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Public officials' perception of Information and Communications Technology Usefulness in South African Social Security Agency

By

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in the field of Public and Development Management.

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Abstract

This research report explores factors that affect Information and Communications Technology User Satisfaction in the Public Sector in South Africa. With the help of the literature cited in this report, the researcher arrives at an empirical conclusion that there are six factors that affects user satisfaction in the public sector in South Africa. These are Leadership Support, Knowledge, Skills, Technology and Innovation, Communication and Quality Service Systems. Through the study of 151 respondents from different levels of South African Social Security Agency offices in Gauteng, the researcher concluded that there is certainly a link or similarity between the above listed factors and government policy on customer orientation guide lines commonly known as Batho Pele principles This study contributes towards encouraging Information and Communications Technology management and practitioners in the public sector to acknowledge factors that affect user satisfaction in their respective government departments. In applying/implementing Batho Pele principles, it is expected that the factors that affect user satisfaction will be positively influenced in the interests of improved service delivery to the citizens of the country.

(keywords: User satisfaction, Batho Pele principles (customer/User focus)

Declaration

I, Reginald Ramaboea, student no 395775, declare that this dissertation is my own unaided work, except to the extent indicated in the text acknowledgements and reference matter. It is being submitted in partial fulfillment of the requirements for the degree of Masters of Management (Public and Development Management) in the Faculty of Commerce, Law and Management, University of the Witwatersrand. It has not been submitted before for any degree or examination at this or any other University.

Signature: _____

28 February 2010

Dedication

This research report is dedicated to my father, Basilius Motlatjo Ramaboea and my fiancée, Silvia Makwala (both deceased). May their souls rest in peace, God Bless.

It is also dedicated to my two lovely kids, Tumisho and Kutloano. Thank you very much for being very patient with me during this period. It was really worth it.

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CHAPTER 1
INTRODUCTION TO THE STUDY

1.1 Introduction

Information and Communications Technology (ICT) is a powerful enabler of development and transformation in key sectors of public administration and governance. ICT plays an important role in improving public sector management such as public financial management, human resources, asset management, and government supply chain through e-procurement. It also promotes the delivery of public sector services in health, education, social protection etc. ICT makes government interactions with citizens, businesses and within its own departments more efficient, accountable, open and responsive (Garson, 2003). Whilst there is excitement about the robustness of this technology, less attention is paid to the people who use it (ICT) to make the above-mentioned achievements possible. Unlike the public sector, private sector organizations take the construct of ICT user satisfaction very seriously for many reasons.

The basis of this research was to explore factors affecting ICT user satisfaction in the public sector in South Africa. Bailey and Pearson (1993) identified 30 factors that contribute to ICT user satisfaction. These factors were then re-evaluated and refined by Ives, Olson and Baroudi (1983) who summarised them into 13 factors. However these factors were never properly examined in the context of the public sector in South Africa. A quantitative research design was used to inform the findings. Data was gathered from the computer user community across Gauteng Province in the identified government department.

The South African Social Security Agency (SASSA) is a government agency that the researcher identified to conduct the investigation of these factors. The selection was based on the fact that SASSA is the agency

responsible for key service delivery programmes of social security. Approval from authorities was of high importance and therefore information was obtained by following professional and ethical protocols.

1.2 Background

Since the advent of a democratic dispensation in 1994, the South African government has committed itself to quality service delivery to all its citizens. In most government ministries, agencies were formed as vehicles to deliver on this mandate. The intention was to use private sector methods to solve public sector problems (Barzley, 2001). It then became clear that methods and technology to be employed must be similar to, or surpass, those already in the market.

In October 2002, the South African cabinet approved the establishment of a national social security system, which culminated in the establishment of the SASSA in April 2006. The Agency's mandate is to ensure the provision of comprehensive social security services, aimed at the alleviation of vulnerability and poverty, within the constitutional framework (SASSA, 2007). In order to meet this challenge, SASSA embarked on a rigorous strategy of building a very strong ICT branch within the agency. SASSA management made a significant investment in ICT infrastructure, highly skilled personnel and process automation. This presented management with the challenge of justifying such a high level of expenditure of public monies.

While Government has invested large sums on ICT in order to improve departmental efficiency and excellence, the objective measures of success are extremely difficult to achieve. For this reason, many ICT researchers (and potentially ICT practitioners) rely on user evaluations of systems as a surrogate for ICT success. However, these measures have been strongly

criticized as lacking strong theoretical underpinnings. Furthermore, empirical evidence of their efficacy is surprisingly weak (Goodhue, 1995).
The South African government has, at least in relation to the theory of customer satisfaction, managed to define principles that inform service delivery in public service, in the form of Batho Pele. Batho Pele is a Sotho word which means “people first” Simply put; Batho Pele is an initiative to encourage public servants to be service-orientated, to strive for excellence in service delivery and to commit to continuous service delivery improvement (Department of Public Service Administration, 1997).

It is against this backdrop that the researcher looked into those factors that affect ICT user satisfaction in the public sector in South Africa. ICT users in this case are regarded as clients/consumers to their respective ICT departments.

1.3 Problem statement

Although the government has put in place measures such as Batho Pele principles, which focus on client/user satisfaction, ICT departments in government have not done much to address the issue of client (User) satisfaction in ICT. This is because factors affecting ICT user satisfaction in the public sector in South Africa have not been satisfactorily established.

For the past two decades, various studies have identified determinants of Information and Communications Technology (ICT) performance. These include the quality of information outputs, ICT staff competence, ICT operational efficiency and ICT user satisfaction. Most ICT researchers regard user satisfaction as a proxy of ICT performance. Employing user satisfaction in the evaluation of ICT effectiveness is certainly well established in the literature. However, several issues raise concerns. These include the assumption that factors affecting user satisfaction in the

private and public sectors are similar. The literature indicates that there is a considerable need for a special focus on the factors that affect user satisfaction in the public sector.

1.4 Purpose statement

The purpose of this research was to examine the factors that affect ICT user satisfaction in the public sector in South Africa. Through the analysis of the primary data the researcher hoped to:

1. Identify and validate end user problems and suggest improvements
2. Relate the findings to the Batho Pele principles.

1.5 Outline of chapters

The research report consists of the following chapters:

Chapter 1: Introduction

The introduction will include the background of the research, problem statement, purpose statement and an outline of the chapter of the research report.

Chapter 2 : Literature review

This chapter provides a detailed review of the dimensions of ICT user satisfaction and discusses the factors affecting it. The discussion provides a basis for exploring factors affecting user satisfaction in the public sector in South Africa. The chapter concludes by presenting eight propositions which will be empirically tested.

Chapter 3 : Research methodology

The framework within which the research will be conducted is presented. This includes the conducting of surveys. The method of data collection and data analysis will also be discussed.

Chapter 4 : Data Presentation

This chapter will summarize the results of the survey and present them through charts and graphs.

Chapter 5 : Data Analysis

The results will be analyzed with reference to the literature reviews in Chapter 2 and interpreted in terms of the research methodologies suggested in Chapter 3.

Chapter 6 : Conclusions and Recommendations

This chapter will summarize the findings on the factors affecting ICT user satisfaction in SASSA Gauteng. It will also show how this study contributes to the overall public service discourse in South Africa. It will discuss whether the research has met its objectives as well as provide recommendations for ICT departments based on the survey results. The limitations of the research as well as future areas of research will be addressed.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

The literature review explored studies in the chosen themes to generate possible hypotheses or propositions on factors that affect ICT user satisfaction in the public sector in South Africa. In the literature, the usage of the terms ICT, IS (Information systems) and IT (Information Technology) is interchangeable. Different authors prefer a different term for their writings. However in the contribution to King III report, Dagada, (2008) posit that the usage of the term IT on the King II report, poses a problem in the sense that it confines the understanding of these technologies only to hardware.

2.2 Definition of terms

Communication:	Communication between ICT and user community
Knowledge:	Shared knowledge between ICT and line managers
Leadership:	ICT leadership support
Service systems:	Quality of service systems
Skills:	Interpersonal and organizational skills
Technology:	Technology and innovation
Alignment:	Alignment between ICT business plan and business strategy
Service delivery:	ICT department's ability to deliver services
Regional Office:	SASSA's highest office in the Province
District Office:	SASSA's highest office in the district within the Province, for example, Ekurhuleni, Sedibeng

2.3 Role of ICT in the public sector

The terms e-government and e-governance are often used to describe a government's use of Information and Communication Technology (ICT) to render services to its citizens. Within the research community there is a debate on the correct use the two terms. Citing Drukker (2001), Garson (2003) posit that e-governance can be defined as "*the use of emerging information and communication technologies to facilitate the processes of government and public administration*". E-government can also be defined as "*the use of information technology to support government operations, engage citizens, and provide government services*" (Adams, 2003)

The discussion around the role of ICT in the public sector will take place within the context of New Public Management (NPM). SASSA is one such public agency that is a product of New Public Management thinking or philosophy.

Historically ICT has been important for government operations, running inventory systems, payroll systems, accounting systems and maintaining transaction records (Garson, 2003:175). However, ICT's management role is now rapidly expanding. Information systems are now better able to produce the timely information needed to set the agency direction, and to help determine whether the agency is moving in the right direction. Beside the fact that ICT helps with generic benefits such as communication, filing, and data repository, Garson (2003) suggest that: to realize the value and role of ICT in public organizations, the focus should be at the following critical management processes.

Strategic Management

One of the important steps in strategic planning is environmental scanning. The organization needs information about itself in order to adapt to change and be proactive. ICT can provide this information through data mining (Garson, 2003).

Feedback

The recent increase in ICT portability has been an important advance in managerial feedback (Garson, 2003).

Focus on overall results

ICT in the form of Geographical Information Systems (GIS) helps managers to identify overall patterns or broad trends, such as in police departments, parks boards etc. (Garson, 2003).

Multi-purpose centres

NPM also referred to as result-based management promotes one stop shopping, which brings together all related services in one location. Such co-ordinated service systems require co-ordinated information streams. Integrated systems not only increase client satisfaction through centralised purchasing but give organizations the ability to produce meaningful results (Garson, 2003:178).

2.4 Batho Pele / “People First”

To promote the notion of “putting people first”, and to provide a framework forf transformation of public service delivery, government introduced the concept of Batho Pele / “People First” in 1997. This approach was expanded in the white paper on transformation of public service, also known as the Batho Pele White Paper, which states that the terms “citizen” and “customers” would refer equally to internal and external customers.

The White Paper identifies and promotes an eight-step process with regard to customer-orientated service provision. The eight national principles (now eleven) that “Batho Pele” is based on form the parameters for improvement in the practice of serving the public (DPSA, 1997).

The Batho Pele principles are as follows: (DPSA, 1998)

a) **Consultation:** It is about consulting users of the service, conducting surveys, interviews, and stakeholder engagement
b) **Setting service standards:** It is about benchmarking and creating products and services of unquestionable standards
c) **Increasing access:** To provide access to previously disadvantaged communities in the form of multi-purpose community centres and call centres. Access to information is also critical for developmental purposes
d) **Ensuring courtesy:** It is about empathizing with the citizens of the community to whom the service provider is delivering the service
e) **Providing information:** It is about making available information about services at the point of delivery, but for users who are far from the point of delivery
f) **Openness and transparency:** A key aspect of openness and transparency is that the public should know more about the way national, provincial and local government institutions operate, how well they utilise the resources they consume, and who is in charge.
g) **Redress:** This principle emphasises a need to identify quickly and accurately when services are falling below the promised standard and to have procedures in place to remedy the situation
h) **Value for money:** This refers to the idea of using minimum resources to achieve maximum and high quality output

(DPSA, 1998)**.**

Additional Batho Pele principles have been approved by the Kwa-Zulu Natal Provincial Government:

a) **Encouraging innovation and rewarding excellence:** This is about using creative ways of achieving goals and rewarding staff where appropriate.

b) Customer impact: This is about adhering to the principles of Batho Pele which will help in improving service delivery. This will in turn have a positive impact on customers.

c) Leadership and strategic direction: Leaders should create an atmosphere which allows for creativity. They should also make sure that goals are set and achieved.

