magazines?	1	2	3	4	5	( )	
Books?	1	2	3	4	5	( )	
Bulletins from the private sector?	1	2	3	4	5	( )	

3. To what extent do you believe that each of the following groups of people have the same views and concerns about socio-economic development in Nigeria as you do in relation to your official work activities?

	zero extent					very great extent	I don't know
Staff members of Federal government ministries?	1	2	3	4	5	( )	
Researchers in Nigerian research institutes?	1	2	3	4	5	( )	
Academics in Nigerian universities?	1	2	3	4	5	( )	
Nigerian newspaper journalists?	1	2	3	4	5	( )	
The management of private sector organizations?	1	2	3	4	5	( )	
The staff members of international organizations operating in Nigeria?	1	2	3	4	5	( )	

4. To what extent do you believe that each of the following groups of people really appreciate the problems faced by civil servants in your state in the planning and implementation of government programmes?

	zero extent					very great extent	I don't know
Staff members of Federal government ministries?	1	2	3	4	5	( )	
Researchers in Nigerian research institutes?	1	2	3	4	5	( )	
Academics in Nigerian universities?	1	2	3	4	5	( )	
Nigerian newspaper journalists?	1	2	3	4	5	( )	
The management of private sector organizations?	1	2	3	4	5	( )	
The staff members of international organizations operating in Nigeria?	1	2	3	4	5	( )	

#### SECTION VII

This is the personal information section. Answers to the following questions are very important for analyzing the data in other parts of the questionnaire. As previously indicated, all responses will be kept confidential.

1. State: \_\_\_\_\_
2. Ministry: \_\_\_\_\_
3. Section/Unit of ministry: \_\_\_\_\_
4. Official designation/position \_\_\_\_\_
5. Number of years in the service (to the nearest year)? \_\_\_\_\_
6. Number of years in present post/position \_\_\_\_\_
7. No. of in-service courses that you have attended to date \_\_\_\_\_
8. Number of conferences/workshops you have attended to date (whether you were officially sponsored or not)? Tick one.  
( ) nil    ( ) 1-3    ( ) 4-10    ( ) more than 10
9. Number of inter-ministerial task forces on which you have served to date? Tick one.  
( ) nil    ( ) 1-3    ( ) 4-10    ( ) more than 10
10. Average number of inter-ministerial committee meetings that you attend per month? \_\_\_\_\_

END OF QUESTIONNAIRE \*\*\*\*\*

Dear respondent,

Thank you very much for completing the questionnaire. Please send the questionnaire to me in the accompanying envelope.

APPENDIX 2COVER LETTER OF THE QUESTIONNAIRE

---

Dear Respondent,

Good day to you. I am writing to you from the Department of Library, Archival and Information Studies of the University of Ibadan. I am currently doing a research study entitled the 'Information in Work Project (IWP)'.

The purpose of the project is to learn about the nature and information requirements of the various work activities performed in state government agencies. Moreover, the project is intended to assess the relative desirability of certain characteristics of information sources, and the information preferences of civil servants. The IWP is being undertaken with civil servants in various ministries/departments in the 21 states of Nigeria. The study is expected to lead to recommendations on the improvement of the information resources available to public servants in various government ministries.

The enclosed questionnaire is one of the data collection strategies of the project, and you happened to be included in a random sample of civil servants to whom the questionnaire is being sent. In effect, I am asking you to participate in the project by kindly completing the questionnaire.

Sir/Madam, I want to assure you that the project is not about political or confidential matters. You should also be assured that your answers to items in the questionnaire will be strictly confidential. Your answers will be grouped with those of other people across the country and no individual person will be identified in any report of the project.

For the IWP to be successfully concluded and yield useful results, it is important that you answer each question very frankly based on the experience that you have gained in your work environment.

Please send the completed questionnaire to me in the attached envelope. Return postage is provided. Thank you.

Yours sincerely,

Mutawakilu A. Tiamiyu  
Researcher.



APPENDIX 3INFORMATION ABOUT THE STUDY GIVEN TO THE  
EXPERT EVALUATORS OF THE PRETEST QUESTIONNAIRE.

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Dear \_\_\_\_\_,

Good day to you. I am currently doing a research study entitled "Organization-related factors in the use of information source in public sector institutions in Nigeria". The study is to be undertaken with senior public servants in state government ministries/departments in Nigeria.

A key data collection tool to be used in the study is the survey questionnaire, a draft of which is enclosed with this letter. To evaluate the items in the questionnaire, I have opted to sample the opinion of experienced intellectuals and public administrative personnel on such matters as the reasonableness and clarity of the questions.

The foregoing is the reason I am writing to you. In effect, I hope to benefit from your experience and/or knowledge of decision-making and information utilization processes in public service environments. I am hoping that you will be able to afford some time to go over and comment on the appropriateness, clarity and other aspects of the questions included in the questionnaire.

The following are suggestive of the kind of issues that you may like to address:

- reasonableness of each question in the context of the work  
work situation of the average senior public servant
- phrasing of the questions
- sequencing of questions
- length of the questionnaire
- any other aspects that you consider out-of-place

If you agree to my request, please note that your help will be greatly appreciated and (unless you request anonymity) acknowledged in reports from the research study. However, ultimate responsibility for problems with or errors in the final questionnaire will still be mine.

Yours sincerely,

Mutawakilu A. Tiamiyu,  
Researcher.

APPENDIX 3 (Continued)

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## INFORMATION ABOUT THE STUDY

## Research objectives:

To (1) assess the relative influence of the nature of organizational work activities and other organizational factors on information-seeking behavior in public sector organizations, and (2) assess the relative importance and desirability of various attributes of information sources.

## Research subjects:

Senior civil servants employed in Ministries of Economic Development and Planning of the states of Nigeria will be surveyed to assess their views on the nature and characteristics of various sources of information in relation to the work activities that they do, and the objectives of their ministries/departments. The study will initially involve the administration of a questionnaire. Subsequently, follow-up interviews may be conducted with a smaller sample of respondents.

## General research direction:

The underlying thesis of the present study is that users' perceptions of source importance will be highly correlated in specific ways with certain other attributes of information sources and with the information needed in and/or produced by various work activities. The other attributes of information sources include the organizational control of the sources, the reliability, brevity and accessibility of sources, the extent to which the information provided by sources meets the requirements of work activities, of public accountability, etc.

**APPENDIX 4****DESCRIPTION AND LABELS OF THE VARIABLES IN THE QUESTIONNAIRE**

DESCRIPTION OF VARIABLE	VARIABLE LABEL
<b>A. <u>VARIABLES PERTAINING TO THE VARIOUS WORK ACTIVITIES PERFORMED BY THE RESPONDENT.</u></b>	
1. Whether the respondent performs a given given work activity.	PERFORMANCE OF ACTIVITY __ <sup>1</sup>
2. Relative frequency (compared to other activities) with which the respondent performs the different work activities.	FREQUENCY OF ACTIVITY __ <sup>1</sup>
<b>B. <u>VARIABLES PERTAINING TO THE MAJOR WORK ACTIVITY PERFORMED BY THE RESPONDENT.</u></b>	
1. The label or description of the major work activity.	MAJOR WORK ACTIVITY __ <sup>1</sup>
2. Frequency with which (a) directory information is required. (b) research information is required. (c) procedural information is required. (d) legal information is required. (e) statistical information is required.	NEED FOR DIRECTORY INFORMATION NEED FOR RESEARCH INFORMATION NEED FOR PROCEDURAL INFORMATION NEED FOR LEGAL INFORMATION NEED FOR STATISTICAL INFORMATION
3. Clarity about of ways of doing the activity.	CLARITY ABOUT METHODS
4. Difficulty of determining whether the activity has been correctly done.	DIFFICULTY OF DETERMINING EFFECTIVENESS
5. Discretion in the use of information sources.	DISCRETION IN USE OF SOURCES
6. Clarity about the sources of information. that may be used in the activity.	CLARITY ABOUT SOURCES
7. Extent to which sources are prescribed by official regulations.	PRESCRIPTION OF SOURCES BY REGULATIONS
8. Frequency with which difficult problems arise.	FREQUENCY OF DIFFICULT PROBLEMS

(Appendix is continued on the next page ...)

