

UNIVERSITY OF KWAZULU-NATAL

**ENTERPRISE RESOURCE PLANNING (ERP) SYSTEMS SUCCESS,
EVALUATION OF USER'S PERCEPTIONS AND SATISFACTION
ON EXPECTED BENEFITS.**

By

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Abstract

Realising ERP system benefits requires clear understanding of the factors that influence the actual benefits derived from using it. Therefore, the purpose of the study was to identify and investigate how the expectations of general benefits that ERP users, have influences the actual benefits derived as well as user satisfaction. The investigation was conducted in a manufacturing company in South Africa that had an in-house ERP system adopted more than 10 years ago. The study was quantitative in nature and adopted a census method of data collection. Data was collected through a questionnaire tool and quantitative techniques were used to analyse the data. The Delone and Maclean Information Systems model was applied to guide the study in the collection of data and analysis. A correlation between ERP system benefits derived and user satisfaction was identified through the Spearman's rank correlation technique which validated and in line with the Delone and Maclean Information Systems success model. Most of the respondents were found to have positive expectations regarding the general benefits that an ERP system should offer. Some users had high expectations while others had low expectations. Users with high expectations were more dissatisfied and not benefiting from the ERP system as compared to the other group with low expectations. Users with more systems experience did not find the ERP system too challenging as compared to the users who had lesser experience. Users with high expectations experienced higher benefits compared to those with low expectations. However, a very low number of users were not experiencing benefits among the group with low expectations compared to some of the individuals in the group with high expectations. An investigation of this nature has not been found in the literature. The results of the study can be used by business organisations to select employees with certain set of expectations. Business organisation can also apply the study results when selecting ERP system to purchase.

Table of contents

Declaration.....	i
Acknowledgements.....	iii
Abstract.....	iv
List of Figures.....	x
List of tables.....	xi
List of abbreviations.....	xii
Chapter 1 Introduction.....	13
1.1 Introduction.....	13
1.2 Research problem and background.....	13
1.3 Motivation for the study.....	15
1.4 Research questions.....	15
1.5 Research objectives.....	15
1.6 Focus of the study.....	16
1.7 Research method.....	16
1.8 Analysis.....	16
1.9 Structure of the study.....	16
1.9.1 Chapter 1: Introduction.....	17
1.9.2 Chapter 2: Literature review.....	17
1.9.3 Chapter 3: Research methodology.....	17
1.9.4 Chapter 4: Analysis and discussion.....	17
1.9.5 Chapter 5: Key findings from discussion and application of the model.....	18
1.9.6 Chapter 6: Conclusion and recommendations.....	18
Chapter 2 Literature review.....	19
2.1 Introduction.....	19
2.2 Overview and history of ERP systems.....	19
2.3 ERP system benefits.....	20

2.3.1	Benefits classification	20
2.3.2	Attainment of benefits	21
2.3.4	Departmental integration	22
2.3.5	Adoption of ERP based on benefits and success factors	23
2.3.6	Concerns over ERP implementation.....	25
2.4	ERP system challenges	26
2.5	ERP system satisfaction.....	29
2.6	ERP system user expectations	33
2.7	Conceptual framework.....	35
2.8	Summary	36
Chapter 3 Research methodology.....		37
3.1	Introduction.....	37
3.2	Research philosophy	37
3.2.1	Assumptions	37
3.2.2	Paradigm.....	38
3.2.3	Philosophy selection.....	39
3.3	Approach to theory development.....	39
3.4	Research design	40
3.4.1	Methodological choice	40
3.4.2	Quantitative	40
3.4.3	Research design purpose	40
3.4.4	Data collection strategy	41
3.4.5	Timeline horizon	41
3.4.6	Ethics	42
3.4.7	Quality	42
3.4.8	Researcher's role	45
3.5	Data collection.....	45

3.6	Data analysis	48
3.7	Chapter summary	49
Chapter 4 Analysis and discussion		51
4.1	Introduction	51
4.2	Reliability analysis	51
4.3	Data collection summary	51
4.4	Demographics data analysis	52
4.4.1	Age	53
4.4.2	Departmental Representation	53
4.4.3	Gender	54
4.4.4	Qualifications	55
4.4.5	Employee Level	55
4.5	Descriptive data analysis of responses	56
4.5.1	Expected general benefits of using ERP systems	57
4.5.2	Challenges experienced when using ERP system	58
4.5.3	Derived benefits and Expected general benefits	61
4.5.4	User satisfaction and Expected general benefits	65
4.6	Exploratory factor analysis	68
4.7	Chi-square test	74
4.7.1	General expected benefits and user satisfaction	74
4.7.2	General expected benefits and actual benefits derived	75
4.8	Spearman's Rank Correlation Coefficient	76
4.9	Chapter summary	77
Chapter 5 Key findings from discussion and application of the model		78
5.1	Introduction	78
5.2	Key findings	78
5.3	Application of the model	79

5.3.1	Information quality	79
5.3.2	System quality	80
5.3.3	Service quality	81
5.4	Summary	82
Chapter 6 Conclusion and recommendations		83
6.1	Introduction.....	83
6.2	Problem statement, Research question and objectives of the study	83
6.2.1	Problem statement overview	83
6.2.2	Research Questions	83
6.2.3	Objectives	84
6.3	Has the questions been answered.....	84
6.3.1	What are the perceptions of users towards expected general system benefits of ERP? 84	
6.3.2	What are challenges experienced in ERP adoption by users?.....	84
6.3.3	What were the actual benefits derived from the ERP system?.....	85
6.3.4	How does general expected benefits of ERP system influence user satisfaction?.....	85
6.3.5	What is the relationship between the general expected benefits of ERP system and actual benefits derived?.....	85
6.4	Did the study fulfill the intended objectives	85
6.4.1	To determine the perceptions of users towards general system benefits of ERP 85	
6.4.2	To identify the challenges experience by users in ERP adoption.....	86
6.4.3	To establish actual benefits derived from ERP system	86
6.4.4	To investigate the relationship between general expected benefits of ERP system and user satisfaction	86
6.4.5	To ascertain if the relationship between general expected benefits of ERP and ERP actual benefits derived exists	86

6.5	Findings in relation to the model	86
6.6	Recommendations.....	86
6.7	Limitations	87
6.8	Direction for future researchers	88
6.9	Conclusion	88
	References	90
	Appendix 1 Letter of informed consent.....	95
	Appendix 2 Research questionnaire	96
	Appendix 3 Ehtical clearance	101
	Appendix 4 Turnitin report summary	102