2.5 User satisfaction

In the literature there are two definitions for user satisfaction, and 'User Satisfaction' and 'End User Satisfaction' are used interchangeably. User satisfaction is defined as the opinion of the user about a specific computer application, which they use (Doll and Torkzadeh, 1988). Ives, Olson and Baroudi (1983) defined 'End User Satisfaction' as "the extent to which users believe the information system available to them meets their information requirements." This means that ICT user satisfaction will differ between individuals.

2.6 Understanding the concept of user satisfaction

The definition of user satisfaction has evolved with changes in the ICT environment. Early research on user satisfaction was conducted in the Traditional Data Processing (TDP) environment in which users interact with the computer indirectly with the assistance of an analyst or a programmer (Doll and Torkzadeh, 1988). User satisfaction has been defined as 'the extent to which users believe that the information system available to them meets their information requirements' (Ives *et al.*, 1983:785). Subsequent research on user satisfaction has been conducted in the End User Computing (EUC) environment in which users interact with

the computer directly, through application software, to enter information or produce reports (Amaroso and Cheney, 1991). Doll and Torkzadeh (1988) also define user satisfaction as ‘an affective attitude towards a specific computer application by someone who interacts with the application directly’.

2.7 User satisfaction: A marketing perspective (customer satisfaction)

The purpose of any business is to create value that meets the needs of all stakeholders (Miller, 1998). The intention is to boost market share and profitability and it is therefore important for organizations to focus on customer needs. This will provide a unifying focus for the efforts and projects of individuals and departments within the organization, thereby leading to superior performance (Richards, 2000).

2.8 Factors/dimensions affecting ICT user satisfaction

Bailey and Pearson (1993) identified 30 factors that contribute to ICT user satisfaction. The instrument was re-evaluated and refined by Ives *et al*. (1993), who summarised it into 13 factors. These factors can broadly be summarised into three main dimensions: Information Quality, Electronic Data Processing (EDP), and User Knowledge or Involvement.

Typical measures of “Information Quality” include accuracy, relevance, completeness, currency, timeliness, format, security, documentation and reliability. Measures of “EDP Staff and Services” mainly comprise staff attitudes, relationships, level of support, training, ease of access and communication. Finally, measures of “Knowledge or Involvement” mainly include user training, user understanding and participation (Ngai, Au, & Cheng, 2002).

Since SASSA is an organization that mainly deals with electronic data processing for the capturing of social security grants, for the purpose of alignment with Batho Pele principles and the development of the propositions, only the “EDP Staff and Services” dimension will be considered.

2.8.1 Communication

Communication is defined as a process in which individuals share and create information; through frequent communication they develop common definitions of situations and develop consensus (Johnson and Lederer, 2003). Frequent communication is important in ICT management, as it helps ICT personnel to determine how ICT can be used to support business functions (Johnson and Lederer, 2003).

The ICT department needs to continually communicate with the customer. ICT personnel must develop strong, ongoing partnerships with business managers; only through these relationships can the necessary communication occur to ensure that both business and technology are integrated into effective solutions for each level of business (Rockart, Earl and Ross, 1996). Rockart *et al.* (1996) posit that many ICT executives are assigning high-level “account managers” to focus specifically on ICT-business communication.

Mutual understanding between a Chief Executive Officer (CEO) and a Chief Information Officer (CIO) about the role of ICT is invaluable to an organization. It also draws attention to the context in which communication richness might have a greater or lesser impact. In particular, when planning future strategy, not only is frequent communication critical, but richness in communication also plays a role. Such findings are not only consistent with communications theory, but can also be used to stimulate

better mutual understanding among top executives (Johnson and Lederer, 2003).

<u>Proposition 1</u>: The greater the communication between ICT department and user community, the better the levels of satisfaction.

2.8.2 Knowledge

Understanding client business objectives well will place any support unit in a good position to function optimally. The ICT department should be in a position to understand the customer's needs beyond those that the customer verbalizes (Nkae, 2007). The ICT department must understand what customers value the most and how the ICT department can help them realize that which they value. The ICT group's ability to effectively work with functional (business) groups can be a major factor in ICT performance (Nelson and Cooprider, 1996). A primary responsibility of ICT groups is to deliver information technology based on the needs of the organization (Nelson and Cooprider, 1996). This implies the need for an understanding of the business in order for the ICT department to meet those requirements. Nelson and Cooprider (1996) suggest that the degree to which the ICT department believes it understands the business can impact its ability to successfully perform.

<u>Proposition 2</u>: Shared knowledge between information systems groups and their line customers will have a positive impact on the levels of satisfaction.

2.8.3 Service Delivery

Customer focus has been elevated in some organizations with regard to systems design. Smart and Whiting (2001) note that user-centred design has become a business strategy that many companies use to gain

competitive advantage and maintain economic viability. The increasing complexity of technology and of products requires a corresponding increase in awareness of customer requirements and how humans interact with systems (Smart and Whiting, 2001). At the heart of customer orientation is focus on the customer and having the right mechanisms in place to meet customer requirements. To respond to this challenge, ICT departments use mechanisms such as “time-box” approaches which require the delivery of usable system components at regular intervals, thus forcing ICT staff and their business partners to focus on functionality and avoid over-engineered solutions and unnecessary delays (Rockart *et al.,* 1996).

Proposition 3. The greater the ability of the ICT department to deliver service, the greater the levels of satisfaction

2.8.4 Service Systems

Service systems are the ability of the ICT department to deliver a quality service to the user community. ‘Service systems’ refers to whether customer satisfaction is measured on a regular basis and whether there are systems in place to measure customer satisfaction (Gray, Matear, Boshoff and Matheson, 1998).

Most organizations use surveys to determine the level of satisfaction of users regarding the service they provide. The negative aspect is that the findings of these surveys are not always utilized to improve the satisfaction levels.

Proposition 4: The greater the quality of service systems and feedback mechanisms, the greater the levels of satisfaction.

2.8.5 Skills

IT literature develops different conceptualizations of competence, varying in scope from narrowly focused on current task requirements to broader requirements of the profession (Bassellier and Benbasat, 2004). As ICT professionals are often assigned to projects involving different functional areas of the organization, it is important to develop a broad professional competence framework, rather than one designed for a specific set of tasks. In that sense, competence is considered here as non-routine, and embodies the ability to cope with complex and changing environments. It is not necessarily directly linked to a specific task but relates to the ability to transfer knowledge across tasks (Bassellier and Benbasat, 2004). In addition, Roepke, Agarwal and Ferrat (2000) call for a collaborative effort in general from all ICT professionals, regardless of their position in the organizational hierarchy. ICT professionals at all levels need to interact and work with their functional area peers in finding ways of linking business and ICT objectives (Bassellier and Benbasat, 2004).

The nature of ICT work, over and above their specialized skills, ICT staff that are in contact with the users, must possess knowledge about the organization which they serve and the appropriate interpersonal skills to interact with the organization (Rockart *et al.* 1996).

Proposition 5: The better the interpersonal and organizational skills of ICT staff, the better the level of satisfaction.

2.8.6 Innovation and Technology

Business innovation relies strongly on ICT. Advances in technology can revolutionise the way businesses operate, and it is imperative for the Information Systems department to be constantly seeking innovative ways to enable their customers (Bassellier and Benbasat, 2004). The ICT

function must promote an innovative climate that encourages its staff and organizational users to capitalise on new technologies (Saunders and Jones, 1992).

<u>Proposition 6</u>: The more innovative and adaptive the ICT department is, the better the levels of user satisfaction.

2.8.7 Alignment

In the ICT context, alignment refers to the alignment between the ICT department and the rest of the organization in terms of preparing business and ICT plans and strategies. Joint opportunity analysis in which functional and divisional people share ideas and discuss alternative solutions and approaches leverages the different strengths (Rockart *et al*., 1996).

Rockart *et al*. (1996) posit that the first imperative is to align ICT strategy with the organization's business strategy. To ensure that investments in ICT are, in fact, targeted at strategic priorities, ICT management must be knowledgeable about senior management's strategic and tactical thinking. This is not a new challenge. However, in attempting to achieve this position, citing Rockart *et al.* (1996), Nkae (2007) posit that it is necessary for the Chief Information Officer (CIO) to become either a formal or informal member of the top management team and for other senior ICT executives to be members of key task forces. ICT people must be present where business strategies are debated. Alignment, however, is two-way. It is becoming clear as firms consider their future in an information era of superhighways, multimedia and information richness, that ICT executives should contribute more positively to management thinking by identifying the business threats and opportunities posed by ICT. It is evident now that technology influences strategy as well as the other way around (Rockart *et al.*, 1996).

<u>Proposition 7</u>: The better the alignment between ICT business plan and business strategy, the better the levels of satisfaction.

2.8.8 Leadership Support

Customer satisfaction in any organization is the responsibility of top management. Only the CEO can take responsibility for defining customer and market orientation as the driving forces. Transformation to a customer orientation requires that senior leaders must articulate organizational aims in terms that are harmonious with customer satisfaction drivers, and their behaviour must be consistent with these (Nkae, 2007). Citing Kohli and Jaworski (1990), Kennedy *et al*. (2003), posit that the generation and dissemination of market intelligence is critical to sustaining a focus on customer satisfaction and ensuring that activities are evaluated in terms of their contribution to customer value. For a customer orientation to advance, market intelligence must be disseminated through formal and informal means, and information must flow both laterally and vertically within the organization (Kennedy *et al*., 2003).

<u>Proposition 8</u>: The more ICT leadership shows support for customer/user orientation, the greater the levels of satisfaction.

2.9 Propositions

P1: The greater the communication between the ICT department and user community, the better the levels of satisfaction.

P2: Shared knowledge between information systems groups and their line customers will have a positive impact on the levels of satisfaction.

P3. The greater the ability of the ICT department to deliver service, the greater the levels of satisfaction.

P4: The greater the quality of service systems and feedback mechanisms, the greater the levels of satisfaction.

P5: The better the interpersonal and organizational skills of ICT staff, the higher the level of satisfaction.

P6: The more innovative and adaptive the ICT department is, the better the levels of user satisfaction.

P7: The better the alignment between the ICT business plan and the business strategy, the better the levels of satisfaction.

P8. The more ICT leadership shows support for customer/user orientation, the greater the levels of satisfaction.

2.10 Conclusion

Although much research has been done in the field of user satisfaction, the literature indicates that there is a considerable need for a special focus on the factors that affect user satisfaction in the public sector in South Africa. These gaps as identified in the review of literature have highlighted the necessity for further investigation.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

The aim of this study was to explore factors that affect ICT User Satisfaction in the public sector. This chapter describes the methodology applied for this purpose and the rationale behind it. The data collection strategy is also discussed, including questionnaire construction, sampling and administration. The strategy for data analysis is also presented.