APPENDIX 4 (Continued)

DESCRIPTION OF VARIABLE	VARIABLE LABEL
9. Length of time often needed to complete an instance of the activity.	TIME REQUIRED FOR WORK
10. Frequency with which the pressure of deadlines is experienced in the activity.	PRESSURE OF DEADLINES
11. Frequency with which	
(a) directory information is produced.	OUTPUT OF DIRECTORY INFORMATION
(b) research information is produced.	OUTPUT OF RESEARCH INFORMATION
(c) procedural information is produced.	OUTPUT OF PROCEDURAL INFORMATION
(d) statistical information is produced.	OUTPUT OF STATISTICAL INFORMATION
12. Brevity of the information produced in the activity.	BREVITY OF INFORMATION OUTPUT
13. Extent to which a specified source is depended upon for information in the activity.	DEPENDENCY ON SOURCE <u>  2</u>
 <u>C. VARIABLES PERTAINING TO THE AVAILABILITY, ACCESSIBILITY AND USE OF VARIOUS DOCUMENTARY SOURCES IN THE MINISTRIES.</u>	
1. Whether a specified source is available at all in the ministry,	AVAILABILITY OF SOURCE <u>  3</u>
2. Whether a specified source is available in the ministry in sufficient number or variety to meet requirements.	ADEQUACY OF SOURCE <u>  3</u>
3. Whether a specified documentary source is kept in arranged order in the ministry.	ARRANGEMENT OF SOURCE <u>  3</u>
4. Whether the respondent is aware of the existence of an index, catalog or written list of all the documentary sources that are available in the ministry.	AWARENESS ABOUT INDEX
5. Extent of time that it often takes to obtain a specified documentary source when needed.	TIME TO OBTAIN SOURCE <u>  3</u>

(Appendix is continued on the next page ...)

APPENDIX 4 (Continued)

DESCRIPTION OF VARIABLE	VARIABLE LABEL
6. Whether the respondent knows of other libraries or information services in other government ministries and agencies in same city.	AWARENESS OF LIBRARIES IN OTHER GOVERNMENT AGENCIES
7. Whether respondent uses in official work documents obtained from the library of the other ministries/agencies.	USE OF DOCUMENTS FROM GOVERNMENT LIBRARIES
8. Whether the respondent knows of other libraries or information services in other non-governmental organizations in same city.	AWARENESS OF LIBRARIES IN NON-GOVERNMENT INSTITUTIONS
9. Whether respondent uses in official work documents from the library of the other non-governmental organizations.	USE OF DOCUMENTS FROM NON-GOVERNMENT INSTITUTIONS
10. Ease with which the respondent can obtain access to	
(a) higher-ranking officials of other ministries of the same government.	EASE OF ACCESS TO STATE GOVERNMENT OFFICIALS
(b) officials of federal government agencies in the state.	EASE OF ACCESS TO FEDERAL GOVERNMENT OFFICIALS
(c) university lecturers and researchers in research institutes.	EASE OF ACCESS TO ACADEMICS/RESEARCHERS
(d) officials of local governments in the state.	EASE OF ACCESS TO LOCAL GOVERNMENT OFFICIALS
(e) the managements of private sector companies in the state.	EASE OF ACCESS TO PRIVATE COMPANIES
11. Frequency with which problems are encountered in connection with a specified information source.	PROBLEMS WITH SOURCE __ <sup>2</sup>
<b>D. <u>VARIABLES PERTAINING TO VARIOUS CHARACTERISTICS OF INFORMATION SOURCES.</u></b>	
1. Extent to which a specified source provides	
(a) directory information.	PROVISION OF DIRECTORY INFORMATION BY SOURCE __ <sup>2</sup>
(b) research information.	PROVISION OF RESEARCH INFORMATION BY SOURCE __ <sup>2</sup>

(Appendix is continued on the next page ...)

APPENDIX 4 (Continued)

DESCRIPTION OF VARIABLE	VARIABLE LABEL
(c) legal information.	PROVISION OF LEGAL INFORMATION BY SOURCE __ 2
(d) statistical information.	PROVISION OF STATISTICAL INFORMATION BY SOURCE __ 2
(e) procedural information.	PROVISION OF PROCEDURAL INFORMATION BY SOURCE __ 2
2. Extent to which a specified source provides accurate information.	ACCURACY OF SOURCE __ 2
3. Brevity with which a specified source presents information.	BREVITY OF SOURCE __ 2
4. Extent to which a specified source provides information that enables the respondent to justify or account for official decisions.	AUTHORITATIVENESS OF SOURCE __ 2
<b>E. <u>VARIABLES PERTAINING TO THE EXTENT OF GOVERNMENTAL INFLUENCE OVER INFORMATION SOURCES.</u></b>	
1. Extent of financial influence over a specified source by agencies of government.	FINANCIAL INFLUENCE BY GOVERNMENT AGENCIES ON SOURCE __ 3
2. Extent of influence over a specified source by ideas held by civil servants.	INFLUENCE OF IDEAS FROM CIVIL SERVANTS ON SOURCE __ 3
<b>F. <u>VARIABLES PERTAINING TO PERCEPTIONS BY RESPONDENTS ABOUT THE VIEWS OF VARIOUS SOCIAL GROUPS.</u></b>	
1. Similarity of the views of the respondent vis-a-vis those of	
(a) officials of federal government agencies in Nigeria.	SIMILARITY OF VIEWS WITH FEDERAL GOVERNMENT OFFICIALS
(b) researchers in research institutes in Nigeria.	SIMILARITY OF VIEWS WITH RESEARCHERS
(c) academics in Nigerian universities.	SIMILARITY OF VIEWS WITH ACADEMICS

(Appendix is continued on the next page ...)

APPENDIX 4 (Continued)

DESCRIPTION OF VARIABLE	VARIABLE LABEL
(d) newspaper journalists in Nigeria.	SIMILARITY OF VIEWS WITH JOURNALISTS
(e) the management of private sector organizations in Nigeria.	SIMILARITY OF VIEWS WITH PEOPLE IN THE PRIVATE SECTOR
(f) officials of international organizations in Nigeria.	SIMILARITY OF VIEWS WITH THE STAFF OF INTERNATIONAL ORGANIZATIONS
<b>2. Extent to which the respondent believes that</b>	
(a) officials of federal government agencies in Nigeria	APPRECIATION BY FEDERAL GOVERNMENT OFFICIALS
(b) researchers in research institutes in Nigeria	APPRECIATION BY RESEARCHERS
(c) academics in the universities in Nigeria	APPRECIATION BY ACADEMICS
(d) newspaper journalists in Nigeria	APPRECIATION BY JOURNALISTS
(e) the managements of private sector organizations in Nigeria	APPRECIATION BY PEOPLE IN THE PRIVATE SECTOR
(f) officials of international organizations operating in Nigeria	APPRECIATION BY THE STAFF OF INTERNATIONAL ORGANIZATIONS
appreciate the problems faced by civil servants at the state level.	
<b>G. <u>VARIABLES PERTAINING TO THE PERSONAL CHARACTERISTICS OF THE RESPONDENT.</u></b>	
1. State (government) where the respondent works.	STATE
2. Ministry where the respondent works.	MINISTRY
3. Division or section of the ministry where the respondent works.	DIVISION OF MINISTRY
4. Position or rank of the respondent.	POSITION

(Appendix is continued on the next page ...)