List of Figures

Figure 2. 7: Conceptual framework developed from DeLone and McLean IS success model	36
Figure 4. 1 : The number of years each participant has worked for the company	52
Figure 4. 2: Age profile of respondent	53
Figure 4. 3: Work departments of respondents.....	54
Figure 4. 4: Gender profile of respondents.....	54
Figure 4. 5: Education profile for respondents	55
Figure 4. 6: Work level profile for respondents	56
Figure 4. 7: General expected benefits of using an ERP system.....	57
Figure 4. 8: Challenges of using ERP system	59
Figure 4. 9: Actual benefits of using ERP system.....	61
Figure 4. 10: General expectations perceived and actual benefits derived	64
Figure 4. 11: User satisfaction of using ERP system	65
Figure 4. 12: General expectations and user satisfaction	67
Figure 4. 13: Scree Plot	70
Figure 5. 1: Information quality at BATA.....	80
Figure 5. 2: System quality at BATA	81
Figure 5. 3: Service quality at BATA	82

List of tables

Table 4. 1: Cronbach's alpha.....	51
Table 4. 2: Data collection summary statistics	52
Table 4. 3: KMO and Bartlett's Test.....	69
Table 4. 4: Total Variance Explained.....	70
Table 4. 5: Communalities.....	71
Table 4. 6: Factor Matrix.....	73
Table 4. 7: Rotated Factor Matrix	74
Table 4. 8: Chi-Square Tests between general expected benefits and user satisfaction.....	75
Table 4. 9: Chi-Square Tests between general expected benefits and actual benefits	75
Table 4. 10: Correlations Matrix	76

List of abbreviations

Abbreviations	Meaning
BOMP	Bill of Material Processor
CSF	Critical Success Factors
EUCS	End User's Computing Satisfaction
ERP	Enterprise Resource Planning
MRP	Material Requirement Planning
MRP II	Manufacturing Resource Planning
IS	Information System
IT	Information Technology
ROP	Reorder Point Systems
TSI	Transaction Specific Investment

Chapter 1

Introduction

1.1 Introduction

Enterprise Resource planning has been shown to increase business productivity and efficiency. However, as with any system, it is important to ascertain if expectation do correlate with actual benefits derived. This study examines this concept in a manufacturing industry. This chapter introduces the study and defines the research problem articulating the need for this research. The motivation of the study is outlined followed by the research questions and objectives. The focus of the study is further explained and a brief overview of the data collection and analysis methods employed. Lastly the structure of the study is outlined per chapter.

1.2 Research problem and background

The Enterprise Resource Planning (ERP) system is a computer based tool that is capable of unifying all business processes and structure information into an advance data structure entity (Abd Elmonem et al., 2016, Kadir et al., 2015b). Therefore, an ERP system is a method of systematising the storage and use of company relevant data through computerised elements. Enterprise Resource Planning systems are expected to be applied as planning systems; however, many researchers believe that these are only for automating enterprise systems (Badewi et al., 2017). As a result, whilst ERP systems can be effective planning tools; however, they could also be used for other purposes which include the analysis of data that can facilitate daily decision-making to avoid negative business outcomes or take advantage of daily opportunities that can present themselves dynamically.

The contemporary business environment is overwhelmed by large scales of information complexity (Al-Jabri and Roztocki, 2015). Complex information could entail guidance of how businesses can avoid undesirable outcomes or take advantage of opportunities. This includes the data integration of every activity that occurs inside and outside of the business, from inter alia, manufacturing, distribution, marketing, sales and customer service (Kanellou and Spathis, 2013). In the light of this reality, businesses are required to store and arrange the data as so it can be strategically used to sustain competitiveness in

their respective markets (Stratman, 2007, Teittinen et al., 2013). Data that is strategically systematised can be used to predict possible market projections, and therefore can assist businesses to strategically align themselves accordingly to remain competitive.

Exponential growth of ERP systems use is as a result of the desired business benefits that are generally expected from these software systems due to their growing popularity (Badewi and Shehab, 2016, Esteves, 2009, Al-Jabri and Roztock, 2015, Al-Jabri, 2015, Kadir et al., 2015b, Teittinen et al., 2013). This popularity of ERP systems is driven by its technological capability that enables businesses to sustain high performance through enhancing professionalism, quality, good service delivery and competitive advantage (Kanellou and Spathis, 2013, Al-Jabri, 2015, Kadir et al., 2015). The need for sustainability and competitive advantage has played a role in many businesses desiring the adoption of ERP systems (Al-Jabri, 2015). The desire for ERP benefits by businesses in general is, therefore, expressed and as a result of the motivation to study the concepts and mechanisms entailed in benefiting from ERP systems.

The extent to which a business will benefit from the adoption of an ERP system is highly dependent on whether users are satisfied with the system (Al-Jabri and Roztock, 2015, Delone and McLean, 2003); therefore, user satisfaction is one of the concepts that can allow understanding of ERP system benefits. The collection of expectations held by the user concerning the system they use, will affect their satisfaction (Venkataiah, 2012). Whilst user satisfaction influences usage and actual ERP benefits derived (Al-Jabri and Roztock, 2015, Delone and McLean, 2003). This points out to the possibility of user expectations affecting user satisfaction, and therefore the benefits derived from ERP systems. The importance of studying ERP benefits is clear based on the literature outlined. The need to study user satisfaction and expectation is also clearly revealed by the impact these elements have on ERP benefits. Substantial research that has been done on ERP system success places emphasis on the actual benefits obtained by user from the ERP system, but neglecting the attitude of the user toward the benefits of using ERP systems in general. The study will place much effort on the user perception on the general expected system benefits of ERP and the impact on the actual benefits the business obtains in a manufacturing setting within a South African context.

1.3 Motivation for the study

The study aims to assist managers understand whether user perceptions towards expected general system benefits of an ERP system, affects business actual benefits obtained in a manufacturing industry. The study sheds light on answering what perceptions users have in general and how negative or positive attitude toward these perception affect ERP actual benefits. This knowledge can help managers decide whether to release business resources on standardising and monitoring user perceptions on ERP general success factors.

1.4 Research questions

In light of the research problem the following research questions are derived:

- a) What are the perceptions of users towards expected general system benefits of ERP?
- b) What are challenges experienced in ERP adoption by users?
- c) What were the actual benefits derived from the ERP system?
- d) How does general expected benefits of ERP system influence user satisfaction?
- e) What is the relationship between the general expected benefits of ERP system and actual benefits derived?

1.5 Research objectives

As per the research questions and research problem the objectives of the study are as follows:

- a) To determine the perceptions of users towards general system benefits of ERP.
- b) To identify the challenges experience by users in ERP adoption.
- c) To establish actual benefits derived from ERP system.
- d) To investigate the relationship between general expected benefits of ERP system and user satisfaction.
- e) To ascertain if the relationship between general expected benefits of ERP and ERP actual benefits derived exists.