3.2 Research Approach

Different types of research approaches have their advantages and disadvantages. This research adopts a quantitative approach. In quantitative analysis primary data is collected in numeric form for the purpose of improving the understanding of the nature of relationships between different variables (Hussey and Hussey, 1997). The researcher will be looking at the relationships between relevant variables or factors and user satisfaction, hence the adoption of a quantitative approach. The quantitative study will help with the applicability of the results to a broader context and will involve testing the propositions developed in the literature review (Fouche, Delport, Strydom and Vos, 2002).

3.3 Research Design

This study uses a survey methodology. A survey is a methodology whereby a sample of subjects is drawn from a population and studied to draw inferences about the population (Hussey and Hussey, 1997). A survey approach is particularly suitable for this study because it allows for determining the actual values of variables under study, and the strengths

of relationships among them. Furthermore, in a number of past studies marketing researchers adopted a survey approach in studying the effects of service performance on customer satisfaction.

3.4 Data Collection

3.4.1 Instrument construction

Data was collected through a self-developed and self-administered online questionnaire. It was designed in such a way that all those items intended to be measured can be rated on a 1-to-5 Likert Scaling response scale. The questionnaire was designed as an Adobe form, using Adobe Acrobat 8 Professional (see Appendix A). It was e-mailed together with a brief explanation outlining the aim of the research and assuring confidentiality to all respondents. The assumption was that all respondents are computer users.

Self-administered questionnaires are typically low in cost, and they afford more time allocation to the questions, allowing respondents to collect facts, talk with others, and to consider replies at length. The major weakness is that of non-response (Emory and Cooper, 1991).

In developing the questionnaire, the researcher chose the following eight factors that relate to ICT user satisfaction, also highlighted in the literature review, and based on the writings of Gluck (1996), Goodhue *et al*. (1998), Ives *et al*. (1983), Rockart *et al*. (1996), Pearson & Bailey (1980), Pitt *et al*. (1995) and Nkae (2007). From each factor, two items were developed to support a factor as listed below:

1. **Communication between ICT and user communities**
   a) Regular meetings between ICT department and SASSA staff. (CRM)

b) Frequent communication between ICT users and ICT Service desk (CSD)

2. Shared knowledge between ICT and line managers

a) The ICT department must understand attributes of services that users value most. (SKU)
b) ICT planning must be driven by business needs (SKP)

3. ICT Department ability to deliver services

a) The ICT department must show a sincere interest in solving users' problems. (SDI)
b) Operating hours for ICT department must be convenient to all its users. (SDO)

4. **Quality of service systems**

a) The ICT department should continuously collect, analyze data to observe any changes in SASSA's business service priorities. (SSC)
b) The ICT department should regularly conduct surveys to measure user satisfaction (SSS)

5. Interpersonal and organizational skills

a) ICT staff should be trained on interpersonal and organizational skills (IOS)
b) ICT staff should be trained on SASSA business and its processes (IOT)

6. Technology and innovation

a) The SASSA ICT department should utilize the latest technology in the market. (TIT)
b) ICT department should have a dedicated ICT researcher. (TIR)

7. Alignment

a) Linkage between ICT operational plan and SASSA strategic plan (AOS)
b) ICT procurement should be informed by business needs (APB)

8. Leadership support

a) The Chief Information Officer/ICT Manager must share a company-wide vision with ICT staff. (LSV)
b) Senior ICT managers must regularly articulate to ICT staff customer-oriented values**.** (LSC)

3.4.2 Sampling

The unit analysis of this study was computer users in SASSA's Gauteng Offices i.e. regional, district and local offices. The type of sampling was a stratified random sampling. This sampling method is used to divide a population into homogeneous sub-groups (strata). Each stratum is then sampled individually. The researcher will separately evaluate the sample results or may combine them to furnish an estimate of the characteristics of the total population. Stratification improves the sampling process and enables a researcher to relate sample selection to the materiality and turnover of items (Ritchie *et al.*, 2003).

In minimising researcher bias, selection of the population avoided the following aspects:

- non-random selection of respondents from the same population
- selection of respondents from different or ill-defined study populations
- failure to locate or unwillingness of people to participate
- Reducing the redundancy of responses from the participants in order to get the overview of the research as accurately as possible.

3.4.3. Characteristics of the correspondents

For the purpose of this research, the population is defined as any person who works for SASSA within Gauteng and uses a computer to perform his/her daily functions. The survey respondents were officials from 1 regional, 10 local and 5 district offices of SASSA in Gauteng Province. They were users from different levels, such as managers, supervisors and operators. The design of the questionnaire allowed every respondent to indicate whether he/she is an operator, supervisor or manager.

It must be noted that with regard to in the SASSA structure, the term Regional Office refers to Provincial Office. Nationally there are 9 Regions and Gauteng is one of these. Gauteng Region has 5 districts with more or less five local offices for each district, hence the 1:5:10 selection.

User satisfaction was measured by asking the respondents to indicate the extent to which their ICT department displays certain qualities and characteristics as reflected on the questionnaire (Appendix A).

3.5. Data Analysis

Data analysis for this study was performed using XLStat 2006 and NCSS 2007 statistical packages for Windows, which analyses data in numerical form. Data analysis will be performed in three steps:

- Data screening
- Check for validity and reliability
- Propositions testing.

3.5.1 Data screening

To screen the data the following will be done:

- Handle missing values

- Test assumptions of normality
- Identify outliers.

3.5.2 Validity and Reliability

A measure is valid when the differences in observed scores reflect true differences in the characteristic that one is attempting to measure and nothing else (Seddon & Quin, 2005). For this study, construct validity for each scale will be assessed using Factor Analysis (Hussey and Hussey, 1997). A measure is reliable to the extent that independent but comparable measures of the same trait or construct of a given object agree (Seddon & Quin, 2005). Following the factor analysis, each factor will be tested for reliability using Cronbach's Alpha (Hussey and Hussey, 1997).

After reliability testing, only the descriptive statistics of the composite variables will be presented.

3.5.3 Proposition Testing

Factor analysis and correlation techniques were used to test the different propositions. Factor analysis is a statistical approach that can be used to analyze inter-relationships among a large number of variables and to explain these variables in terms of their common underlying dimensions (factors) (Andy, 2000). The statistical approach required that the information contained in a number of original variables should be condensed into a smaller set of dimensions (factors) with a minimum loss of information (Hair *et al*., 1992). Propositions one to eight will be examined independently for a relationship to user satisfaction using Correlation Analysis. The size of the value of the correlation indicates the strength of the relationships between two variables. The direction of the

relationship is indicated by a negative sign for a negative correlation while a positive sign indicates a positive correlation.

3.6. Limitations

The geographical location of the sample is limited to areas within Gauteng and this might create some predisposition on other provinces. Irrespective of the standardization principle of SASSA, there might be a limited discrepancy from other provinces. Furthermore, the opinion of policy makers in SASSA head office is yet to be solicited.

Since completion of the questionnaire is at the discretion of the respondent, it is possible that only a narrow segment may participate in the survey, thus leading to a lack of representation.

3.7. Summary

This chapter presented the methodology and approach of the study. The objective of this study was to explore factors that affect ICT user satisfaction in the public sector in South Africa. The general methodology was presented. The data collection strategy was described. Finally descriptions of the data analysis strategy were given. Results of the survey and analysis will be presented and discussed in the next chapter.

CHAPTER 4
DATA PRESENTATION

4.1 Introduction

In this chapter the researcher presents the results of the analysis of the data gathered through the questionnaires. The researcher will provide a brief description of the demographics of the respondents, the rate of response and the results of the data screening. The researcher will test the propositions presented against the findings, and then provide a summary of the chapter.

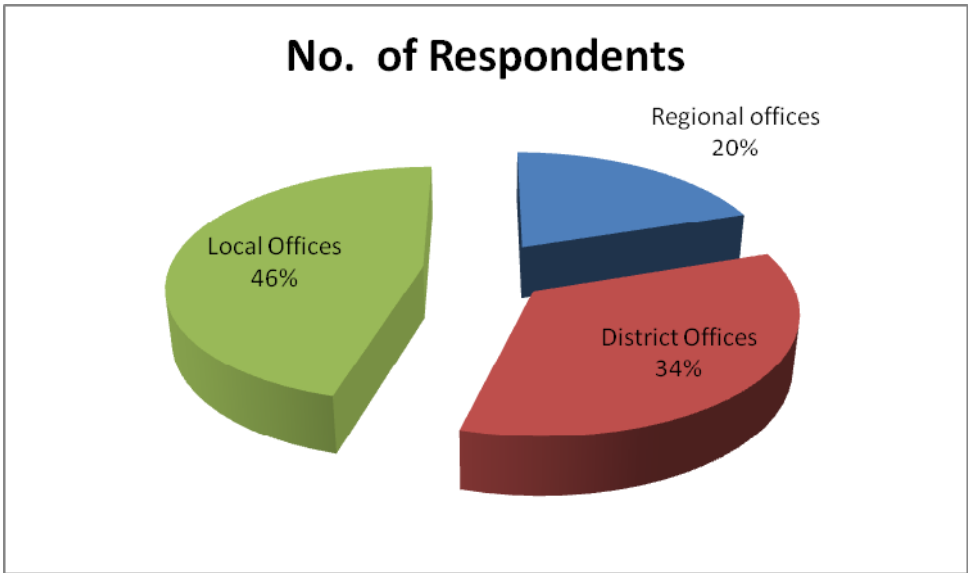
4.2 Response Rate

Over a period of 12 weeks, 200 questionnaires were distributed in the SASSA Gauteng offices. A total of 158 were received, which is 74.5% of the total sample. Seven had missing values and were discarded, and 151 questionnaires were finally chosen for processing. Of the 151 questionnaires captured, 69 were from local offices, 52 from district offices and 30 from the regional office.

Table1: Respondents categorized by offices

OFFICES	**No of Respondents**
Regional Office	30
District Offices	52
Local Offices	69
TOTAL	**151**

Graph.1: Respondents categorized by offices

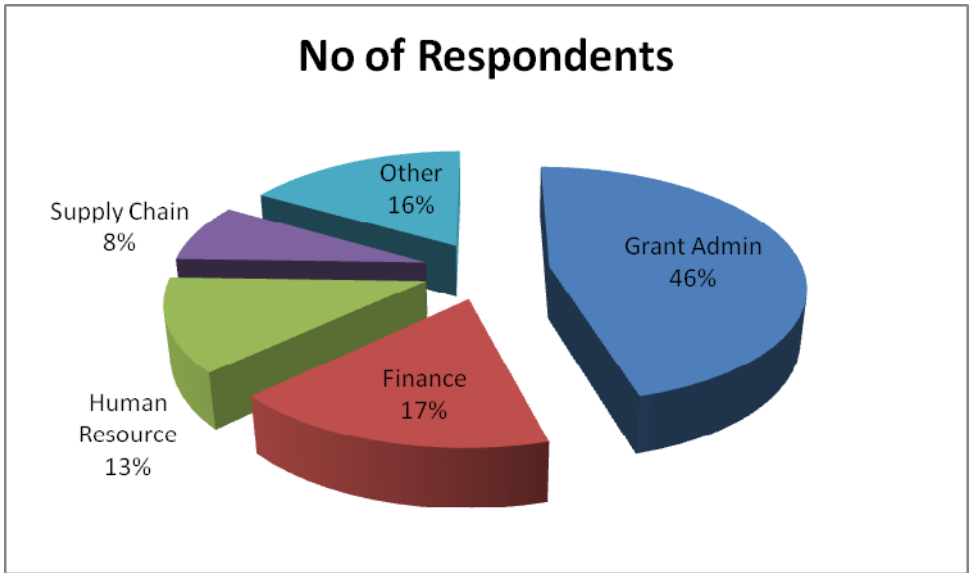


The above table and graph indicate that most of the respondents are from local offices. This is because of the number of offices chosen. SASSA core business largely takes place in the district and local offices. These offices are in SASSA terms defined as “service delivery points”. The following table reflects the respondents according to their respective area of work.