APPENDIX 4 (Continued)

DESCRIPTION OF VARIABLE	VARIABLE LABEL
5. Number of years the respondent had been working in the ministry (civil service).	YEARS IN SERVICE
6. Number of years the respondent has spent in the current position or rank.	YEARS IN CURRENT POSITION
7. Number of in-service courses the respondent has attended.	COURSES ATTENDED
8. Number of conferences or workshops the respondent has attended.	CONFERENCES ATTENDED
9. Number of task forces on which the respondent has served.	TASK FORCES SERVED
10. Average number of inter-ministerial committee meetings attended by the respondent per month.	MEETINGS PER MONTH

- NOTES:
- 1 - Substitute in turn the name/label of a work activity. (See the list of activities in Appendix 6).
  - 2 - Substitute in turn the name/label of any of the information source focussed upon in the study. (See the list of sources in Appendix 8).
  - 3 - Substitute in turn the name/label of any of the documentary information sources. (See the list of sources in Appendix 8).



APPENDIX 5

QUESTIONS USED IN INTERVIEWS WITH THE STAFF OF THE  
MINISTRY LIBRARIES

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State? \_\_\_\_\_ Ministry? \_\_\_\_\_

A. AVAILABILITY OF SERVICES, STAFFING, LOCATION AND OPERATIONS

1. Is there a library/book storage facility in the ministry?
2. Is there any information dissemination service based on the available resources?
3. Is the information service (if any) provided
  - (i) on a continuous basis?
  - (ii) only on request from staff members?

4. Has the library/book storage facility its own staff?

If yes, what are the educational and library and information science professional qualifications of the library staff members?

5. Division of ministry
  - (i) supervising the library?
  - (ii) where library is located?

Also, the designation of officer in direct supervisory charge of the library?

7. Does the library have its own book/material budget?
8. Methods of acquiring materials for the library?
  - (i) proactive request to sources?
  - (ii) passive reception from sources?
  - (iii) reactive search in response to request from staffers in the ministry?

(Appendix is continued on the next page ...)

APPENDIX 5 (Continued)B. MANAGEMENT OF RESOURCES, AND HOLDINGS AND PATRONAGE

9. Physical surroundings of the library?
10. Outward appearance of the organization (arrangement) of materials?
11. Availability of indexing system(s) and types of indexing systems (if any)?
12. (a) Reading facilities?  
(b) Borrowing facilities and policies?
13. Size of collection (in volumes)?
15. Types of materials stocked?

	none	a few	a lot
Government documents			
(a) of own state government?	( )	( )	( )
(b) of other governments?	( )	( )	( )
Consultancy reports?	( )	( )	( )
Conference papers?	( )	( )	( )
Journals?			
(a) academic	( )	( )	( )
(b) management/professional	( )	( )	( )
Newspapers?	( )	( )	( )
Books?	( )	( )	( )
Pamphlets and ephemera?	( )	( )	( )

16. Estimate of patronage per week  
  (a) by users within the ministry?  
  (b) by other users?

C. OTHER INFORMATION:

(Open-ended discussion with the interviewee).

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APPENDIX 6WORK ACTIVITIES FOCUSED UPON IN THE STUDY

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1. EVALUATING PROJECT PROPOSALS.
  2. COMMUNICATING WITH OTHER MINISTRIES/DEPARTMENTS ON PROJECTS AND PROGRAMS.
  3. IMPLEMENTING AND/OR INSPECTING PROJECTS, AND COMPILING REPORTS ON THE PROJECTS
  4. GATHERING STATISTICAL DATA THROUGH SURVEYS, FIELDWORK, VISITS TO SITES, COMMUNITIES, ETC.
  5. EVALUATING FIELD REPORTS OR DATA COMPILED BY OTHER STAFF MEMBERS.
  6. GENERAL ADMINISTRATIVE WORK (E.G., APPROVING LEAVE ROSTERS, EVALUATING STAFF, ETC.).
  7. PROVIDING SERVICES DIRECTLY TO THE PUBLIC (E.G., ADVISING THE PUBLIC, DOING SOCIAL WORK, APPROVING APPLICATIONS FROM THE PUBLIC, ETC.).
  
  8. ADMINISTERING TAX LAWS AND COLLECTING REVENUES FOR THE GOVERNMENT.<sup>1</sup>
  9. ACCOUNTING, AUDITING AND FINANCIAL CONTROL OF EXPENDITURES IN MINISTRIES AND OTHER GOVERNMENT AGENCIES.<sup>1</sup>
  
  10. PUBLICATION OF INFORMATION ON PROJECTS/PLANS.<sup>2</sup>
  11. COMPILING AND WRITING REPORTS ON VARIOUS ISSUES OF PUBLIC INTEREST.<sup>2</sup>
  12. SUMMARIZING LENGTHY REPORTS, MEMOS, ETC.<sup>2</sup>
  13. ATTENDING MEETINGS WITHIN THE MINISTRY.<sup>2</sup>
  14. ATTENDING MEETINGS OUTSIDE THE MINISTRY.<sup>2</sup>
- 

NOTES: <sup>1</sup> - These activities were not originally included in the list presented to respondents in the questionnaire. However, many respondents specified them as major work activities.

<sup>2</sup> - Though included in the list of activities presented to respondents in the questionnaire, very few respondents considered these activities to be major work activities. Thus the activities were excluded from the detailed analyses.

APPENDIX 7OTHER WORK ACTIVITIES MENTIONED BY RESPONDENTS<sup>\*</sup>

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1. INSPECTION OF GOVERNMENT STORE HOUSES
2. CONDUCTING INDUCTION TRAINING FOR NEW STAFF
3. PROCUREMENT OF FARM INPUTS
4. CONDUCTING SEMINARS/WORKSHOPS
5. DOING RADIO TALKS ON FARMING PRACTICES
6. ASSESSING THE MANPOWER REQUIREMENTS OF GOVERNMENT MINISTRIES AND AGENCIES
7. LIAISING WITH THE NATIONAL MANPOWER BOARD, LAGOS
8. ADMINISTERING OF REVENUE/TAX LAWS AND REVENUE/TAX COLLECTION
9. SUPERVISION OF STAFF
10. MANAGING WILDLIFE AND ZOOS
11. FIELD SUPERVISION OF STAFF
12. COMPILING AND WRITING REPORTS RELATED TO WORK
13. SOCIAL WORK
14. PAYMENT OF VOUCHERS TO PUBLIC SERVANTS AND MEMBERS OF THE PUBLIC
15. PERSONNEL MATTERS - PROMOTION AND DISCIPLINE OF STAFF
16. DATA PROCESSING ACTIVITIES
17. TAXATION - ASSESSMENT AND COLLECTION THEREOF
18. RAISING TAX ASSESSMENT ON TAXPAYERS
19. INITIATING PROPOSALS ON PROJECTS
20. ADVISING ON PROPER PROJECT IMPLEMENTATION PROCEDURES
21. FINANCIAL ADMINISTRATION MATTERS
22. VERIFICATION OF THE REVENUE ACCOUNTS OF VARIOUS GOVERNMENT MINISTRIES
23. IMPLEMENTING DISCIPLINARY ACTION ON STAFF
24. CONTROL OF VEHICLES AND TRANSPORTATION
25. GENERAL ACCOUNTING DUTIES
26. WRITING SUMMARY REPORTS ON STATISTICAL DATA
27. TOP LEVEL DIRECTION AND SUPERVISION OF ACTIVITIES IN THE DEPARTMENT
28. PROMOTION AND MONITORING OF COMMERCIAL AND INDUSTRIAL ACTIVITIES IN THE STATE
29. INSPECTION AND MONITORING OF GAMES AND BETTING BUSINESSES
30. PREPARATION OF BUDGET ESTIMATES
31. MONITORING OF EXPENDITURE RETURNS SUBMITTED BY DEPARTMENTS
32. FIELD TOUR OF REGIONAL/ZONAL OFFICES
33. MONITORING OF REVENUE COLLECTION ACTIVITIES IN SCHOOLS

(Appendix is continued on the next page ...)