1.6 Focus of the study

The study focuses on the analysis of user perception on the expected general system benefits of an ERP system in a manufacturing industry at a shoe company called BATA. The benefits of using an ERP system contribute to why companies will adopt it. The success of adopting an ERP system is dependent on a number of different factors. One such known dominant factor is user satisfaction. Positive user satisfaction will increase benefits obtained from using an ERP system and vice versa. The success of adopting an ERP system is determined by the accumulation of actual benefits obtained. The general system benefits of adopting an ERP system and the actual benefits obtained on an implemented ERP system are differentiated. Therefore, the study will attempt to understand the perception of users on the general expected system benefits of ERP systems and analyse the relationship between the user perception, user satisfaction and benefits thereof.

1.7 Research method

The research was conducted in a manufacturing company by the name BATA that is located in South Africa. The company has 80 employees who are users of an ERP system. A quantitative approach will be followed and the data is going to be collected through an online questionnaire tool called Google forms.

1.8 Analysis

The research adopted a graphical and explanatory statistics for data analysis. Graphical data analysis was conducted through bar graphs and stacked bar graphs. However explanatory statistics data analysis was conducted through the chi-square test to detect if correlations exist and Spearman's rank correlation to investigate the strength of the relationships.

1.9 Structure of the study

The structure and the flow of the study are further outlined below:

1.9.1 Chapter 1: Introduction

The introduction make visible of the core elements that make up the research problem. It outlines the necessity for the ERP system and the role of user satisfaction, benefits of using the system and user expectation of the system. The chapter further present the stakeholders to whom the study will add value to. The uses for the results of the study are highlighted. Research questions and research objectives are presented and derived from the research problem and motivation for the study. The focus and the limitations of the study are also given and lastly the structure of the study is outlined.

1.9.2 Chapter 2: Literature review

The inspiration behind the adoption of ERP systems is expressed followed by the nature of benefits derivation in relation to challenges that are involved. Enterprise resource planning system benefits classification is explained and the most important benefits offered by it are emphasised. The models which have been developed to understand ERP system benefits are presented also the elements which are involved in derivation of benefits are further discussed. These include challenges, strategies, user satisfaction, and benefits realisation.

1.9.3 Chapter 3: Research methodology

The chapter describes the philosophical stance that underpinned the study including the paradigm for the study and the approach to theory that was taken in the study. The study design and axiological details are further outlined. The techniques and procedures for the reliability, validity, sampling, data collection and analysis are then explained in the chapter.

1.9.4 Chapter 4: Analysis and discussion

The analysis begins with the data collection summary followed by demographic details analysis through bar charts. The questionnaire is further analysed using the stack bar charts. The exploratory factor analysis and the Cronbach's alphas is used for validity and reliability of the scale. The relationship between expected general benefits, user satisfaction and actual benefits derived is investigated to the chi-square test and the Spearman's rank coefficient technique.

1.9.5 Chapter 5: Key findings from discussion and application of the model

The key findings are discussed and the analysis of data in application of the model is conducted through bar charts.

1.9.6 Chapter 6: Conclusion and recommendations

This chapter draws the study to a close and concludes the research. The problem statement, research questions and objectives are revisited to ascertain if the study catered for sufficiently. The findings are further analysed in construct with findings of the analysis and discussion in chapter 4. Lastly the recommendations, limitations, direction for future research and conclusion are presented.

Chapter 2

Literature review

2.1 Introduction

This chapter outlines the literature review of ERP system. A brief history followed by research done to understand ERP system benefits, challenges and user satisfaction is provided in this chapter.

2.2 Overview and history of ERP systems

It was before the arrival of computerised systems that manufacturing companies had employees who were individually allocated into roles with responsibilities that are now completely done by ERP systems (Rondeau and Litteral, 2001). The manufacturing companies are the main driving force that can be appreciated for ERP systems we have today. At the time of the 1960s, manufacturing processes were based on rapid prototyping as opposed to the end-of-use goods development process (Yang and Zhao, 2015). The introduction of ERP systems resulted into the processes that were once manual becoming completely electronically (Rondeau and Litteral, 2001).

Towards the end of the 1960s and in the early 1970s, manufacturing firms were dominated by the manual application of the reorder point systems (ROP) to maintain raw materials and stock levels (Grewal et al., 2015, Rondeau and Litteral, 2001). The bill of material processor (BOMP) was introduced in the early 1960s, this was a computerised system used to retrieve and maintain bill of materials (Ptak and Schragenheim, 2016). The BOMP was followed by the introduction of the Material Requirements Planning (MRP) system around mid-1960s. It enabled the computerisation of tracking the stock that was available, the stock that was going to be used and the stock that was to be ordered. The MRP systems was only able to answer the questions related to stock levels but for the first time it allowed for the knowledge of these in relation to time factors. This enabled manufacturing companies to reorder based on time factors as opposed to low stock levels replenishment methods.

During the mid-1970s the MRP system started to be replaced by a more advanced system, the Manufacturing Resource Planning (MRP II) system (Toomey, 1996). The MRP II

system was a computerised system that had the potential to increase customer satisfaction, manage waste and improve manufacturing through providing information that made resource planning easily possible. However, at this point the MRP II system was very challenging to implement, it required expensive technical equipment and highly skilled human resource (Ptak, 1991). Manufacturing firms had access to real-time manufacturing data, the manufacturing process was through the MRP II system now linked to the financial side of the business (Ptak and Schragenheim, 2016). Managers at this point, were for the first time able to access reports and make business decisions based on them.

In the early 1990s MRP II system evolved into a system that did not only provide service for the manufacturing companies but for all business organisations, it included all departments and the seamless integration of data between them (Ptak and Schragenheim, 2016). This was the ERP system which was now easy to install and less expensive and offered far greater benefits compared to the MRP II system. In 2002 ERP system became integrated with the world wide web (Hassan and A Jabar, 2013). This ERP system was now referred as extended ERP systems as it allowed organisations to integrate their data with external business modules. The businesses were able to interact with customers and third parties electronically.

2.3 ERP system benefits

The demand for ERP systems in the contemporary business environment is becoming high, as a result many companies are adopting ERP systems to attain the benefits derived thereof (Zhang et al., 2012, Teittinen et al., 2013). The ERP system benefits are one of the main reasons that companies invest in ERP systems; however, these benefits can be unattainable (Kadir et al., 2015b).

2.3.1 Benefits classification

The ability to make use of a newly implemented ERP system or to review the use of an existing one depends on the quality of organisational accumulated knowledge about the possible benefits that the ERP system can offer. A great number of research studies identify that ERP system benefits can be tangible and intangible (Slabbert et al., 2016, Soja and Paliwoda-Pękosz, 2013, Mirbagheri and Khajavi, 2013, Almahamid and Awsi, 2015). Tangible benefits refer to those that can be numerically defined, explained, and analysed. This makes it easier to discern or detect their presence or measure of impact within the

organisation (Slabbert et al., 2016). In alignment to this Slabbert et al. (2016) developed a comprehensive theoretical ERP benefits framework model. In the model they considered the 3 holistic dimensions as per the study by Davenport et al. (2004). The dimensions are as follows: integration, optimisation, and information.