Table 2: Respondents categorized by function

FUNCTION	No of Respondents
Grant Administration	69
Finance	26
Human Resources	19
Supply Chain	12
Other	25
TOTAL	**151**

Graph 2: Respondents categorized by function

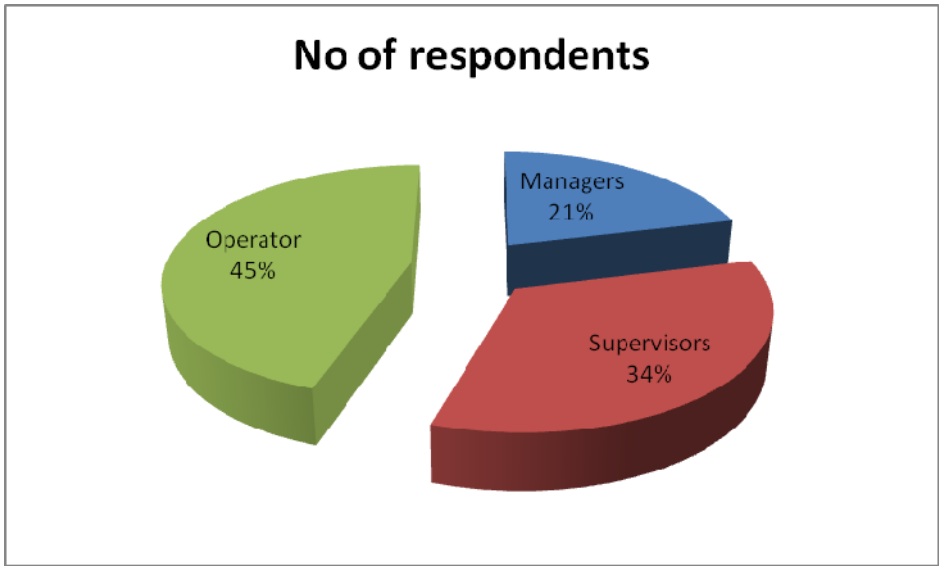


Of the respondents, 46% were from Grant Administration which is a core business of the organization, 17% were from Finance, 13% from Human Resources, 9% from Supply Chain and 16% from other departments, namely all other support functions that are not represented – ICT, Facilities Management, Legal Services and Communication.

Table 3: Respondents categorized by title

TITLE	**No of respondents**
Managers	32
Supervisors	51
Operators	68
TOTAL	**151**

Graph 3: Respondents categorized by the title



The above table and graph represent the spread of respondents according to their title or rank at work. The categorizing of respondents in this manner was necessary in order to get opinions from all levels of the organizational structure.

4.3 Data Screening

4.3.1 Missing Values

Data was screened for missing values In the 16 items testing the importance of user satisfaction to all respondents, 7 had missing values as follows:

Table 4: Missing Values

Item	No of missing values
CRM	1
SKP	1
SDO	1
SSS	2
TIR	1
TIT	2
LSV	1

The questionnaires that had missing values were then discarded and 151 remained for analysis.

4.3.2 Distribution of data

The researcher checked the distribution of the data by examining skewness and kurtosis.

Kurtosis is a measure of the extent to which observations cluster around a central point. For a normal distribution, the value of the kurtosis statistic is zero. Positive kurtosis indicates that the observations cluster more and have longer tails than those in the normal distribution, while negative kurtosis indicates that the observations cluster less and have shorter tails (Hair, Black, Babin, Anderson and Tatham, 2006). Skewness is a measure of the asymmetry of a distribution. The normal distribution is symmetric and has a skewness value of zero. A distribution with a significant positive skewness has a long right tail. A distribution with a significant negative skewness has a long left tail (Hair *et al*., 2006).

The following table shows the mean, standard deviation, skewness and kurtosis values of the data collected:

Table 5: Skewness and Kurtosis

Item	Mean	Standard Deviation	Skewness	Kurtosis
CRM	3.331	0.526	-0,180	0.339
CSD	3.245	0.611	-0.734	0.731
SKU	3.245	0.577	-0.658	0.069
SKP	3.212	0.573	-0.026	-0.352
SDI	3.199	0.622	-0.475	0.228
SDO	3.212	0.618	0.733	0.633
SSC	3.219	0.621	-0.504	0.260
SSS	3.192	0.608	-0.715	0.716
IOS	3.318	0.615	0.673	0.440
IOT	3.285	0.582	-0.720	0.036
TIT	3.272	0.588	-0.426	0.446
TIR	3.305	0.566	-0.599	0.961
AOS	3.265	0.562	0.688	0.288
APB	3.212	0.618	0.676	0.590
LSV	3.099	0.586	-0.735	0.707
LSC	3.159	0.612	0.487	0.417

The skewness and kurtosis values above give reasonable assurance that the data collected in terms of the factors of user satisfaction follow a normal distribution. This is based on the rule of thumb that these values should lie between zero and +- 1. No item fell outside this range, and on the whole it was not considered necessary to transform any of the items.

4.3.3 Outliers

Data was checked for outliers. Outliers are those responses that usually have high or low values. These are data sets that contain values which appear to be inconsistent with others, often because they are unusually small or unusually large by comparison with the remainder (Cooper & Weekes, 1983). There were no outliers in the data set collected.

4.4 Validity and reliability measure

Using NCSS 2007, Factor Analysis was run on the data to determine uni-dimensionality (construct validity) of the items measuring user satisfaction. Factor analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables (Hair *et al*., 2006).

4.4.1 Validity

With the initial run of Factor Analysis, all communalities exceeded 0.300 (Hair *et al*., 2006); the presence of six factors with eigenvalues exceeding 1 was revealed. To aid in the interpretation of the six components, Varimax rotation was performed. An *a priori* decision rule specified that an item will not be retained unless its loading is greater than 0.6 on at least one factor (Hair *et al*., 2006); items that cross-loaded highly onto more than one factor would also be eliminated.

Finally a stable solution consisting of six factors that explained 70.756% of the variance in the individual items was extracted. This is an indication that the validity of these items is good as it is over 60% (Hair *et al*., 2006). The tables below depict the factors Eigenvalues, % variance explained and item loadings:

Table 6: Summary of data

Variable	Returns	Returns with missing data	Minimum	Maximum	Mean	Std. deviation
CRM	151	0	1.000	4.000	3.172	0.823
CSD	151	0	1.000	4.000	3.192	0.709
SKU	151	0	1.000	4.000	3.205	0.656
SKP	151	0	1.000	4.000	3.146	0.697
SDI	151	0	1.000	4.000	3.172	0.671
SDO	151	0	1.000	4.000	3.146	0.734
SSC	151	0	1.000	4.000	3.192	0.670
SSS	151	0	1.000	4.000	3.126	0.724
IOS	151	0	1.000	4.000	3.291	0.669
IOT	151	0	1.000	4.000	3.245	0.663
TIT	151	0	1.000	4.000	3.205	0.715
TIR	151	0	1.000	4.000	3.278	0.624
AOS	151	0	1.000	4.000	3.225	0.645
APB	151	0	1.000	4.000	3.159	0.713
LSV	151	0	1.000	4.000	2.993	0.753
LSC	151	0	1.000	6.000	3.026	0.816

Table 7: Eigenvalues

	F1	F2	F3	F4	F5	F6
Eigen value	3.321	2.160	1.901	1.618	1.282	1.038
Variability (%)	20.759	13.503	11.880	10.112	8.014	6.489
Cumulative %	20.759	34.262	46.141	56.253	64.267	**70.756**

Table 7 reflects the Eigenvalues for six factors where Eigenvalue is greater than 1 after nine iterations (see Annexure B). These are the factors that need to be considered for our study. The cumulative percentage for the Eigenvalues indicated that these factors explained the analysis by 70.756%

Graph 4: Scree Plot and eigenvalues

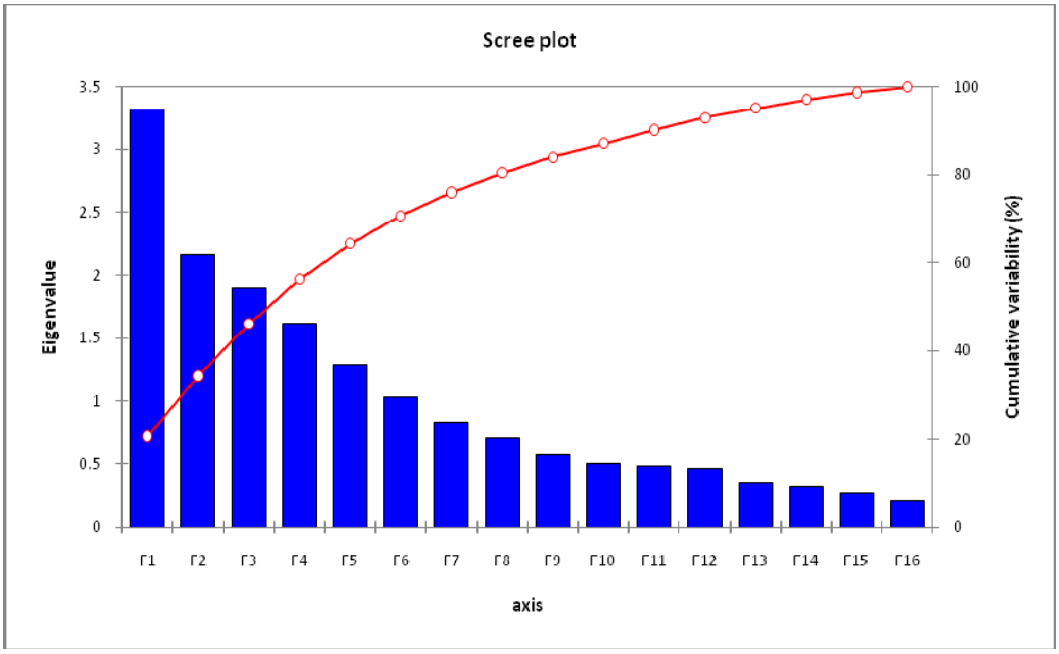


Table 8: Factor Pattern

	F1	F2	F3	F4	F5	F6	Final communality
CRM	0.348	**-0.626**	0.108	0.028	0.402	-0.271	0.760
CSD	0.467	**-0.655**	0.062	-0.014	0.208	-0.246	0.756
SKU	0.473	**-0.594**	0.183	0.119	0.058	0.148	0.649
SKP	0.468	**-0.495**	0.119	0.211	-0.400	0.262	0.751
SDI	0.419	-0.181	-0.126	0.278	**-0.527**	0.091	0.588
SDO	0.315	0.132	**-0.629**	0.450	-0.266	-0.160	0.810
SSC	0.240	0.053	**-0.770**	0.137	0.103	0.090	0.690
SSS	0.320	-0.020	**-0.725**	-0.141	0.239	-0.108	0.717
IOS	0.165	-0.095	-0.354	**-0.728**	0.124	0.040	0.709
IOT	0.482	0.049	0.093	**-0.580**	-0.266	-0.183	0.684
TIT	0.465	0.130	0.072	**-0.530**	-0.401	0.057	0.683
TIR	0.452	0.371	0.197	0.067	-0.215	**-0.582**	0.770
AOS	**0.467**	0.390	0.218	0.257	0.179	-0.379	0.660