APPENDIX 7 (Continued)

34. PROVIDING SOCIAL WELFARE ADVISORY SERVICES
35. PROVIDING SOCIAL AND HEALTH CARE FOR JUVENILES AND BABIES
36. SOCIAL COUNSELLING OF FAMILIES
37. PUBLIC RELATION WORK
38. EVALUATION OF STAFF APPLICATIONS FOR TRAINING SCHOLARSHIPS
39. STAFF DEPLOYMENT ACTIVITIES
40. PROMOTION OF SCIENCE AND TECHNICAL ACTIVITIES IN SCHOOLS
41. ADMINISTRATION OF STORES
42. AUDITING THE ACCOUNTS OF GOVERNMENT AGENCIES
43. LIAISING WITH AUDIT/ACCOUNTING FIRMS
44. EVALUATING AND APPROVING AUDIT FIRMS FOR GOVERNMENT AGENCIES
45. PREPARATION OF DEVELOPMENT PLANS/BUDGETS
46. AUDITING THE ACCOUNTS OF LOCAL GOVERNMENT AUTHORITIES
47. VERIFICATION OF AUDIT QUERIES
48. CHECKING/AUDITING OF VOUCHERS/ACCOUNTS
49. COMPILATION OF MINUTES OF MEETINGS
50. INTERVIEWING TAXPAYERS
51. FINANCIAL PROJECTIONS AND BUDGETING
52. PLAN FORMULATION AND IMPLEMENTATION ACTIVITIES
53. APPROVAL OF APPLICATIONS FOR THE RELEASE OF FUNDS
54. COORDINATION OF TECHNICAL AID TRAINING PROGRAMS
55. ACCOUNTING OPERATIONS
56. OVERALL (TOP-LEVEL) DIRECTION AND PLANNING OF ACTIVITIES
57. COORDINATION OF STAFF SOCIAL FUNCTIONS
58. COMPILATION AND DISSEMINATION OF MINUTES OF MEETINGS
59. COMMUNICATION OF MINISTERIAL POLICY TO PRIVATE INVESTORS
60. CONTROL OF VEHICLES/TRANSPORT
61. CONTROL OF SUBSCRIPTION NEWSPAPERS IN DEPARTMENT
62. FINANCIAL CONTROL AND ADMINISTRATION
63. WRITING POLICY PAPERS FOR STATE EXECUTIVE COUNCIL
64. DEVELOPMENT/EVALUATION OF CURRICULA FOR SCHOOLS
65. EVALUATION OF REPORTS FROM SCHOOLS
66. STAFF RECRUITMENT AND TRAINING
67. REVENUE COLLECTION
68. ASSESSMENT AND APPROVAL OF STAFF RETIREMENT ENTITLEMENT
69. MANPOWER/STAFF TRAINING ACTIVITIES
70. PROCESSING OF FOREIGN TECHNICAL AID PROPOSALS
71. ECONOMIC PLANNING ACTIVITIES
72. KEEPING ACCOUNTING RECORDS
73. OFFICE ADMINISTRATIVE WORK
74. SUPERVISION OF JUNIOR STAFF
75. COMPILING REPORTS ON PROJECTS/PROGRAMS

(Appendix is continued on the next page ...)

APPENDIX 7 (Continued)

- 76. EVALUATING RESEARCH SUBMISSIONS BY CONSULTANTS
  - 77. ADVISING ON POLICY PERTAINING TO STATISTICAL MATTERS
  - 78. LIAISING WITH NATIONAL AND INTERNATIONAL DATA AGENCIES
  - 79. COORDINATION OF BUDGET COMMITTEE MEETINGS
- 

NOTE: - These are the other work activities mentioned by respondents themselves (in addition to the twelve activities listed on the questionnaire). Descriptive labels are as were specified by respondents with only minimal editing.

**APPENDIX 8****INFORMATION SOURCES FOCUSED UPON IN THE STUDY**

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1. **PERSONS IN STATE GOVERNMENT MINISTRIES**  
(through face-to-face or telephone discussions)
  2. **PERSONS IN UNIVERSITIES AND RESEARCH INSTITUTES**  
(through face-to-face or telephone discussions)
  3. **PERSONS IN PRIVATE SECTOR ORGANIZATIONS**  
(through face-to-face or telephone discussions)
  4. **INTERNAL FILES**  
(of the ministry)
  5. **GOVERNMENT PUBLICATIONS**  
(plans, budgets, gazettes, etc. published by the federal and state governments in Nigeria)
  6. **CONSULTANCY REPORTS**  
(commissioned by the federal and various state governments in Nigeria)
  7. **CONFERENCE AND/OR WORKSHOP PAPERS**  
(i.e., papers presented at various state and national conferences in Nigeria)
  8. **ACADEMIC JOURNALS**  
(and periodicals)
  9. **MANAGEMENT AND PROFESSIONAL JOURNALS**
  10. **NEWSPAPERS AND MAGAZINES**
  11. **BOOKS**  
(about public finance, economic development, social issues, agriculture, etc.)
  12. **BULLETINS FROM PRIVATE SECTOR INSTITUTIONS**  
(pamphlets, annual reports, bulletins, etc.)
-