A prevalent trait was noticeable in the literature, this was the application of five dimensions of ERP system benefits (Mirbagheri and Khajavi, 2013, Almahamid and Awsi, 2015, Kanellou and Spathis, 2013). The dimensions covered are those that relate to operations, management, strategy, IT infrastructure and the organisation. The literature had a huge number of benefits listed and categorized. Some of the operational benefits listed were the circle time reduction, customer service improvement and quality improvement (Mirbagheri and Khajavi, 2013). A few of the organisational benefits included were multiple ways of generating reports and seamless alignment between applications, better decisive response, and more useful reports (Kanellou and Spathis, 2013). Among strategic benefits, were, growth, innovation and differentiation identified by Almahamid and Awsi (2015). The managerial benefits were better resource management, better decision making, and better performance control whilst the IT infrastructure benefits were increased business flexibility, IT cost reduction, and increased IT infrastructure capability (Slabbert et al., 2016).

2.3.2 Attainment of benefits

In their research, Zhang et al. (2012) clarified that the roadmap toward the attainment of maximum ERP system benefits is not straight forward. It demands major operational changes and a significant amount of time and resources before the business can actually attain the benefits. These claims demonstrate the complexity of ERP system adoption and the need for the level of knowledge and skill required for the adoption. Without proper attention given to these barriers, business organisations should, therefore, not expect ERP systems to be beneficial for them but rather they could face even more problems as a result of the adoption. Due to the many challenges involved in the adoption of ERP systems and the attainment of benefits they offer, it is a clear necessity the need to study ERP system benefits (ElAbbassi and Chafik, 2014).

A lot of work has been done in the attempt to understand the attainment of ERP system benefits (Kanellou and Spathis, 2013, Teittinen et al., 2013, Kadir et al., 2015a, Almahamid and Awsi, 2015, Huang and Handfield, 2015a, Ranjan et al., 2017, Norton et

al., 2013). Some literature looked at the drivers of ERP system benefits and how they apply to different employee levels (Teittinen et al., 2013). Understanding ERP system drivers can assist business organisation by giving them some control over the ERP systems as they can be complex (May et al., 2013). Other researchers investigated ERP benefits towards strategic areas and functions of the business (Ranjan et al., 2017), while others associated ERP system benefits with resources, performance indicators, different business departments, different environments and critical success factors (Kanellou and Spathis, 2013, Almahamid and Awsi, 2015, Norton et al., 2013). Other research work investigated implementation stages where certain ERP system benefits can be expected and how they can be maximised (Norton et al., 2013).

2.3.4 Departmental integration

The advanced functionality of an ERP system to integrate almost every aspect that concerns each department in the company is an inspiration to companies desiring state of the art business process coordination (Teittinen et al., 2013). A company with integrated departmental structures and functions is expected to run harmoniously when compared to one that has scattered departmental structures and functions. The benefits of integration as a result of ERP system adoption enables better managerial control through the availability of integrated data from different departments (Teittinen et al., 2013). Managers are given a better opportunity to analyse data and make decisions in real time; however, the collection of this data could be a challenge in the absence of an integrative ERP system function.

The availability of multi-departmental data at a press of a button enables greater flexibility through easy and quick access of this data (Kanellou and Spathis, 2013). This feature to access complex data with ease could facilitate responsive and proactive business decision in real time. Real time reporting increases benefits derived from an ERP system and can be achieved through the integration of ERP applications, enabling access through mobile devices, the storage of information in a cloud based technology, business intelligence, and the management of business processes (Trigo et al., 2014). During their research study, Teittinen et al. (2013) observed the ERP system integration benefits in the accounting department which were the simplicity of collecting data, producing financial statements and conforming to accounting rules. Business investors and managers should, however, keep in mind that these ERP system benefits are not automatically attained after the implementation of the system. It may, therefore, require proper initial implementation and

other follow up projects or processes thereafter to ensure consistency of benefits realisation between ERP system adoption phases.

During the investigation of the orchestration theory of ERP system benefits, Badewi et al. (2017) emphasises that the quality of benefits obtained from the adoption of an ERP system is highly dependent on the ability of the company to implement an ERP system such that all departments, relevant data are integrated in a manner that fits the intended benefits and the unique purpose of that company.

2.3.5 Adoption of ERP based on benefits and success factors

Adoption to ERP is critical to its success. According to research by Norton et al. (2013), they listed 19 critical success factors as per the literature at that time and specified that resources which are not necessary in certain phase of adoption should not be used. They further added 6 more critical factors to the list and developed a CSF phasing model to be used for guidance during the different phases of an ERP system adoption. The CSF was identified to be the most important was that of top management support for ERP system projects. The CSF phasing model gave guidance on the critical pathways to be taken to maximise the benefits target in each phase of adoption. It sheds light on which resources are more important between different phases of ERP system adoption.

According to Badewi et al. (2017) the adoption of an ERP system is not immediate. It is a process that is carried out in different phases with each having its own demand and value to deliver, as a result companies adopting an ERP system are required to align different phases of adoption with resources and benefits that are obtainable in each phase. They need to understand the relationships among the components of the ERP system within the company and how these relationships add to the attainment of desired benefits. All the employees and their skill profiles need to be taken into account, including all the processes already being carried out in the company. Opportunities that could be offered by the ERP system and challenges need to be identified and aligned with the adoption phases involved.

The critical pathway model developed by Norton et al. (2013) provides guidance on how to align ERP system adoption phases to ERP critical success factors and strategic IT areas with the purpose of attaining maximum benefits. They apply the IT business model which identifies 3 strategic areas which are people, process and technology. This model was combined with the benefit realisation model developed by Lange et al. (2012). It identifies

different benefit areas which are the planning of required benefits, the actual attainment of the benefits, the assessment of benefits attainment and taking advantage of the benefits in the long term. Finally the two models were combined with four phases of ERP system implementation. The phases include chattering, project, shakedown, and onward and upward phase. Each component in the model is mapped to another to produce the critical pathway model which is created to guide the allocation of resources with a purpose of maximizing ERP system benefits.

The research study of Kanellou and Spathis (2013) investigated the accounting benefits of using ERP system in relation with user satisfaction. They discovered that there is no major difference between the perceptions of IT department and Accounting department users with regards to the accounting benefits they perceived. There are many factors that could drive the attainment of ERP system benefits; therefore, studying drivers of ERP system benefits is an opportunity to assist ERP system designers and business managers to understand how to drive ERP system benefits and secure a higher level of benefits attainment (Teittinen et al., 2013).