APB	**0.534**	0.421	0.243	0.146	0.294	0.231	0.683
LSV	**0.669**	0.306	0.021	0.011	0.248	0.277	0.681
LSC	**0.688**	0.313	0.152	0.009	0.161	0.331	0.730

Table 9: Percentage of variance after Varimax rotation

	F1	F2	F3	F4	F5	F6
Variability (%)	13.844	13.201	12.333	11.360	10.525	9.493
Cumulative %	13.844	27.045	39.378	50.739	61.263	**70.756**

Table 10: Factor pattern after Varimax rotation:

VARIABLE	F1	F2	F3	F4	F5	F6
CRM	0.003	**0.868**	0.032	-0.030	-0.039	0.054
CSD	-0.010	**0.844**	0.072	0.112	0.147	0.069
SKU	0.190	**0.654**	-0.080	0.019	0.400	-0.136
SKP	0.105	0.345	-0.078	0.084	**0.771**	-0.113
SDI	0.030	0.041	0.165	0.078	**0.734**	0.116
SDO	-0.014	-0.138	**0.706**	-0.152	0.413	0.313
SSC	0.104	-0.035	**0.812**	-0.046	0.081	-0.099
SSS	0.063	0.166	**0.795**	0.190	-0.132	-0.030
IOS	-0.017	0.129	0.313	**0.655**	-0.281	-0.293
IOT	0.097	0.103	-0.039	**0.780**	0.076	0.220
TIT	0.185	-0.086	-0.053	**0.761**	0.230	0.085
TIR	0.127	-0.018	-0.020	0.229	0.084	**0.833**
AOS	0.415	0.092	0.018	-0.073	-0.072	**0.684**
APB	**0.801**	-0.007	-0.036	-0.031	-0.020	0.196
LSV	**0.781**	0.072	0.177	0.150	0.057	0.087
LSC	**0.817**	0.043	0.043	0.180	0.139	0.090

Graph 5: factor loadings after Varimax

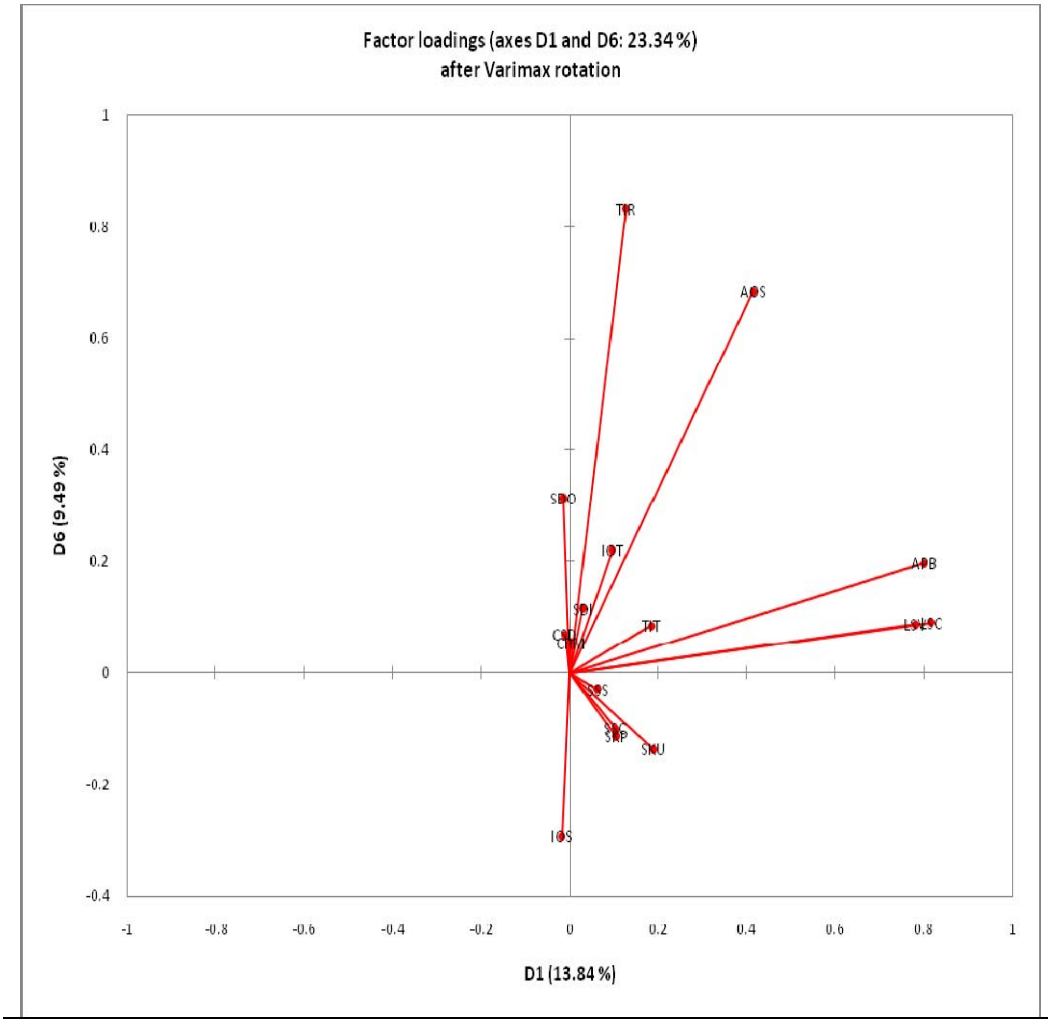


Table 11: Bar Chart of Absolute Factor Loadings after Varimax Rotation

Variables	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
CRM	|	||||||||||||||	|	|	|	|
CSD	|	||||||||||||||	|	|	|	|
SKU	||	||||||||||||	||	|	|||||	|
SKP	|	|||||||	|||	|	||||||||||||	|
SDI	|	|	||	||	|||||||||||	|
SDO	||	|||||	|||||||||||	|||	||||||||	||||
SSC	|	|||	|||||||||||||	||	|	|
SSS	|	||	|||||||||||||	||	||||	|||
IOS	||	|	||||||	|||||||||	|||||	|||||||
IOT	||	||	||	||||||||||||||	|	|
TIT	|	||	||	||||||||||||	|||	|||||
TIR	||||||	|	|	||||||	||	||||||||||||
AOS	||||||||	|	|	|	|	|||||||||||
APB	||||||||||||||	|	|	|	|	||||||
LSV	|||||||||||||||	|	||	|	|	|
LSC	|||||||||||||||	||	|	|	||	|

Table 12: Factor Structure Summary after Varimax Rotation

	F1	F2	F3	F4	F5	F6
Items	APB	CRM	SDO	IOS	SKP	TIR
	LSV	CSD	SSC	IOT	SDI	AOS
	LSC	SKU	SSS	TIT		
Factors	Leadership	Communication	Service Systems	Skills	Knowledge	Technology

Table 13: Items ranking against factors

User satisfaction Factors	Items	Survey Question	Loading	Rank
Leadership	**LSC**	The Chief Information Officer/ICT Manager must share a companywide vision with ICT staff.	**0.817**	**1**
	LSV	Senior ICT managers must regularly articulate to ICT staff customer oriented values.	**0.781**	**3**
	APB	ICT procurement should be informed by business needs	**0.801**	**2**
Communication	**CRM**	Regular meetings between ICT department and SASSA staff.	**0.868**	**1**
	CSD	Frequent communication between ICT users and ICT Service desk	**0.844**	**2**
	SKU	The ICT department must understand attributes of services that users value most.	**0.654**	**3**
Knowledge	**SDI**	The ICT department must show a sincere interest in solving users' problems.	**0.734**	**2**
	SKP	Operating hours for ICT department must be convenient to all its users.	**0.771**	**1**
Service systems	**SSC**	The ICT department should continuously collect, analyze data to observe any changes in SASSA's business service priorities.	**0.812**	**1**
	SSS	The ICT department should regularly conduct surveys to measure user satisfaction	**0.795**	**2**
	SDO	Operating hours for ICT department must	**0.706**	**3**

		be convenient to all its users		
Skills	**IOS**	ICT staff should be trained on interpersonal and organizational skills	**0.655**	**3**
	IOT	ICT staff should be trained on SASSA business and its processes	**0.780**	**1**
	TIT	The SASSA ICT department should utilize the latest technology in the market	**0.761**	**2**
Technology	**TIR**	ICT department should have a dedicated ICT researcher	**0.833**	**1**
	AOS	Linkage between ICT Operational plan and SASSA strategic plan	**0.684**	**2**

4.4.2 Reliability

Table 14: Cronbach's Alpha

Leadership	0.774
Communications	0.752
Systems Service	0.710
Skills	0.619
Knowledge	0.544
Technology	0.579

After factor analysis, a reliability test was performed on the remaining six factors, using Cronbach's alpha co-efficient

Cronbach's alpha measures how well a set of items (or variables) measures a single uni-dimensional latent construct. When Data have a multidimensional structure, Cronbach's alpha will usually be low.

Technically speaking, Cronbach's alpha is not a statistical test but rather a co-efficient of reliability (or consistency) (Cooper & Weekes, 1983).

Cronbach's alpha can be written as a function of the number of test items and the average inter-correlation among the items. Below, for conceptual purposes, we show the formula for the standardized Cronbach's alpha:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$$

Here N is equal to the number of items, c-bar is the average inter-item co-variance among the items and v-bar equals the average variance (Cooper & Weekes, 1983).

This makes sense intuitively, since if the inter-item correlations are high, there is evidence that the items are measuring the same underlying construct. This is really what is meant when someone says they have "high" or "good" reliability. They are referring to how well their items measure a single uni-dimensional latent construct (Cooper & Weekes, 1983).

Thus, if multi-dimensional data is presented, Cronbach's alpha will generally be low for all items. In this case, a factor analysis is run to see which items load highest on which dimensions, and then the alpha of each subset of items is taken separately.

Reliability co-efficients depicted in the above table after a final Varimax rotation ranges from 0.54 to 0.77.

For scales which are used as research tools to compare groups, alpha may be less than in the clinical situation, when the value of the scale for an individual is of interest. For comparing groups, alpha values of 0.7 to 0.8 are regarded as satisfactory (Steyn, Smit, Fu Toit, & Strasheim, 2007).

Citing McKinley *et al* (2005), Bland, (1997) posit that in his recent study a questionnaire was devised to measure patient satisfaction with calls made by general practitioners out of hours. This included eight separate scores, which were interpreted as measuring constructs such as satisfaction with communication and management, satisfaction with doctor's attitude and similar. The quoted alpha for each score ranged from 0.61 to 0.88. It was concluded that the questionnaire has satisfactory internal validity, as five of the eight scores had α>0.7. In the same issue Bosma *et al (*2003) report similar values, from 0.67 to 0.84, for assessments of three characteristics of the work environment (Bland, 1997).

Based on the above, it can be assumed that the reliability is considered acceptable.