APPENDIX 9OTHER INFORMATION SOURCES MENTIONED BY RESPONDENTS<sup>\*</sup>

- 
1. PROGRESS REPORTS BY CONSULTANTS
  2. WORLD BANK PUBLICATIONS
  3. RADIO MESSAGES FROM OUTSTATIONS
  4. INFORMATION FROM THE FEDERAL MINISTRY OF AGRICULTURE
  5. PERSONAL NOTES AND RANDOM WRITINGS
  6. TRADE FAIRS
  7. AGRICULTURAL SHOWS AND EXHIBITIONS
  8. DEPARTMENTAL SEMINAR PAPERS
  9. ELECTRONIC NEWS MEDIA
  10. COMMERCIAL/BUSINESS HOUSES
  11. PRODUCTION/SUPPLY ESTABLISHMENTS
  12. REPLIES TO INFORMATION REQUESTS MADE TO OTHER MINISTRIES
  13. MEMOS
  14. CIRCULARS AND DIRECTIVES
  15. GENERAL ORDERS AND RULES (A MANUAL)
  16. INFORMATION FROM FINANCIAL HOUSES
  17. FINANCIAL INSTRUCTIONS (A MANUAL)
  18. CORRESPONDENCE
  19. INFORMATION FROM PARASTATALS AND GOVERNMENT AGENCIES
  20. PUBLISHED REPORTS OF OTHER STATE GOVERNMENTS
  21. STATISTICAL PUBLICATIONS FROM OTHER STATES, OTHER COUNTRIES
  22. ROUTINE CORRESPONDENCE BETWEEN MINISTRIES
  23. ON-THE-SPOT INSPECTIONS OF PROJECTS, SITES, ETC.
  24. CURRENT NEWS (AFFAIRS)
  25. REPORTS (BY MINISTRY OFFICIALS)
  26. LOCAL GOVERNMENT AGENCIES
  27. REPORTS OF COMMITTEES OF INQUIRY
  28. TAX LAWS AND EDICTS
  29. RAW DATA FROM FIELD PROJECTS/TOURS
  30. DATA FROM PAST PUBLICATIONS AND BULLETINS
  31. RADIO/TV PROGRAMS
  32. ADVICE AND ORDERS FROM COURTS VIS-A-VIS CASES
  33. CONTRACT DOCUMENTS
  34. MINUTES OF MINISTERIAL MEETINGS
  35. PROJECT AND PRE-PROJECT FEASIBILITY REPORTS
  36. CONCLUSIONS AND DECISIONS OF STATE EXECUTIVE COUNCIL
  37. PUBLISHED ACCOUNTS OF PRIVATE BUSINESSES
  38. PUBLICATIONS OF OTHER STATES AND GOVERNMENTS.
  39. INFORMATION FROM THE FEDERAL OFFICE OF STATISTICS
  40. LOCAL GOVERNMENT SOURCES - PEOPLE, PUBLICATIONS, ETC.

(Appendix is continued on the next page ...)



APPENDIX 9 (Continued)

41. DOCUMENTS PERTAINING TO CONTRACT PAYMENTS/RENT INCOMES
  42. PUBLICATIONS OF REVENUE TASK FORCES
  43. COMPLETED INCOME TAX FORMS
  44. LIBRARY OF THE DEPARTMENT/MINISTRY
  45. TEXTBOOKS INTENDED FOR USE IN SCHOOLS
  46. REPORTS FROM SCHOOLS
  47. FEASIBILITY REPORTS
  48. MARKET SURVEYS
  49. FORMAL COMPLAINTS BY MEMBERS OF THE PUBLIC
  50. RELIGIOUS INSTITUTIONS/ORGANIZATIONS
  51. PRIVATE INDIVIDUALS
  52. SURVEYS - DATA COLLECTION
  53. PEOPLE - THROUGH SURVEYS AND FIELD STUDIES
  54. DISCUSSION WITH PEOPLE
  55. STATISTICAL YEARBOOKS
  56. STATISTICAL PUBLICATIONS
  57. BUDGET SUBMISSIONS FROM VARIOUS HEADS OF SECTIONS/DIVISIONS
  58. UNOFFICIAL SOURCES
  59. PERSONAL CONTACTS
  60. SUMMARY STATISTICS FROM COURTS AND PRISONS
- 

NOTE: - These are the other information sources mentioned by respondents themselves (in addition to the twelve sources focussed upon in the questionnaire). Descriptive labels are as were specified by respondents with only minimal editing.

**APPENDIX 10****TYPES OF INFORMATION FOCUSED UPON IN THE STUDY**

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**1. DIRECTORY INFORMATION**

Information about people, institutions, companies, places, etc.

**2. RESEARCH INFORMATION**

Results of scientific and social research, surveys, etc.

**3. PROCEDURAL INFORMATION**

Information about procedures by which the decision-maker or user ought to do official activities.

**4. STATISTICAL INFORMATION**

Summary statistics about the population, government revenues and budgets, commerce and industry, agriculture, etc.

**5. LEGAL INFORMATION**

Information about laws and statutes, administrative rules, executive orders, etc.

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APPENDIX 11

**CATEGORIZATION OF RESPONDENTS BY LEVEL IN THE HIERARCHY  
OF THE MINISTRIES AND CIVIL SERVICE**

<b>LEVEL</b>	<b>CONSTITUENT RANKS</b>	<b>SALARY GRADE LEVELS</b>
Top	Director, Deputy Director, Assistant Director, Secretary, Under-secretary, Chief ___ <sup>1</sup> Officer, Chief ___ <sup>2</sup> Deputy Chief ___ <sup>1</sup> Officer Deputy Chief ___ <sup>2</sup>	GL 14 and higher
Upper- intermediate	Assistant Chief ___ <sup>1</sup> Officer Principal ___ <sup>1</sup> Officer Principal Assistant Secretary Assistant Chief ___ <sup>2</sup> Principal ___ <sup>2</sup> Chief Executive Officers Deputy Chief Executive Officers	GL 13, GL 12
Lower- intermediate	Senior ___ <sup>1</sup> Officer Senior Assistant Secretary Senior ___ <sup>2</sup> Assistant Chief Executive Officer Principal Executive Officer	GL 10
Bottom	___ <sup>1</sup> Officer I and II ___ <sup>2</sup> I and II Assistant Secretary I and II Sub_professional level officers <sup>3</sup>	GL 09, GL 08, GL 07

- NOTES:**
- ° : As used in this study.
  - 1 : Insert the functional or professional qualifier such as Planning, Education, etc.
  - 2 : Insert the functional or professional qualifier such as Accountant, Statistician, etc.
  - 3 : For example, Statistical Officers, Assistant Planning Officers, Higher Executive Officers (Accounts), etc.

## APPENDIX 12

**DIVISIONS OF THE MINISTRIES OF FINANCE AND ECONOMIC PLANNING  
AND PROFESSIONAL GROUPS IN WHICH ACTIVITIES ARE PERFORMED  
MORE OR LESS THAN AVERAGE.\***

WORK ACTIVITIES	DIVISIONS OF THE MFEP <sup>1</sup>			PROFESSIONAL GROUPS <sup>2</sup>		
	$\chi^2$ p	Above average	Below average	$\chi^2$ p	Above average	Below average
1. EVALUATING PROJECT PROPOSALS	.000	4	5,6,8	.000	F	B,G,I,J
2. COMMUNICATING WITH OTHER MINISTRIES	.000	4	5,6,8	.000	F	B,G,I
3. PUBLISHING INFORMATION ON PROJECTS/PLANS	.000	4	2,5	.000	F	B,G,H
4. IMPLEMENTING/INSPECTING PROJECTS	.000	4	5,8	.000	C,F	B,G,J
5. WRITING REPORTS ON PUBLIC POLICY ISSUES	.121	*	*	.438	*	*
6. SUMMARIZING REPORTS	.000	1,4	5,6,8	.000	A,F	B,G,I
7. GATHERING STATISTICAL DATA	.000	4,6	1,5	.000	F,I	B,G,J
8. EVALUATING REPORTS COMPILED BY OTHERS	.000	6	1,5	.000	C,I	B,J
9. DOING GENERAL ADMINISTRATIVE WORK	.003	1	4	.000	A,E,J	F
10. PROVIDING DIRECT PUBLIC SERVICES	.002	7,8	6	.000	D,H	F,I
11. ATTENDING MEETINGS WITHIN THE MINISTRY	.022	4	5	.034	F	G
12. ATTENDING MEETINGS OUTSIDE THE MINISTRY	.000	4	5	.000	D,F	G,J
Minimum sample sizes <sup>a</sup>	189			250		
Degrees of freedom <sup>b</sup>	7			9		

- NOTES: + - From the analyses of  $\chi^2$  residuals.  
 \* -  $\chi^2$  probability not significant at the 5 % level.
- a - The grand total number of cases in the  $\chi^2$  tables.  
 b - Defined as  $\{(r-1) \times (c-1)\}$  where r and c are the number of rows and columns of the  $\chi^2$  tables.
- 1 - Codes for the divisions of the Ministries of Finance and Economic Planning (MFEP):  
 1 - Administration/Policy.      5 - Revenue  
 2 - Audit                              6 - Statistics  
 3 - Budget                            7 - Supplies/Stores  
 4 - Planning/Research            8 - Treasury
- 2 - Codes for the professional groups in ministries:  
 A - Administrative Officers;  
 B - Accountants;  
 C - Agricultural Officers;  
 D - Commercial/Trade Officers;  
 E - Educational Officers;  
 F - Planning/Research Officers;  
 G - Revenue/Tax Officers;  
 H - Social Welfare Officers;  
 I - Statisticians;  
 J - Executive/Clerical Officers.