While investigating the benefits of ERP system in a telecommunication industry Kadir et al. (2015) made effort to identify the quality components of the Delone and Maclean Information Systems model IS success model that drive the attainment of ERP system benefits. They concluded that service quality is the only quality component that had significant effect on ERP benefits obtained. In a study that was conducted in the middle Eastern perspective Almahamid and Awsi (2015) looked at the effect of organisational environment inclusive of top management support, company wide support, business reengineering, effective project management and organisational culture, and ERP vendor environment (ERP vendor support) towards ERP system attained benefits. They concluded that all the factors will favour the attainment of ERP system benefits excluding top management support.

It is not only the drivers that will assist business companies to attain maximum benefits; they need also to consider the ERP system vendors they chose. In light of this Huang and Handfield (2015b) developed a supply chain maturity model that uses 3 elements which are strategic sourcing, category management, and supplier relationship management. They used it to compare the supply chain maturity between Fortune 500 companies that implemented an ERP system with different vendors (SAP and Oracle) and the companies

that did not adopt an ERP system. They indicated that SAP users had a more matured supply chain compared to Oracle users; however, companies that adopted an ERP also had a matured supply chain than those that did not. Another study that focused on a single department is that of Kanellou and Spathis (2013), they investigated the impact of ERP system benefits on the accounting department by classifying accounting benefits into 5 dimensions: IT accounting benefits, operational accounting benefits (time and cost), organisational accounting benefits and managerial accounting benefits.

In their effort to analyse strategic benefits of ERP systems, Ranjan et al. (2017) studied critical benefits factors to identify and understand the impact they have on business organisations. Based on other studies they analysed, they discovered 25 critical benefit factors and they investigated these factors by classifying them according to business strategic areas which are employee, process, customer and finance. This allowed them to identify 8 most significant benefits of which the most important they identified, is the protection of intellectual property while Teittinen et al. (2013) pointed out that the most important benefit that can be obtained from an ERP system adoption is the enhancement of the company vision and the strategy to carry it out. Other main benefits highlighted by Teittinen et al. (2013) were the standardisation of business operations across department and the visibility of operational information in real time.

2.3.6 Concerns over ERP implementation

According to Zhang et al. (2012) the adoption of an ERP system can be risky, requiring great investment amounts and an immense volume of time and effort. The risk involved in ERP system implementation can result into a loss instead of competitive advantage. This, therefore, presents the challenge that hides behind the actual attainment of the benefits that ERP system vendors and developers promises to business organisations.

After the implementation of an ERP system, all the stakeholders which include employees, business owners and third parties can/will have immediate access, and therefore benefit from the project of implementation. What remains at this point is a question of what is needed to derive value out of the newly introduced highly technological tool in the organisation. This become the critical point where problems can most likely present themselves (Salih et al., 2013). Business leaders and other business representatives have to work together to benefit from the ERP system after the adoption. The first area that management should look at or should have prepared for is the specific identification of the

benefits that the business organisation intended the ERP system for. Most of the time this is not the case, and therefore such conditions open up for confusion and waste of resources and technological capabilities which compromises business success (Badewi et al., 2017).

In the case of an investment made on an ERP system becoming a loss, this will defeat the main purpose of adopting it. Managers, therefore, have a challenge of making sure that investing into an ERP system will have positive benefits. The attainment of the various benefits has been one of the main challenges that researchers have been trying to understand (Kadir et al., 2015). It is clear that there is much work needed to adopt an ERP system and attain maximum benefits.

2.4 ERP system challenges

In the previous section it is made clear that the maximisation of the attainment of ERP system benefits is at the centre of its attainment. However, the understanding of challenges that come with the adoption of ERP systems is also significant. In line with this, Ahmad and Pinedo Cuenca (2013) emphasised the importance of understanding critical success factors of ERP system implementation in reducing the impact of challenges that come with the adoption. Therefore, the mere adoption of an ERP system without the regard of challenges that may impede the attainment of the benefits, may not result into the expected benefits being attained. This, therefore, leads to a more complete purpose, which refers to the need that ERP system adopters will have to fulfil in minimising ERP challenges and increasing the ERP system benefits.

Towards the end of the 20th century, ERP systems have become more popular; however, they are still complex, and therefore present many challenges before businesses can actually use them properly (May et al., 2013). The challenges that may appear with the adoption of an ERP system can result in business failure. Therefore, it is necessary to understand these challenges in order to minimise their impact. In support of this, Maier et al. (2015) also concluded that complexity is one of the key challenges of ERP systems. This they concluded through a study that investigated ERP system characteristics that caused stress and exhaustion to employees.

Regardless of the complexity that comes with the development and adoption of ERP systems, all areas and stakeholders whom/which are affected by the ERP system should be integrated into the implementation thereof. The study conducted by (Banaeianjahromi et al.,

2016) Banaeianjahromi et al. (2016) on integration challenges proposed 13 categories of integration challenges which reveal all integration barriers. The challenge categories were classified into 4 themes which were: environmental obstacles, technical obstacles, managerial obstacles and organisation obstacles. The environmental obstacles included the category of intra organisational environment and inter organisational environment. Some of the technical obstacles categories were the ERP product selection and implementation strategy obstacles, and the ERP system characteristics obstacles. They further emphasised that integration should be prioritised highly, and therefore should be a separate project from the implementation project of the ERP system.

Business organisations are faced with the cost of ensuring that their ERP systems are still relevant to economic trends (Shan et al., 2014). Ensuring relevant economic trends may entail constant research, analysis and the enforcement of the alignment between the functions provided by the ERP system and economic activities occurring inside the organisation and externally. In line to these challenges, Chaudhary (2017) also expressed the same view with regards to the high costs that organisations have to bare when it comes to maintaining and upgrading their ERP systems. The process of upgrading an ERP system may include but not limited to, costly physical equipment that is used to house and allow access to the ERP system software.

While conducting research to understand the successful change management of ERP systems, AL-Ghamdi (2013) identified that ERP systems at times have been outdated, and therefore not aligned with economic trends as implied by Shan et al. (2014). The author further added that the most daring challenge behind the high cost of ERP system upgrades and maintenance issues was the cost of change management. A change management model was proposed which argued that before the changes are made on the ERP system, the change management environment must be dealt with first. It was recommended that this can be done through user training, user preparation, user IT reskilling, and a proper introduction to the new features of the ERP system to be implemented or upgraded.