4.5 Summary

As indicated in the outline of chapters, the objective of this chapter is to present data collected from the returns of the units of analysis. A total of 151 useful returns was collated:39 from regional office, 52 from district offices and 69 from local offices. Data was also categorized by function i.e. what function does a respondent perform, and title, i.e. what title or role does a respondent have or play in the organization. The next step was to perform data screening where the researcher checked for missing values, data distribution, outliers, validity and reliability. The highlight of the chapter was factor analysis, using both NCSS 2007 and XLStat 2009, in order to check for eigenvalues, communalities, percentage variance explained and item/factor loading. The researcher presented data in the form of tables and graphs in order to simplify the understanding and the spread for the reader. For reliability, the researcher presented the results of Cronbach's alpha from the final run of the XLStat software. The presentation and results will be analyzed in the next chapter

CHAPTER 5
DATA ANALYSIS

5.1. Introduction

The objective of this chapter is to analyze, discuss, explain and interpret the data presented in Chapter 4 in relation to the literature discussed in Chapter 2. In order to be in a better position to understand the analysis, there is a need to reflect again on what the study seeks to achieve. The study aimed to explore factors affecting user satisfaction in the public sector in South Africa. Literature described user satisfaction as the opinion of the user about a specific computer application which they use (Doll and Torkzadeh, 1988). Ives, Olson and Baroudi (1983) defined 'End User Satisfaction' as "the extent to which users believe the information system available to them meets their information requirements."

The definition of the term User Satisfaction played a critical role in determining the scope of the research including the unit of analysis.

5.2. Demographic profile

As presented in Chapter 4, our respondents are computer users in SASSA offices in the Gauteng region. Data was presented in different categories. From the presentation of data, it becomes evident that most of the people who took part in the study are people from the local offices. This is because most of the offices in Gauteng are local offices, where service delivery takes place. Of 151 respondents in Gauteng, 46% of the respondents came from local offices. District offices were the second largest segment of the respondents. This is because some of the functions performed in the local offices are not performed in the districts. The same

applies to the regional office which scored 20% of the respondents. It is also not surprising to find that most respondents recorded in terms of function were from the grant administration branch. This is the core function of the organization. Most of the users in Grant Administration are from local offices. Although there are also some functionaries of Grant Administration in District and Regional offices, their numbers are insignificant compared to the local offices.

Looking at respondents categorized by title/role performed, most of the respondents were operators. These are the officials who mostly work in the local offices, performing the core function of registering grants for the beneficiaries. There are few of these functionaries in the district and none at all in the regional office.

The figure also registered a high number of supervisors at 34%. Supervisors cut across the whole spectrum of offices. These officials are also not only confined to a single category of functions. There are supervisors in all functional branches, e.g. in Human Resources, Supply Chain and ICT. Regional office in most cases is represented by a high volume of managers and lower levels of Support Services.

5.3. Data Integrity

The researcher screened for missing values and discovered that seven items had missing values. All the returns that had missing values were discarded. The decision was based on the fact that the researcher enjoyed the benefit of a sizeable number of returns. The researcher also checked if there were respondents who omitted more that 10% of data, in which case the returns would be discarded. Only one respondent had more that 10% of its items unanswered and it was therefore eliminated from further analysis. Furthermore, there were no outliers, as explained in Chapter 4.

The researcher tested validity and reliability using factor analysis and Cronbach's' alpha respectively. It must, however, be mentioned that co-

efficients of alpha were extracted from the factor analysis which will be discussed in the next paragraph.

5.4. Factor Analysis

The researcher decided to use both XLStat and NCSS 2007 in performing factor analysis. Initially, data that was obtained from the verified 151 returns was loaded on XLStat. The parameters are reflected in Appendix B. The researcher loaded eight factors on the application as reflected in the literature as possible factors affecting user satisfaction. Varimax rotation was also chosen as the most popular rotation technique.

5.4.1 Summary of Data

Table 6 is the presentation of a summary of data after running XLStat. The table shows that 151 returns were maximum returns analyzed, with no missing values. From the Likert scale of 1-5, the minimum value was found to be 1 and the maximum value was 4. The mean of all 16 items ranged from 3.026 – 3.291, with the standard deviation also from 0.624 – 0.823.

5.4.2 Eigenvalues and Screeplot

After Varimax rotation was completed, only six factors with eigenvalues of more than 1 were obtained (see Table 7). These showed that these are the only factors that can be considered for the study. Finally, the stable solution consisting of six factors that explained 70.756% of individual items was extracted. Percentage of variance after Varimax rotation also confirmed that the six factors extracted explained the analysis by 70.756% (see Table 9).

5.4.3 Factor loadings

Factor loading seeks to obtain a pattern of loadings on each factor that is as diverse as possible, lending itself to easier interpretation. The greater the loading the item has in common with one and only one factor, the more probable the item is a valid measure of the factor (Sankar, 2009). The loadings listed under the 'Factor' represent a correlation between that item and the overall factor. Like Pearson correlations, they range from -1 to 1. Table 10 is the table of rotated factor loadings. In numeric terms, it is clear that the higher loadings for factor 1 are in LSC, LSV and APB. For factor 2, higher loadings are found in variables CRM, CSD and SKU. Factor 3's higher loadings are represented by SDO, SSC and SSS. Factor 4 has higher loadings represented by IOS, IOT and TIT. Factor 5 is represented by SDI and SKP. Lastly Factor 6 has higher loadings from TIR and AOS. From Table 12 which is the summary of factor structure, it is clear that LSV and LSC, CRM and CSD, SSC and SSS, IOS and IOT are a reliable measure of the factor. SDI and TIR are also individually reliable measures of Factor 3 and Factor 4 respectively. Acceptable abnormality is that AFB highly explain Factor 1, SKU explain Factor 2, SKP Factor 3, SDO Factor 4, TIT Factor 5, and AOS Factor 6.

In order to fully explain the above ranking and their importance in analyzing the factors that affect user satisfaction constructs, we need to refer back to the questionnaire to compare the ranking of each factor. This time, as mentioned in the previous chapter, the researcher decided to demonstrate the loadings using NCSS 2007 Bar Chart of Absolute Factor Loadings after Varimax. This is because bars are more graphically represented than numbers. The spread of loadings is more visible and clearer (see Table 11).

5.4.4. Items ranking against factors

In order to clearly determine the relationship of the items against the factors, the researcher ranked the items to understand which best explain the factor under study (see table 13).

For Factor 1, **Leadership**, the items were ranked as LSC, APB, and LSV (highest to lowest). APB was grouped under this factor based on the factor analysis output.

For Factor 2, C**ommunication**, the items were ranked as CRM, CSC and SKU (highest to lowest). SKU was grouped under this factor based on the factor analysis output.

For Factor 3, **Service Systems**, the items were ranked as SSC, SSS and SDO (highest to lowest).

For Factor 4, **Skills**, the items were ranked as IOT, IOS and TIT (highest to lowest).

For Factor 5, **Knowledge**, the items were ranked as SKP and SDI (highest to lowest).

For Factor 6, **Technology,** the items were ranked as TIT and SDO (highest to lowest).

5.5. Discussion of Results

The results of the factor analysis confirm and indicate that there are only six factors likely to affect ICT User satisfaction in the public sector in South Africa. The Eigenvalues obtained conclude that the six factors are 70.756% explained.

The item analysis showed that four of the six factors were very good measures of reliability. The Knowledge and Technology factors had an alpha value of 0.544 and 0.579 respectively, which were low. However, citing Cortina (1993), Sankar (2009), explains that an alpha value of at least 0.5 should be considered for accepting items within a dimension, provided they are within a small instrument of between 10 – 15 items, which this study had. For a greater number of items, an alpha value of greater than 0.8 should be used (Cortina, 1993).

The factor loading for all factors identified had a value greater than 0.4. Some of the items, although supporting the factors, were more suitable to different factors; for example, APB (ICT procurement should be informed by business needs) was found to be more supportive to the **Leadership** factor than the initially proposed **Alignment** factor. SKU (The ICT department must understand attributes of services that users value most) was also found to be more supporting of **Communication** than initially proposed **Knowledge.** SDO (Operating hours for the ICT department must be convenient to all its users) was found to be a more suitable explanation to **Service Systems** than the **Service Delivery** factor.

TIT (SASSA ICT department should utilize the latest technology in the market) was found to be a more suitable item supporting **Skills**, than initially proposed **Technology** and Innovation. SDI (The ICT department must show a sincere interest in solving users' problems) was also found to be supporting the **Knowledge** factor rather than the initially proposed **Service Delivery** factor. And lastly, AOS (Linkage between ICT operational plan and SASSA strategic plan) supported the **Technology and Innovation** factor rather than the proposed **Alignment** factor.

In conclusion, using the survey questionnaire to collect the data, and applying a factor analysis, it was confirmed that of the eight proposed factors, the following six factors were empirically concluded to be the factors likely to affect ICT user satisfaction in the public sector in South Africa.

- **Leadership** Support
- **Communication** between ICT and User Community
- Shared **Knowledge** between ICT and Line Managers
- Quality Of **Service Systems**
- Interpersonal and Organizational **Skills**
- **Technology and Innovation**

However, the following factors were dropped as factors affecting user satisfaction after a Varimax rotation, either because they had low factor loading or their items were more likely to support other factors more than the prescribed.

- **Alignment**
- ICT Department Ability to **Deliver Services**

In order to fully conclude on these factors, we need to reflect back on the literature review in Chapter 2.

5.6. Propositions versus findings

5.6.1. Propositions that are fully supported

These are the propositions whose factors were fully supported by their items.

5.6.1.1. Leadership Support

The proposition (P8) states that "***The more ICT leadership shows support for customer/user orientation, the greater the levels of satisfaction***".

Customer satisfaction in any organization is the responsibility of top management. Kennedy *et al*. (2003) posit that only the CEO can take responsibility for defining customer and market orientation as the driving

forces. Transformation to a customer orientation is distinctive in that senior leaders must articulate organizational aims in terms that are harmonious with customer satisfaction drivers and their behaviour must be consistent with these (Nkae, 2007). From the results of the factor analysis, items related to the Leadership factor had a strong factor loading. The results indicated that LSC and LSV are valid measures of the Leadership factor and most likely to affect ICT user satisfaction. ***Therefore P8 is fully supported.***

5.6.1.2. Communication between ICT and User Community

The proposition (P1) stated that "***The greater the communication between the ICT department and the User Community, the better the levels of satisfaction***".

Factor analysis revealed that all items related to the factor had a strong factor loading. The results also indicate that the items CRM and CSD are valid measures of the communication factor. This finding corresponds with the study of Johnson and Lederer (2003), that frequent communication is important, and helps ICT personnel to determine how ICT can be used to support business functions. This suggests that regular meetings between ICT users and SASSA staff are vital for user satisfaction. It also validates frequent communication between ICT and users and ICT service desks. Thus it can safely be suggested that the proposed factor of communication is a valid factor and likely to affect ICT user satisfaction. ***Therefore P1 is fully supported.***

5.6.1.3. Quality of Service Systems

The proposition (P4) states that: "***The greater the quality of service systems and feedback mechanism, the greater the levels of satisfaction"****.*

The results indicate that both items are valid measures of Quality of Service Systems. The factor loadings of both are high, i.e. SSC = 0.812 and SSS = 0.795, which, when referring to the survey question, indicates

that the ICT department should continuously collect and analyze data to observe any changes in SASSA's business service priorities. Furthermore, the ICT department should regularly conduct surveys to measure user satisfaction. It can therefore be concluded that the proposed Quality of Service systems is a factor that is likely to affect ICT user satisfaction. ***Therefore (P4) is fully supported***

5.6.1.4. Interpersonal and Organizational Skills

The proposition (P5) states that: "***The better the interpersonal and organizational skills of ICT staff, the higher the levels of satisfaction"***.