**APPENDIX 13**

**FREQUENCY WITH WHICH ACTIVITIES WERE SELECTED AS MAJOR WORK  
ACTIVITY BY RESPONDENTS (TOTAL NUMBER OF RESPONDENTS = 274).**

WORK ACTIVITIES	RESPONDENTS SELECTING ACTIVITY AS MAJOR WORK ACTIVITY	
	NUMBER	%
<b>Primary set of activities<sup>1</sup></b>		
1. EVALUATING PROJECT PROPOSALS <sup>*</sup>	32	11.7
2. COMMUNICATING WITH OTHER MINISTRIES <sup>*</sup>	17	6.2
3. PUBLISHING INFORMATION ON PROJECTS/PLANS	1	0.4
4. IMPLEMENTING/INSPECTING PROJECTS	22	8.0
5. WRITING REPORTS ON PUBLIC POLICY ISSUES	3	1.1
6. SUMMARIZING REPORTS	2	0.7
7. GATHERING STATISTICAL DATA	30	10.9
8. EVALUATING REPORTS COMPILED BY OTHERS <sup>*</sup>	24	8.8
9. DOING GENERAL ADMINISTRATIVE WORK	57	20.8
10. PROVIDING DIRECT PUBLIC SERVICES	16	5.8
11. ATTENDING MEETINGS WITHIN THE MINISTRY	4	1.5
12. ATTENDING MEETINGS OUTSIDE THE MINISTRY	1	0.4
<b>Other activities specified by respondents</b>		
13. ADMINISTERING TAX LAWS AND COLLECTING REVENUES <sup>*</sup>	26	9.5
14. ACCOUNTING AND FINANCIAL CONTROL <sup>*</sup>	27	9.9
15. MISCELLANEOUS OTHER ACTIVITIES	12	4.4

- NOTES:**
- ① - These are the activities initially focussed upon in the study.
  - \* - The detailed analyses reported in sections 3.2 and 3.3 were undertaken with respect to these activities.

APPENDIX 14**RANK ORDERING OF WORK ACTIVITIES IN TERMS OF THE DIFFICULTY OF DETERMINING THE EFFECTIVENESS OF THE ACTIVITIES.**

Work activities (in rank order) <sup>1</sup>	Average rank score <sup>2</sup>
EVALUATING PROJECT PROPOSALS <sup>+</sup>	152.64
GENERAL ADMINISTRATIVE WORK	135.55
PROVIDING DIRECT PUBLIC SERVICES	131.06
INSPECTING/IMPLEMENTING PROJECTS	123.68
EVALUATING REPORTS COMPILED BY OTHERS	119.17
ACCOUNTING AND FINANCIAL CONTROL <sup>-</sup>	117.80
GATHERING STATISTICAL DATA <sup>-</sup>	110.31
COMMUNICATING WITH OTHER MINISTRIES <sup>-</sup>	106.21
ADMINISTERING TAX LAWS AND COLLECTING REVENUES <sup>-</sup>	84.38

TEST p = .0086  
N = 244

- NOTES:
- <sup>1</sup> - The activities are ranked in the decreasing order of the difficulty with which the effectiveness of work can be determined.
  - <sup>2</sup> - The average rank scores computed for the activities in applying the Kruskal-Wallis procedure.
- <sup>+/-</sup> - It is significantly more/less difficult to determine the effectiveness of work done in the activities marked with (<sup>+</sup>/<sup>-</sup>) than in the activities marked with (<sup>-</sup>/<sup>+</sup>). The activities with (<sup>+</sup>/<sup>-</sup>) were included in the HIGH/LOW LEVEL groups of activities for the comparative analyses.

APPENDIX 15

**RANK ORDERING OF WORK ACTIVITIES IN TERMS OF THE CLARITY  
ABOUT THE SOURCES THAT CAN BE USED IN THE ACTIVITY.**

Work activities (in rank order) <sup>1</sup>	Average rank score <sup>2</sup>
EVALUATING PROJECT PROPOSALS <sup>+</sup>	89.27
COMMUNICATING WITH OTHER MINISTRIES	99.24
EVALUATING REPORTS COMPILED BY OTHERS	105.10
GENERAL ADMINISTRATIVE WORK	123.80
ADMINISTERING TAX LAWS & COLLECTIN REVENUEN	124.10
INSPECTING/IMPLEMENTING PROJECTS	127.33
GATHERING STATISTICAL DATA <sup>-</sup>	130.84
PROVIDING DIRECT PUBLIC SERVICES <sup>-</sup>	134.56
ACCOUNTING AND FINANCIAL CONTROL <sup>-</sup>	147.35

TEST p = .0288

N = 239

- NOTES: <sup>1</sup> - The activities are ranked in the decreasing order of the extent of clarity about the sources that can be used.
- <sup>2</sup> - The average rank scores computed for the activities in applying the Kruskal-Wallis procedure.
- <sup>+/</sup> - Clarity about the sources that can be used in the activities marked with (<sup>+/</sup>) is significantly higher/lower than in the activities marked with (<sup>-/+</sup>). The activities with (<sup>+/</sup>) were included in the HIGH/LOW LEVEL groups of activities for the comparative analyses.

APPENDIX 16

RANK ORDERING OF WORK ACTIVITIES IN TERMS OF THE FREQUENCY WITH WHICH DIFFICULT PROBLEMS OCCUR IN THE ACTIVITIES.

Work activities (in rank order) <sup>1</sup>	Average rank score <sup>2</sup>
PROVIDING DIRECT PUBLIC SERVICES <sup>+</sup>	154.63
COMMUNICATING WITH OTHER MINISTRIES <sup>+</sup>	147.21
EVALUATING REPORTS COMPILED BY OTHERS <sup>+</sup>	136.15
EVALUATING PROJECT PROPOSALS <sup>+</sup>	135.77
GATHERING STATISTICAL DATA	131.67
GENERAL ADMINISTRATIVE WORK	118.31
IMPLEMENTING INSPECTING PROJECTS	113.76
ADMINISTERING TAX LAWS & COLLECTING REVENUE <sup>-</sup>	98.40
ACCOUNTING AND FINANCIAL CONTROL <sup>-</sup>	92.96

TEST p = .0270

N = 245

- NOTES:
- <sup>1</sup> - The activities are ranked in the decreasing order with which difficult problems occur.
  - <sup>2</sup> - The average rank scores computed for the activities in applying the Kruskal-Wallis procedure.
- <sup>+/-</sup> - Difficult problems occur in the activities marked with (<sup>+</sup>/<sup>-</sup>) significantly more/less often than in the activities marked with (<sup>-</sup>/<sup>+</sup>). The activities with (<sup>+</sup>/<sup>-</sup>) were included in the HIGH/LOW LEVEL groups of activities for the comparative analyses.