This cost challenge was identified by Teittinen et al. (2013) by pointing out that maintenance is unavoidable and constantly required after the adoption of an ERP system. Business organisations are, therefore, faced with maintenance challenges which continue regardless if the ERP system was initially implemented correctly. This may mean that successful implementation maybe temporary and does not mean successful business in the

future. Nevertheless, with the challenge of high costs associated, business leaders are still required to use insufficient resources to make sure that their ERP systems are updated and in line with contemporary trends (Shirazi, 2018). The challenges of limited resources as a source of failure is also presented in the study conducted by Babaei et al. (2015), when they identified these as project teams which were unbalanced and had no presence of sufficiently experienced and skilled employees. In addition to the cost challenges mentioned in this section, Norton et al. (2013) also pointed out that the involvement of top management representative in ERP system implementation can hinder success because they are too conscious and sensitive to cost savings principles.

In addition, an ERP system can be implemented successfully in one department and unsuccessful in another. A study was conducted at a Chinese multinational cooperation whereby the challenges which came with the implementation of an ERP system were successfully resolved. However, the adjustments that fixed one portion of the ERP system presented problems of transparency from the management point of view (Malaurent and Avison, 2015). These challenges reveal the complexity that is involved in planning the changes that are aimed at overcoming a certain challenges (May et al., 2013). A full analysis and identification of risk and any impact that may come with the changes need to be identified prior to the change being implemented.

Among the ERP system challenges in the literature, Teittinen et al. (2013) also noticed that the challenges of high expectation were mostly emanating from the top management. The top management are the people who most likely will be benefiting at most from the ERP system since they require reports which reveal all activities in company in different formats which may be detailed or summarised. These reports are critical in making high impact business decisions.

In opposition to their initial claim, Teittinen et al. (2013) argued that although research showed that ERP systems assisted businesses to standardise their functions; however, the effort required from functional workers made it hard for them to do their work because the ERP system only had limited standardised functionality and different business units had more flexible functions. They also came up with contradicting results as per the literature they conducted at that time. These results were that the ERP systems failed to provide a harmonious standardised environment but instead caused more problems, although the

ERP system is a key factor in providing reports for top management but it did not demonstrate any effort in supporting other strategic areas like business culture.

While seeking answers regarding solutions to ERP system challenges, Andersson and Gustavsson (2014) presented a model based on the reactive approach to minimising challenges related to resistance to change that comes with an implementation of an ERP system. Resistance may come as a result of employees who are not willing to accept the change that comes with the implementation of the ERP system. For businesses to be able to derive benefits and minimise challenges, they have to adopt new ways of doing daily tasks which must conform to the ERP system being adopted. Other factors that contribute to user resistance include the human nature of users to react to change, lack of IT skills, insecurities due to possible job losses as result of the change and employees who do not like technology (AL-Ghamdi, 2013). The findings also point out to the need for ERP systems designer to design systems that conform to business processes as opposite to the business conforming to the system.

Business leaders need to open their mind set and acknowledge that the challenges of employees resisting the change that come with the ERP system can be worked around (Malaurent and Avison, 2015). In such case, this means more work is required from the customer who is buying the ERP system and the vendor providing it. This work will then be meant to adjust the ERP system to conform to business rules and culture related. Other areas of concentration could be the rate of change that comes with the ERP system. This is suggested in the light of Maier et al. (2015) results which reveal that the rate of change can be one of the challenges that affect employees the most.

2.5 ERP system satisfaction

The attitude of a user towards a product has been historically used in social psychology and other behavioural studies to determine the success of the product and it is the main construct that defines user satisfaction (Vaezi et al., 2016). This is evident in that the productivity of managers found to be higher in relation to their satisfaction using an ERP system (Weli, 2014). User satisfaction comprises the actual experience the user has with an ERP system compared to the best experience they have conceptualised in their mind (Shan et al., 2014). The success of an ERP system is determined by user satisfaction (Aggelidis and Chatzoglou, 2012, Delone and McLean, 2003). To deliver products or services that

satisfy customers, companies should first provide an IT system that satisfy employees (Shan et al., 2014).

Current research looks at direct effect caused by variables, specific activities or elements on the ERP system user satisfaction (Weli, 2014, Shan et al., 2014). Other studies focus on the direct effect and mediating effect between independent variables and mediating variables on ERP system user satisfaction (Lai et al., 2013, Al-Jabri, 2015). These attempts are centred on seeking understanding concerning the relationship between independent and mediating variables with ERP system user satisfaction. Through understanding these relationships, software designers, managers and business owners could have an advantage that can help them to succeed in their businesses. The growing accumulation of knowledge and understanding of factors that affect user satisfaction in turn increases the ability of beneficial use of ERP system (Somers et al., 2003).

In an effort to produce more knowledge on user satisfaction, Shan et al. (2014) conducted an empirical study in a technological communications and software development company in China. The study's aim was to determine factors influencing ERP user satisfaction. The results of the investigation revealed that all the investigated elements had significant positive impact on ERP user satisfaction. These elements include IT support, training and reliability. It was also added that training and development will help employees to be more skilled and productive, and therefore they can be promoted. They further explained that the promotion will inspire employees to be loyal, and therefore to remain within the company longer. This evidence is in line with Al-Jabri (2015) findings which emphasised that training and development have mediating effect on user satisfaction, as it shows that there could be other variables like employee promotion and loyalty which could have mediating effects on user satisfaction.

These findings from Shan et al. (2014) are, however, are incomplete as far as Al-Jabri (2015) findings are concerned, in which they concluded that training will not have direct effect on user satisfaction; however, it will positively affect ease of use and there by indirectly influence user satisfaction. They further elaborated that this indirect effect is caused by the benefits derived and the sense of appreciation as a result of the user perceiving that the ERP system is easy to use. This relationship produces conviction that training should be centred on empowering the user so that they have less difficulty when using the ERP system that is to increasing ease of use.

The importance of a high measure of ease of use when adopting an information system is further contrasted by Montesdioca and Maçada (2015), where they investigated information security and user satisfaction. They discovered that the performance of an information system with information security measures does not increase user satisfaction if the information system is not designed to be easy to use. They further explained that information security can be identified as a hindrance of effectiveness to the user. However, easiness of use mitigates this perception.

According to Al-Jabri (2015) while good communication regarding the impact of adopting the ERP system to users could assist users to prepare themselves to effectively use the system; however, communication is found to be directly correlated to both ease of use and user satisfaction. They further add that information possessed by users about the ERP system could add positivity in the working environment. In addition Karlinsky-Shichor and Zviran (2016) confirmed this by discovering that the skill to use an ERP system possessed by the user will have positive influence on user satisfaction. Furthermore Lai et al. (2013) also did an investigation on another study that showed a variable that has a mediating effect on user satisfaction. They discovered that there exist mediating effects of relational norms on vendor transaction specific investment (TSI) and customer TSI on ERP system user satisfaction. They measure relational norms by using perceived quality by user and trust between user and vendor implementing the ERP system. Through their research results, they confirmed that relational norms, customer and vendor TSI had no significant direct effect on ERP user satisfaction. They define vendor or customer transaction specific investment as the contribution of resources from both stakeholders in the adoption of an ERP system. This research revealed the significance of the role played by different parties in the adoption of an ERP system.