In the literature, Bassellier and Benbasat (2004), posit that as ICT professionals are often assigned to projects involving different functional areas of the organization, it is important to develop a broad professional competence framework, not one designed for a specific set of tasks. In that sense, competence is considered here as non-routine, and embodies the ability to cope with complex and changing environments. It is not necessarily directly linked to a specific task but relates to the ability to transfer knowledge across tasks. The statement can be equated with the results from the factor analysis which suggest that: (1) ICT staff should be trained on SASSA business and its process (IOS); and (2) ICT staff should be trained on SASSA business and its process (IOT). In both the above items, the factor loadings were very high at 0.655 and 0.780 respectively. It can therefore be concluded that Interpersonal and organizational skill is a factor that is likely to affect ICT user satisfaction. ***Therefore P5 is fully supported.***

5.6.2. Propositions Partially Supported

These are the propositions whose factors were supported by at least one item with a higher loading.

5.6.2.1. Shared Knowledge between ICT and Line Managers

The proposition (P2) states that***: Shared knowledge between information systems groups and their line customers will have a positive impact on the levels of satisfaction****.*

Understanding client business objectives places any support unit in a good position. The ICT department has to be in a position of understanding the customer's needs beyond those that the customer verbalizes (Nkae, 2007). Nelson and Cooprider (1996) also argues that ICT departments must understand what customers value the most and how the ICT department can help them realize that which they value. The ICT group's ability to effectively work with functional (business) groups can be a major factor in ICT performance. A primary responsibility of ICT groups is to deliver information technology based on the needs of the organization (Nelson and Cooprider, 1996). Referring to the results of the factor analysis, it indicates that the factor "Knowledge" was supported by the following items: (1) SKP (Operating hours for ICT department must be convenient to all its users); and (2) SDI (ICT department must show a sincere interest in solving user's problems). SDI is an item that was initially intended to explain and support the factor Service Delivery. It can therefore be concluded that, although having scored high loading, it is not a reliable item to support the factor Knowledge, although it may be concluded that the factor Knowledge is still likely to affect ICT user satisfaction. ***Therefore P2 is partially supported.***

5.6.2.2. Technology and Innovation

The proposition (P6) states that: ***The more innovative and adaptive the ICT department is, the better the levels of satisfaction.***

In order for the ICT department to contribute to organizational effectiveness, efficiency, competitiveness and financial performance, this finding suggests that the ICT department should innovate, which can be done through encouraging users to capitalise on new technologies, encouraging the introduction of new technologies into the organization and

continuously investigating ways to create business value (Nkae, 2007). The results of the factor analysis depicts that the factor "Technology" was supported by the items TIR (ICT department should have a dedicated ICT researcher) and AOS (Linkage between ICT operational plan and SASSA's strategic plan). The factor loadings were TIR = 0.833 and AOS = 0.684. The researcher acknowledges that the item AOS has limited significance for Technology and Innovation. However, it may be concluded that notwithstanding its limitations, the factor will likely have an influence on user satisfaction. ***Therefore P6 is partially supported.***

5.6.3. Propositions that are not supported

These are the propositions that are supported by factors that were eliminated by factor analysis after Varimax rotation.

5.6.3.1. Service Delivery

The proposition (P3) states that: ***The greater the ability of the ICT department to deliver service, the greater the levels of satisfaction.*** Literature review indicated earlier on that the increasing complexity of technology and of products requires a corresponding increase in awareness of customer requirements and how humans interact with systems (Smart and Whiting, 2001). At the heart of customer orientation is the focus on the customer and having the right mechanisms in place to meet customer requirements (Rockart *et al.,* 1996). Although the researcher agrees with the theory, the results of the factor analysis revealed that both items of the factor Service Delivery that support the proposition were found to be unreliable measures of the factor. SDI (ICT department must show a sincere interest in solving users' problems) was found to be more supporting to the Knowledge factor with the factor loading of 0.734 and SDO (Operating hours for ICT department must be convenient to all its users) was also found to be supporting the Quality of Service System factor with a factor loading of 0.706. The *a priori* decision

rule specified that an item will not be retained unless its loading is greater than 0.6 on at least one factor (Hair *et al*., 2006); items that cross-loaded highly onto more than one factor would also be eliminated. ***Therefore P3 is not supported.***

5.6.3.2. Alignment

The proposition (P7) states that: ***The better the alignment between the ICT business plan and the business strategy, the better the levels of satisfaction.***

Rockart *et al*. (1996) posit that the first imperative is to align ICT strategy with the organization's business strategy. To ensure that investments in ICT are, in fact, targeted at strategic priorities, ICT management must be knowledgeable about senior management's strategic and tactical thinking. To test the factor “Alignment”, the two items AOS (Linkage between ICT operational plan and SASSA strategic plan) and APB (ICT procurement should be informed by business needs) were used. Unfortunately, both items were found to be supporting different factors, which indicate that, in line with the survey carried out, they are not reliable measures of the Alignment factor. AOS was found to be strongly supporting the Technology factor, with a factor loading of 0.684; and APB was found to be supporting the Leadership factor with a strong factor loading of 0.801. It can, in this case, be concluded that Alignment does not really affect ICT user satisfaction. ***Therefore (P7) is not supported.***

5.7. Summary of results

This chapter presented the results of this empirical study. The following table is the summary of the results.

Table 15: Summary of results

Proposition	ICT User Satisfaction
P1 - The greater the communication between the ICT department and the User Community, the better the levels of satisfaction	**Supported**
P2 - Shared knowledge between information systems groups and their line customers will have a positive impact on the levels of satisfaction	**Supported**
P3 - The greater the ability of the ICT department to deliver service, the greater the levels of satisfaction	**Not Supported**
P4 - The greater the quality of service systems and feedback mechanism, the greater the levels of satisfaction	**Supported**
P5 - The better the interpersonal and organizational skills of ICT staff, the higher the levels of satisfaction	**Supported**
P6 - The more innovative and adaptive the ICT department is, the better the levels of satisfaction	**Supported**
P7 - The better the alignment between ICT business plan and business strategy, the better the levels of satisfaction	**Not Supported**
P8 - The more ICT leadership shows support for customer/user orientation, the greater the levels of satisfaction	**Supported**

5.8. Batho Pele principle versus ICT User satisfaction factors

As mentioned in our problem statement, with the exploration of the factors that affect ICT user satisfaction, the researcher hopes to relate the findings to Batho Pele principles covered in the literature in Chapter 2.

5.8.1. Communication between ICT and User Community

This factor is supported by three Batho Pele principles:

Consultation, which is about consulting users of the service, conducting surveys, interviews, and stakeholder engagement.

Increasing access, which is about providing access to previously disadvantaged communities in the form of multi-purpose community centres and call centres. Access to information is also critical for developmental purposes.

Provision of information, which is about making available information about services at the point of delivery, for users who are far from the point of delivery.

5.8.2. Leadership Support

This factor is supported by one principle that was adopted by the KwaZulu-Natal provincial government.

The **Leadership and Strategic Direction principle** encourage leaders to create an atmosphere which allows for creativity. They should also make sure that goals are set and achieved.

5.8.3. Shared Knowledge

This factor is also supported by one principle:

Openness and transparency: A key aspect of openness and transparency is that the public should know more about the way national, provincial and local government institutions operate, how well they utilise the resources they consume, and who is in charge.

5.8.4. Service Delivery

Although this factor was dropped as a possible factor that affects ICT user satisfaction, Batho Pele principles support it with two principles:

Ensuring courtesy is about empathizing with the citizens of the community to whom the service provider is delivering the service.

Customer impact is about adhering to the principle of Batho Pele which will help in improving service delivery. This will in turn have a positive impact on customers.

5.8.5. Service systems

This factor was supported by the following Batho Pele principles:

Setting service standards is about benchmarking and creating products and services of unquestionable quality.

Ensuring courtesy is about empathizing with the citizens of the community to whom the service provider is delivering the service.

5.8.6. Skills

The Skills factor was supported by the following Batho Pele principle:

Redress emphasises a need to identify quickly and accurately when services are falling below the promised standard and to have procedures in place to remedy the situation. The fact that underpins this principle is that one has to have exceptional skills to be able to quickly mitigate against a failing service.

5.8.7. Technology and innovation

The Technology and Innovation factor is also supported by the following Batho Pele principles:

Encouraging Innovation and rewarding Excellence is about using creative ways of achieving goals and rewarding staff where appropriate.

Value for money refers to the idea of using minimum resources to achieve maximum and high quality output.

5.8.8. Alignment

Although this factor was dropped as a possible factor that affects ICT user satisfaction, Batho Pele principles support it.

Leadership and Strategic Direction: Leaders should create an atmosphere which allows for creativity. They should also make sure that goals are set and achieved.

Table 16: Summary of Batho Pele principles versus ICT User satisfaction

ICT User Satisfaction factors	Batho Pele principles
Leadership	Leadership and strategic direction
Communication	Consultation, Provision of information Increasing access
Service Systems	Setting service standards Ensuring courtesy
Skills	Redress
Knowledge	Openness and transparency
Technology and Innovation	Value for money Encouraging innovation and rewarding excellence
Service delivery	Customer impact Ensuring courtesy
Alignment	Leadership and strategic direction

5.9. Conclusion

In this chapter, through data analysis, it was revealed that Communication, Leadership Support, Quality of Service Systems and Skills (Interpersonal and Organizational) are the **most important** factors that affect ICT user satisfaction in the public service in South Africa.

Analysis also showed that Shared Knowledge and Technology are important and to a limited extent have influence on ICT User Satisfaction in the public sector. However, analysis has also indicated that in the context of this study, Alignment of Strategy and Business Plan, and Ability

to deliver services are not necessarily having an effect on ICT user satisfaction in the public sector.

Factors affecting ICT user satisfaction were then compared with Batho Pele principles. The researcher in this case also included the factors that were dropped, in order to highlight their relevance to Batho Pele principles. The conclusion and recommendations of the research are presented in the next chapter.

CHAPTER 6
CONCLUSION AND RECOMMENDATIONS

6.1. Introduction

The purpose of this chapter is to draw conclusions and make recommendations on the basis of the findings in Chapter 5. Following this, a description is provided on how the results impact the theory and what insights were obtained that can push the theory forward. Finally, a summary of the chapter is provided.

6.2. Conclusions of the study

This study aimed to explore the concept of ICT user satisfaction in the context of the public sector in South Africa. Literature cited user satisfaction as a key determinant of organizational performance (Kennedy *et al*., 2003).

The following user satisfaction factors were explored with reference to the works of Gluck (1996), Goodhue *et al*. (1998), Ives *et al*. (1983), Rockart *et al*. (1996), Pearson & Bailey (1980), Pitt *et al*. (1995) and Nkae (2007).

- Leadership
- Communication
- Knowledge
- Service Systems
- Service Delivery
- Skills
- Technology
- Alignment.

Most of the factors were empirically confirmed, however Alignment and Service Delivery were dropped during factor analysis because both of them had low loadings on the items measuring these two dimensions on any factor. The other reason was that their items were cross-loading to other factors. The final analysis confirmed that factors that affect user satisfaction in public sector in South Africa were the following:

- Leadership
- Communication
- Knowledge
- Service Systems
- Skills
- Technology.