APPENDIX 17

RANK ORDERING OF WORK ACTIVITIES IN TERMS OF THE EXTENT TO WHICH SOURCES THAT MAY BE USED IN THE ACTIVITIES ARE PRESCRIBED BY REGULATIONS.

Work activities (in rank order) <sup>1</sup>	Average rank score <sup>2</sup>
EVALUATING PROJECT PROPOSALS <sup>+</sup>	86.82
EVALUATING REPORTS COMPILED BY OTHERS <sup>+</sup>	86.82
GATHERING STATISTICAL DATA	101.52
COMMUNICATING WITH OTHER MINISTRIES	107.59
INSPECTING/IMPLEMENTING PROJECTS	115.00
PROVIDING DIRECT PUBLIC SERVICES	125.44
GENERAL ADMINISTRATIVE WORK <sup>-</sup>	130.97
ACCOUNTING AND FINANCIAL CONTROL <sup>-</sup>	139.93
ADMINISTERING TAX LAWS & COLLECTING REVENUE <sup>-</sup>	152.23

TEST p = .0020

N = 235

- NOTES:
- 1 - The activities are ranked in the increasing order with which the sources are prescribed by regulations.
  - 2 - The average rank scores computed for the activities in applying the Kruskal-Wallis procedure.
- <sup>+/</sup> - The activities marked with (<sup>+/</sup>) allow significantly more/less user discretion than the activities marked with (<sup>-/+</sup>). The activities with (<sup>+/</sup>) were included in the HIGH/LOW LEVEL groups of activities for the comparative analyses.

APPENDIX 18

RANK ORDERING OF WORK ACTIVITIES IN TERMS OF THE LENGTH OF TIME OFTEN REQUIRED TO COMPLETE AN OCCURRENCE OF EACH OF THE ACTIVITIES.

Work activities (in rank order) <sup>1</sup>	Average rank score <sup>2</sup>
GATHERING STATISTICAL DATA <sup>+</sup>	177.54
EVALUATING PROJECT PROPOSALS <sup>+</sup>	146.50
EVALUATING REPORTS COMPILED BY OTHERS	138.14
ACCOUNTING AND FINANCIAL CONTROL	134.24
PROVIDING DIRECT PUBLIC SERVICES	107.53
COMMUNICATING WITH OTHER MINISTRIES	99.56
INSPECTING/IMPLEMENTING PROJECTS <sup>-</sup>	89.92
GENERAL ADMINISTRATIVE WORK <sup>-</sup>	81.14
ADMINISTERING TAX LAWS & COLLECTING REVENUE <sup>-</sup>	78.13
	TEST p = .0000
	N = 231

- NOTES:
- <sup>1</sup> - The activities are ranked in the decreasing order of the length of time required to do the activities.
  - <sup>2</sup> - The average rank scores computed for the activities in applying the Kruskal-Wallis procedure.
- <sup>+/</sup> - The activities marked with (<sup>+/</sup>) require significantly more/less time than the activities marked with (<sup>-/+</sup>). The activities with (<sup>+/</sup>) were included in the HIGH/LOW LEVEL groups of activities for the comparative analyses.

**APPENDIX 19****RANK ORDERING OF SOURCES IN TERMS OF THE PROVISION OF  
DIRECTORY INFORMATION.**


---

INFORMATION SOURCES (in rank order) <sup>1</sup>	MEAN RANK <sup>2</sup>
Internal files	7.80
Newspapers and magazines	7.54
Persons in state government ministries	7.01
Government publications	6.97
Books	6.74
Management/professional journals	6.56
Conference/workshop papers	6.29
Persons in academic and research institutions	6.28
Academic journals	6.06
Consultancy reports	5.98
Persons in private sector organizations	5.94
Bulletins from the private sector	4.84

TEST p = .0000

N = 110

- 
- NOTES: <sup>1</sup> - The sources are ranked in the decreasing order of the extent to which they provide directory information.
- <sup>2</sup> - The mean ranks are those computed for the sources in applying the Friedman test procedure.

APPENDIX 20

## RANK ORDERING OF SOURCES IN TERMS OF THE PROVISION OF RESEARCH INFORMATION.

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INFORMATION SOURCES (in rank order) <sup>1</sup>	MEAN RANK <sup>2</sup>
Persons in academic and research institutions	8.40
Books	7.84
Academic journals	7.64
Management/professional journals	7.40
Conference/workshop papers	7.25
Consultancy reports	6.64
Newspapers and magazines	6.19
Persons in private sector organizations	5.75
Government publications	5.66
Internal files	5.38
Bulletins from the private sector	5.25
Persons in state government ministries	4.59

TEST p = .0000

N = 118

- 
- NOTES: <sup>1</sup> - The sources are ranked in the decreasing order of the extent to which they provide research information.
- <sup>2</sup> - The mean ranks are those computed for the sources in applying the Friedman test procedure.

**APPENDIX 21****RANK ORDERING OF SOURCES IN TERMS OF THE PROVISION OF  
LEGAL INFORMATION.**


---

INFORMATION SOURCES (in rank order) <sup>1</sup>	MEAN RANK <sup>2</sup>
Internal files	8.45
Persons in state government ministries	8.40
Government publications	8.43
Management/professional journals	6.95
Books	6.43
Newspapers and magazines	6.34
Conference/workshop papers	5.94
Persons in academic and research institutions	5.81
Academic journals	5.64
Consultancy reports	5.60
Persons in private sector organizations	5.42
Bulletins from the private sector	4.59

TEST p = .0000

N = 120

- 
- NOTES: <sup>1</sup> - The sources are ranked in the decreasing order of the extent to which they provide legal information.
- <sup>2</sup> - The mean ranks are those computed for the sources in applying the Friedman test procedure.

APPENDIX 22RANK ORDERING OF SOURCES IN TERMS OF THE PROVISION OF  
STATISTICAL INFORMATION.

---

INFORMATION SOURCES (in rank order) <sup>1</sup>	MEAN RANK <sup>2</sup>
Government publications	8.49
Internal files	8.01
Persons in state government ministries	7.83
Persons in academic and research institutions	7.10
Management/professional journals	6.58
Academic journals	6.58
Consultancy reports	6.16
Conference/workshop papers	6.13
Books	5.96
Newspapers and magazines	5.86
Persons in private sector organizations	4.85
Bulletins from the private sector	4.45

TEST p = .0000

N = 121

- 
- NOTES: <sup>1</sup> - The sources are ranked in the decreasing order of the extent to which they provide statistical information.
- <sup>2</sup> - The mean ranks are those computed for the sources in applying the Friedman test procedure.

**APPENDIX 23****RANK ORDERING OF SOURCES IN TERMS OF THE PROVISION OF PROCEDURAL INFORMATION.**


---

INFORMATION SOURCES (in rank order) <sup>1</sup>	MEAN RANK <sup>2</sup>
Internal files	9.39
Persons in state government ministries	9.21
Government publications	8.38
Management/professional journals	6.56
Books	6.37
Conference/workshop papers	6.29
Persons in academic and research institutions	5.91
Academic journals	5.68
Newspapers and magazines	5.65
Consultancy reports	5.48
Persons in private sector organizations	4.80
Bulletins from the private sector	4.29

TEST p = .0000

N = 137

---

- NOTES: <sup>1</sup> - The sources are ranked in the decreasing order of the extent to which they provide procedural information.
- <sup>2</sup> - The mean ranks are those computed for the sources in applying the Friedman test procedure.