The stakeholder theory was used to underpin the study of user satisfaction between IT professional and accountants by Kanellou and Spathis (2013). They found that accountants were generally more satisfied than IT professionals. Software developers and other IT professionals were involved in the background implementation of the ERP system, and therefore have more information concerning the imperfections of the system. Furthermore the importance of the characteristics that make up different users has a role to play in the perception of satisfaction per user. The designers of ERP systems should design systems that conform to human attributes (Usmanij et al., 2013). Different stakeholders involved in

the adoption of an ERP system could have different human attributes as a result the ERP system should be designed to cater for all attributes.

Using the end user's satisfaction computing model (EUCS) developed by Doll and Torkzadeh (1988), Aggelidis and Chatzoglou (2012) assessed the model and validated if it could be used to measure user satisfaction in a hospital information system environment. The model used content, accuracy, format, ease of use, and timeliness as constructs for measurement. The study conducted by Weli (2014) also confirmed that the EUCS model could be used to measure ERP system user satisfaction for managers working in information technology and accounting departments. All the constructs of EUCS model were found to have positive impact on user satisfaction (Aggelidis and Chatzoglou, 2012, Weli, 2014, Marakarkandy and Yajnik, 2013).

Applying the EUCS model to measure satisfaction of users who were using the internet banking system, Marakarkandy and Yajnik (2013) findings reveal results in line with those of (Weli, 2014); however, they add that the manner of output presentation from the IT system followed by timeous delivery thereof has more significant impact on user satisfaction compared to the impact caused by the other measurement constructs of the EUCS model. This is in line with Aggelidis and Chatzoglou (2012) findings; however, they discovered that timeous delivery has most significant followed by accuracy. To some extent these result are contradicting because Marakarkandy and Yajnik (2013) results showed that content is most least significant and second last is accuracy while Aggelidis and Chatzoglou (2012) has ease of use as last and format as second last.

It seems that the constructs of the EUCS model could be similar or related to the elements in the human centred ERP system model proposed by Usmanij et al. (2013). The human centred ERP system model comprises of the following elements: process dimension, syntactic dimension, semantic dimension, social dimension, and pragmatic dimension which aim to cover the human centeredness of the ERP system. The process dimension seem to relate to the content and accuracy constructs, the syntactic dimension could relate to the format construct, the social dimension seem similar to the ease of use construct while pragmatic dimension could relate to timeliness. It is not clear which elements could be similar or related to the semantic dimension construct of the human centred model. The semantic dimension entails the purpose driving the design of an ERP system.

The assumption of the relatedness of these constructs is based on the similar meanings or common elements between them; however, to be certain of this more investigation and empirical results are needed. Similar to the elements of EUCS model tested by Weli (2014), all the elements of the human centred ERP system model are found to positively influence user satisfaction while the pragmatic dimension is found to have the strongest effect on user satisfaction and semantic dimension had the least effect on user satisfaction (Usmanij et al., 2013). However, Weli (2014) study does not show which of the constructs had strongest or weakest correlation characteristics with ERP user satisfaction. On the other hand this conclusion on pragmatic dimension being strongest effect aligns completely with Aggelidis and Chatzoglou (2012) finding that timelines is most significant, this could be evidence that indeed these models have common relationships or similarities.

The quality of output from the IT system will have positive influence on user satisfaction (Karlinsky-Shichor and Zviran, 2016). Technical resources were found to have no significant influence on user satisfaction (Karlinsky-Shichor and Zviran, 2016). According to the studies investigated, it is clear that human centeredness of an ERP system to promote ease of use seem to be the main elements that will determine user satisfaction, and therefore ERP system success. This research will, therefore, analyse attitude towards and perceptions of general ERP benefits and seek to understand whether these influences user satisfaction.

The study conducted by Kanchymalay et al. (2013) discovered that lack of satisfaction on ERP system can be caused by high customization. They discussed how customization can compromise inability to maintain the ERP system of which Teittinen et al. (2013) believed that it was unavoidable. While Slabbert et al. (2016) discovered that too much customisation made it impossible to upgrade the ERP systems. The complexity, therefore, makes it difficult to use, upgrade and maintain the ERP system. Lastly Kanchymalay et al. (2013) declared that the succession of these events will then lead to lower user satisfaction.

2.6 ERP system user expectations

The adoption of ERP systems is driven by the positive expectations that these systems will enhance the performance and status quo of the organisations implementing them (Kanellou and Spathis, 2013). As a result many companies are investing large financial resources because they are motivated by expectations that the ERP system will improve the

company's competitive advantage strength (Mitakos et al., 2010). However, expectations are not the same across industries and different employee levels and personalities (Shan et al., 2014). Managers expect ERP systems to improve strategic abilities while other employees may expect ERP system to improve functional areas they are positioned in (Teittinen et al., 2013). Due to the differences of employee profiles and expectations, companies adopting the ERP system are required to understand if or how these differences may impact the expected outcomes.

Expectant ERP system users can have exaggerated beliefs that their expectations will automatically manifest immediately after the ERP system is implemented (Stratman, 2007). When users discover that the ERP system they are using does not deliver what they expected, it can cause user resistance, this can, however, be mitigated through communication that inform users of the actual benefits that the ERP system will offer (Salih et al., 2013). High expectations can cause ERP users to underestimate the actual outcomes of ERP system adoption and lower expectations can have vice-versa effect (Teittinen et al., 2013).

In a recent study, Badewi et al. (2017) emphasised that the alignment of the implementation method, areas, and use of an ERP system to experience the expected outcome is significant. Clearly the outcome of an ERP system adoption is dependent on how the implementation is conducted between different phase of adoption and the quality of the ERP system being adopted. It was noticeable that Guimaraes et al. (2015) view was different since they believed that ERP system success is compromised as result of the majority of resources being invested into the actual implementation of the system, they suggest that the emphasis should be applied firmly also on understanding other factors that may affect the system like the understanding of the expectations of users who will be using the system.

In their study Mitakos et al. (2010) believed that the more prospective ERP users expect from ERP system the more they will benefit and be satisfied. He further explained that when ERP system exceeds the expectations of the user, the user will be more satisfied by the system. The ERP system designers, therefore, have a challenge of exceeding the expectations of ERP systems users with different expectations, and for them to be able to produce these results; they need to understand ERP user expectations.