Confirmation of the above factors as likely to affect ICT user satisfaction in the public sector led to support for the following propositions.

P1: The greater the communication between the ICT department and user community, the better the levels of satisfaction.

P2: Shared knowledge between information systems groups and their line customers will have a positive impact on the levels of satisfaction.

P4: The greater the quality of service systems and feedback mechanisms, the greater levels of satisfaction.

P5: The better the interpersonal and organizational skills of ICT staff, the higher the level of satisfaction.

P6: The more innovative and adaptive the ICT department is, the better the levels of user satisfaction.

P8. The more ICT leadership shows support for customer/user orientation, the greater the levels of satisfaction.

The following propositions were dropped:

P3. The greater the ability of the ICT department to deliver service, the greater the levels of satisfaction.

P7: The better the alignment between the ICT business plan and business strategy, the greater the levels of satisfaction.

Several practical implications can be derived from the key findings of this study. The study has empirically established the factors that affect ICT user satisfaction in the public sector in South Africa. From a practitioner's perspective, it poses a very serious challenge that there is a need to attend to these factors as they contribute to the poor performance of ICT departments. Nelson and Cooprider (1996), also argues that the ICT department must understand what customers value the most and how the ICT department can help them realize that which they value.

6.3. Recommendations

Making reference to the supported propositions, and the items supporting the factors affecting ICT user satisfaction, the researcher makes the following recommendations.

6.3.1. Communication

ICT departments in the public sector should hold frequent meetings with ICT users. This gives ICT staff an opportunity to interact with ICT users and better understand their needs.

There should be open and robust communication between the ICT service desk and ICT users. This provides an opportunity for problems to be resolved in the a quickest way possible (First line support).

6.3.2. Leadership Support

ICT Management in government departments must share a department-wide vision with ICT staff. In order to be in the best position to support business, one should understand what the core business entails (Rockart *et al*., 1996).

ICT Management in government departments must regularly articulate to their staff (ICT) the values that underpin good customer care (satisfaction).

6.3.3. Skills

ICT staff must be trained on interpersonal and organizational skills Rockart *et al*. (1996) posit that by the nature of ICT work, over and above their specialized skills, ICT staff that are in contact with the users must possess knowledge about the organization which they serve and the appropriate interpersonal skills to interact with the organization. This suggests that ICT staff should be trained on core business and its process.

6.3.4. Technology and Innovation

ICT departments in government should always be conversant with the latest technology in the market. They should be innovative and recommend latest technology to their different departments.

6.3.5. Service Systems

ICT departments in government must regularly conduct surveys to measure user satisfaction. This is one way of determining the quality of the services provided by ICT departments. The results should be analyzed with the aim of closing the gaps that have been identified.

ICT departments should continuously collect and analyze data to observe any changes in government's service delivery priorities.

6.3.6. Knowledge

ICT departments in government must understand the attributes of the service that the users value most. As mentioned before, Nelson and Cooprider (1996), also argues that the ICT department must understand what customers value the most and how the ICT department can help them realize that which they value. The ICT group's ability to effectively work with functional (business) groups can be a major factor in improving ICT performance.

Furthermore, the operating hours for ICT departments must be convenient for all users.

6.4. Recommendations for further study

The respondents of this study covered all levels of offices in SASSA and this suggests that the results of this study should prove robust in other contexts. However, the predictive value of the results is not assured and further research in other contexts such as countries and other industries would add value to the discourse.

The study intended to explore the factors that affect ICT user satisfaction in the public sector in South Africa. The study started by defining user satisfaction and possible factors that are likely to influence it. The study drew on previously defined factors in the literature, such as Gluck (1996), Goodhue *et al*. (1998), Ives *et al*. (1983), Rockart *et al*. (1996), Pearson & Bailey (1980), Pitt *et al*. (1995) and Nkae (2007). In the study, two factors were dropped as not being significant in relation to ICT user satisfaction in the public sector. The conclusion was drawn from the results of the statistical analysis. It is the view of the researcher that the measurement of the factors warrants further examination. Further research should properly define these factors and determine the appropriate tools to measure them so that they can be accurately interpreted in the context of ICT user satisfaction. This interpretation may correctly have been the reason for them to be dropped in this context.

6.5. Conclusion

This survey-based empirical study conducted in different levels of offices in SASSA Gauteng concluded that there are six factors likely to affect ICT user satisfaction in the public sector in South Africa. All the principles of Batho Pele are in one way or the other linked to these factors.

Adhering to the Batho Pele principles will in all likelihood have an effect on these factors and thus on ICT performance. Improving the quality of support provided to the user community will ultimately have a positive influence on their satisfaction regarding service, and contribute to improved productivity and service delivery

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6. APPENDIX A

ICT User Satisfaction Survey (Gauteng Region)

The information provided by respondents will solely be used for research purpose, results of which are going to be utilised to improve overall ICT service delivery in SASSA. No other external party shall have access to this information without the consent of SASSA **Chief Information Officer and the Gauteng Regional Executive Manager.**

Double click on the most applicable box to choose your response.

1. In what business unit do you function?

Grant Admin		Finance		HR		SCM	
Regional Office		District Office		Local Office		Other	

2. What is your job responsibility?

Manager		Supervisor		Operator		Other	

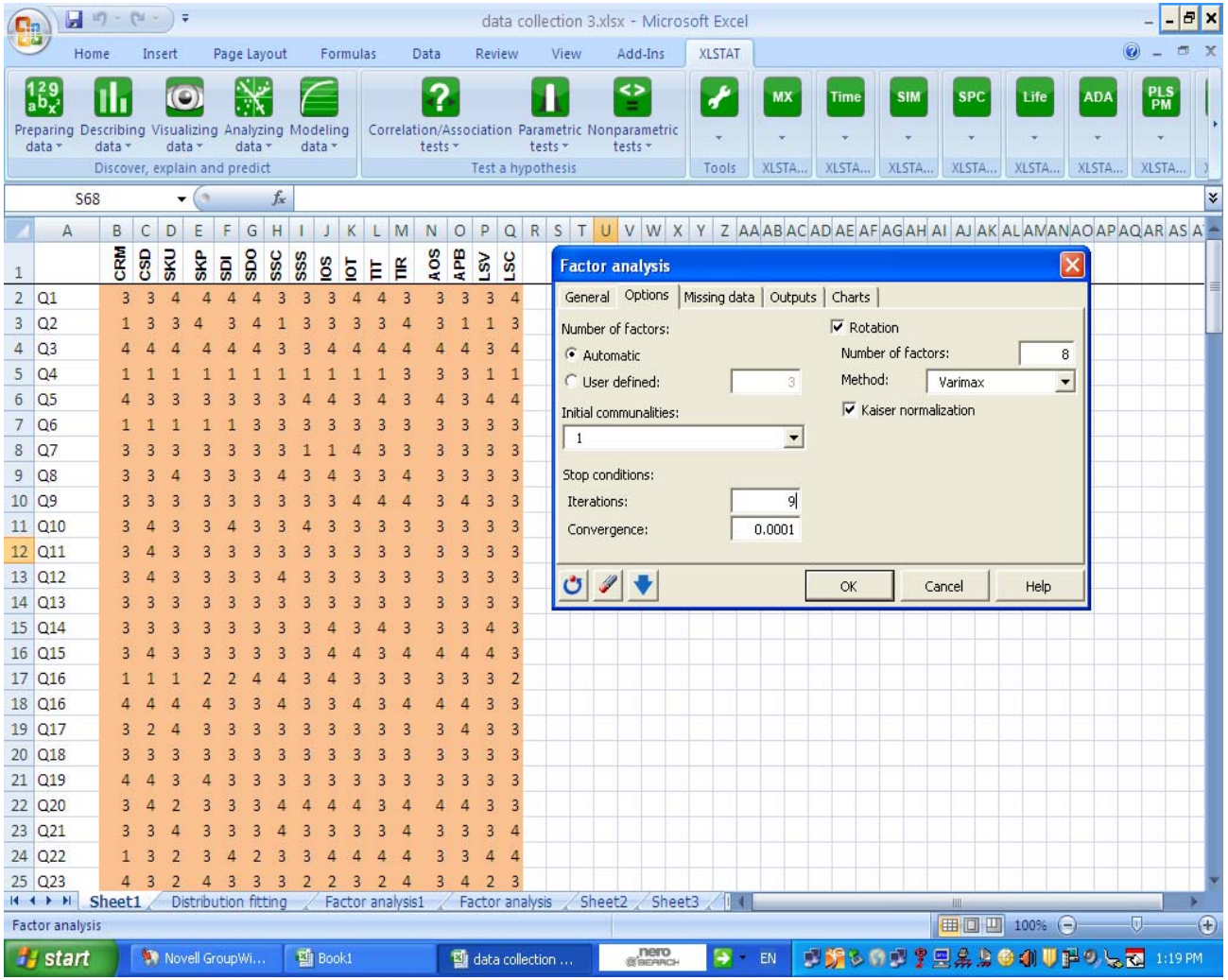
PLEASE INDICATE HOW **IMPORTANT** ARE THE FOLLOWING FACTORS TO YOU	Very much	Somewhat	Undecided	Not really	Not at all
COMMUNICATION BETWEEN ICT AND USER COMMUNITY					
1.Regular meetings between ICT department and SASSA staff					
2 Frequent communication between ICT users and ICT Service desk					
SHARED KNOWLEDGE BETWEEN ICT AND LINE MANAGERS					
3. The ICT department must understand attributes of services that users value most.					
4. ICT planning must be driven by business needs					

ICT DEPARTMENT ABILITY TO DELIVER SERVICES					
5. The ICT department must show a sincere interest in solving users' problems.					
6. Operating hours for ICT department must be convenient to all its users.					
QUALITY OF SERVICE SYSTEMS					
7. The ICT department should continuously collect, analyze data to observe any changes in SASSA's business service priorities.					
8. The ICT department should regularly conduct surveys to measure user satisfaction					
INTERPERSONAL AND ORGANIZATIONAL SKILLS					
9. ICT staff should be trained on interpersonal and organizational skills					
10. ICT staff should be trained on SASSA business and its processes					
TECHNOLOGY AND INNOVATION					
11. The SASSA ICT department should utilize the latest technology in the market.					
12. ICT department should have a dedicated ICT researcher.					
ALIGNMENT					
13. Linkage between ICT Operational plan and SASSA strategic plan					
14. ICT procurement should be informed by business needs					
LEADERSHIP SUPPORT					
15. The Chief Information Officer/ICT Manager must share a companywide vision with ICT staff.					

16. Senior ICT managers must regularly articulate to ICT staff customer oriented values.						
Very much	Somewhat	Undecided	Not really		Not at all	
5	4	3	2		1	

Thank you for taking part in this survey. The results will be made available to you on request in case you are interested.

Any enquiries please contact <u>Mr. Reginald Ramaboea</u> on 011 2418414


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Parametric tests
Nonparametric tests
Test a hypothesis
MX
Time
SIM
SPC
Life
ADA
PLS PM
Factor analysis
General
Options
Missing data
Outputs
Charts
Number of factors:
Automatic
User defined:
Initial communalities:
Stop conditions:
Iterations:
Convergence:
Rotation
Number of factors:
Method:
Varimax
Kaiser normalization
OK
Cancel
Help
Sheet1
Distribution fitting
Factor analysis1
Factor analysis
Sheet2
Sheet3
Factor analysis
100%
start
Novell GroupWi...
Book1
data collection ...
EN
1:19 PM

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