**APPENDIX 24****RANK ORDERING OF SOURCES IN TERMS OF THE ACCURACY  
OF THE INFORMATION PROVIDED.**


---

INFORMATION SOURCES (in rank order) <sup>1</sup>	MEAN RANK <sup>2</sup>
Internal files	8.27
Government publications	7.92
Academic journals	7.17
Persons in state government ministries	7.16
Management/professional journals	7.07
Persons in academic and research institutions	6.90
Conference/workshop papers	6.60
Consultancy reports	6.37
Newspapers and magazines	5.00
Books	6.53
Bulletins from the private sector	4.53
Persons in private sector organizations	4.46

TEST p = .0000

N = 131

---

- NOTES: <sup>1</sup> - The sources are ranked in the decreasing order of the extent to which they provide accurate information.
- <sup>2</sup> - The mean ranks are those computed for the sources in applying the Friedman test procedure.



APPENDIX 25RANK ORDERING OF SOURCES IN TERMS OF THE BREVITY  
OF THE INFORMATION PROVIDED.

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INFORMATION SOURCES (in rank order) <sup>1</sup>	MEAN RANK <sup>2</sup>
Government publications	7.76
Persons in state government ministries	7.67
Internal files	7.47
Management/professional journals	6.91
Persons in academic and research institutions	6.54
Consultancy reports	6.50
Persons in private sector organizations	6.13
Academic journals	6.04
Conference/workshop papers	6.02
Newspapers and magazines	5.90
Bulletins from the private sector	5.83
Books	5.24

TEST p = .0000

N = 123

- 
- NOTES: <sup>1</sup> - The sources are ranked in the decreasing order of the brevity with which they present information.
- <sup>2</sup> - The mean ranks are those computed for the sources in applying the Friedman test procedure.

**APPENDIX 26****RANK ORDERING OF SOURCES IN TERMS OF THE AUTHORITATIVENESS OF THE INFORMATION PROVIDED.**


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INFORMATION SOURCES (in rank order) <sup>1</sup>	MEAN RANK <sup>2</sup>
Internal files	9.31
Government publications	8.55
Persons in state government ministries	8.48
Management/professional journals	6.75
Conference/workshop papers	6.60
Consultancy reports	6.46
Books	5.97
Persons in academic and research institutions	5.70
Academic journals	5.56
Newspapers and magazines	5.27
Persons in private sector organizations	4.73
Bulletins from the private sector	4.61

TEST p = .0000

N = 143

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- NOTES:
- Authoritativeness of a source is defined in the study as the extent to which the source provide information that enables users to justify or account for official decisions.
  - <sup>1</sup> - The sources are ranked in the decreasing order of the extent to which they provide authoritative information.
  - <sup>2</sup> - The mean ranks are those computed for the sources in applying the Friedman test procedure.

**APPENDIX 27****CORRELATION AMONG SOME USER-LEVEL VARIABLES.**

(Minimum pair-wise number of cases = 201).

VARIABLES <sup>1</sup>	VARIABLES <sup>1</sup>				
	1	2	3	4	5
1. LEVEL IN THE HIERARCHY	-				
2. NUMBER OF YEARS IN THE SERVICE	.5308*	-			
3. NUMBER OF COURSES ATTENDED	.2887*	.5824*	.-		
4. NUMBER OF CONFERENCES ATTENDED	.4927*	.4066*	.4470*	-	
5. NUMBER OF TASKS FORCES SERVED	.3627*	.2541*	.3051*	.4572*	-

NOTES: <sup>1</sup> - See Appendix 4 for detailed descriptions of the user-level variables.

\* - Probability of Pearson's  $r < .001$ .

APPENDIX 28

## CODING SCHEMES USED TO CATEGORIZE VALUES OF SOME PERSONAL CHARACTERISTICS OF CIVIL SERVANTS (USER VARIABLES).

I. Number of years in the service.

Category number	Values
1	0 - 5 years
2	6 - 10 years
3	11 - 20 years
4	over 20 years

II. Position/level in the hierarchy (of the ministry).<sup>1</sup>

Category number	Values (Salary levels)
1	GL 14 and higher
2	GL 12 and GL 13
3	GL 10
4	GL 7 to GL 9

III. Number of conferences and workshops attended.

Category number	Values (Attendances)
1	0 conferences
2	1 - 3 conferences
3	4 - 10 conferences
4	over 10 conferences

IV. Number of in-services courses attended.

Category number	Values (Attendances)
1	0 course
2	1 course
3	2 courses
4	3 or more courses

(Appendix is continued on the next page...)

APPENDIX 28 (Continued)V. Professional group.

Category number	Values (Attendances)
1	Accountants
2	Administrative Officers
3	Agricultural Officers
4	Commercial/Trade Officers
5	Education Officers
6	Executive Officers
7	Planning/Research Officers
8	Revenue/Tax Officers
9	Social Welfare Officers
10	Statisticians
11	Others

VI. Ministry.

Category	Label
1	Agriculture and Natural Resources
2	Commerce and Industry
3	Education
4	Finance and Economic Planning
5	Social Development, Youth and Sports

VII. Division of the Ministries of Finance and Economic Planning (MFEF).

Category	Label	Category	Label
1	Administration/Policy.	5	Revenue
2	Audit	6	Statistics
3	Budget	7	Supplies/Stores
4	Planning/Research	8	Treasury

- 
- NOTES:
- 1 - Details of the positions corresponding to each category are in Appendix 11.
  - These categories were grouped in some of the analyses.

APPENDIX 29

DETAILS OF THE MANN-WHITNEY TESTS COMPARING GROUPS OF ACTIVITIES ON THE EXTENT TO WHICH USERS DOING THE ACTIVITIES DEPEND ON TWELVE INFORMATION SOURCES.

VARIABLE <sup>1</sup>	SOURCES <sup>2</sup>	ACTIVITY GROUP <sup>3</sup>	LEVEL OF USE OF SOURCE <sup>4</sup>	N <sup>5</sup>	TEST P
DIFFICULTY OF DETERMINING EFFECTIVENESS	Consultancy reports	HIGH	83.92	31	.0000
		LOW	54.61	92	
	Conference/workshop papers	HIGH	74.06	31	.0244
		LOW	57.93	92	
CLARITY ABOUT SOURCES TO USE	Consultancy reports	HIGH	39.32	64	.0000
		LOW	65.92	31	
	Conference/workshop papers	HIGH	44.73	65	.0482
		LOW	56.40	31	
PRESCRIPTION OF SOURCES BY REGULATIONS	Internal files	HIGH	84.92	102	.0038
		LOW	66.37	54	
	Consultancy reports	HIGH	65.39	98	.0001
		LOW	93.46	51	
	Academic journals	HIGH	67.82	94	.0372
		LOW	82.54	51	
FREQUENCY OF DIFFICULT PROBLEMS	Internal files	HIGH	63.08	85	.0368
		LOW	76.36	50	
	Consultancy reports	HIGH	73.24	81	.0044
		LOW	54.27	50	
TIME REQUIRED FOR WORK	Internal files	HIGH	66.87	60	.0026
		LOW	86.51	97	

- NOTES:
- 1 - Variables used to group activities and users doing the activities. Descriptions of the variable labels are provided in Appendix 4.
  - 2 - For each variable, only the sources for which the tests were significant at the 5 % level are included in table.
  - 3 - HIGH (LOW): activities ranking highest (lowest) in terms of the variable in the first column.
  - 4 - The average rank score (in terms of the extent of use of the source) for users doing each activity group. The values are the mean ranks computed for the HIGH and LOW level groups in applying the Mann-Whitney test procedure.
  - 5 - Number of users in each group of activities.

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