User expectations can be experienced before or after the implementation of an ERP system (Kim, 2012). They further discovered that post implementation expectations are affected by the experience that users will actually have after the implementation of the ERP system, they also expressed their belief that the post expectation will affect post purchase of other features of the ERP system. However, the involvement of users during the phases of adoption of the ERP system will result into higher satisfaction and user acceptance through the reshaping of their expectations into more realistic ones (Ahmad and Pinedo Cuenca, 2013). This is in line with the finding that educating ERP system users can have impact on the way they see the system and it can also adjust their expectations to be within limits. This is also supported by Saadé et al. (2017) who realised that users were not expecting the ERP system to change drastically the way they were working before; however, their job routines were affected significantly. They suggested that a proper change management plan, communication method and strategy should have been used to prepare users.

2.7 Conceptual framework

A conceptual model was created to facilitate and provide guidance for the study. The DeLone and McLean IS success model and the literature review were used to develop the conceptual framework model that guided the research. The DeLone and McLean IS success model was initially developed in the late 20th century (1992) and it has been referred to by many scholars (Rana et al., 2015, Salahuddin and Ismail, 2015, Dwivedi et al., 2015, Steinhueser et al., 2015). It has been updated 10 years later (2003) by DeLone and McLean; thereafter it has been found to be relevant and effective also in the 21st century (Delone and McLean, 2003).

To investigate the relationship between the user expectations of general benefits with user satisfaction and with the actual benefits derived from using ERP systems, the measurement of general expected benefits (*g_exp_benefits*), user satisfaction (*satisfaction*) and actual benefits derived (*actual_benefits*) was necessary. The variable *g_exp_benefits* is independent while the variables *satisfaction* and *actual_benefits* are dependent. The DeLone and McLean IS success model was applied; however, only the variables which were relevant to this study were utilized from the model. A new independent variable had to be introduced into the model. The variable that was included was that of general benefits expected by the ERP system users. This is shown in the conceptual framework in figure 2.1.

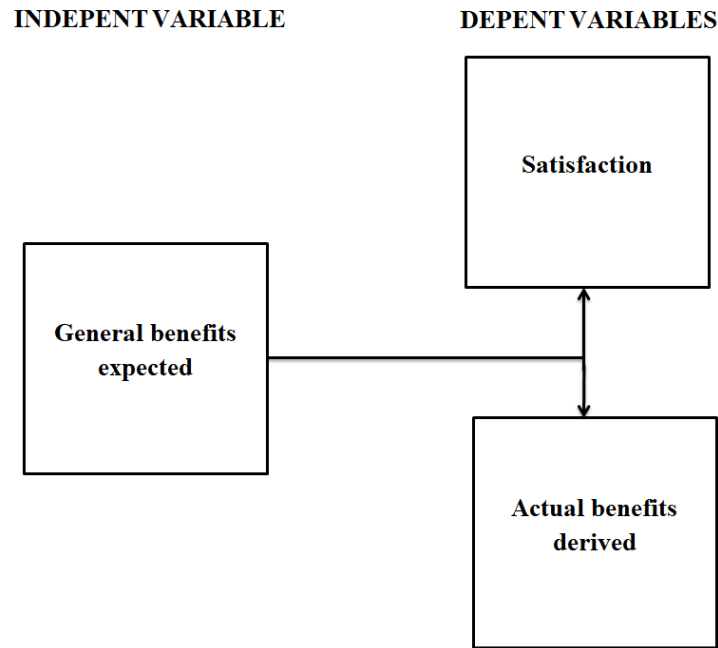


Figure 2. 1: Conceptual framework developed from DeLone and McLean IS success model

2.8 Summary

The derivation of ERP system benefits is dependent on the comprehensive identification and understanding of these benefits. The ERP system benefits are then classified into five dimensional. Each phase of an ERP system adoption has associated benefits and these benefits can only be attained only if each phase is conducted appropriately. The CSF phasing model and the pathway model can be used to guide ERP system adoption between phases. The best vendor identified was SAP followed by Oracle. The research on ERP systems is centred on the discovery and understanding of the factors that influence user satisfaction or mediate the influence thereof. The end user's satisfaction computing model (EUCS) and the human centered ERP system model have common factors and can be used successfully to investigate user satisfaction. Different employees were found to have different expectations while the top management department was found to have higher expectations. High ERP system benefits expectation can result into the underestimation of the actual benefits experienced.

Chapter 3

Research methodology

3.1 Introduction

In this chapter, the method that was applied to answer the research questions is outlined. This research was methodically carried out using a set of beliefs and assumption on how to approach the research questions and make informed conclusions through valid data analysis methods. A systematised method was executed to maximise the credibility of outcomes produced by this study. The techniques or procedures were chosen carefully to ensure alignment in different stages of the research process.

3.2 Research philosophy

The systematised process followed to create new knowledge is dependent on what the researcher believes and assumes, it is referred to as research philosophy (Saunders et al., 2016). This points out that the research process followed by each researcher is dependent on their philosophical stance, as a result a study that seeks to answer to the same problem can be conducted in different ways by different researchers. However, the knowledge creation underpinned by different philosophies is considered empirical and accepted as valid in social science.

3.2.1 Assumptions

A battle of decades in choosing a single philosophy among the multiple research philosophies being accepted and standardly applied towards business and management research has had no resolution (Saunders et al., 2016). However, the final outcome resulted in different groups of researchers which include those who are unificationists which are those who believe that social science should adhere to one best fitting philosophy. The other group are those of pluralists which believe that researchers should choose their research method based on the way they view reality and the correct accumulation of knowledge. In this section we articulate the assumptions that underpinned the philosophical decisions that were taken to conduct the study based on a pluralist approach.

Every research philosophy chosen by any researcher will be comprised of 3 philosophical components. These are ontological assumptions which refers to assumption made with

regards to what is real or what is not real in nature, epistemological assumptions which has to do with the beliefs concerning what is knowledge and which is accepted as valid and genuine and axiological assumptions which constitutes ethical values which guide the research process.

The assumptions made by researchers can be grouped into two which is objectivism and subjectivism. Objectivism is a set of beliefs that support the assumption that there is one true reality, it is understood by observing the facts and laws that surround nature (Antwi and Hamza, 2015). Objectivists do not consider themselves and their research as ethically bound. Subjectivists believe that there is more than one reality that it is shaped by the observer and their research is ethically bound (Moon and Blackman, 2014).

In this research study, the participants are considered to be relativists and business principles are considered to be realistic. This means that research participants were assumed to have different views of reality, which is they understood and valued business principles different while the business principles affected their behaviour in one way.

3.2.2 Paradigm

Research paradigms refer to philosophical dimensions that comprises of politics and ideologies that researchers use to relate towards the world of social (Neuman, 2013). The ideologies and politics philosophical properties are classified into four dimensions. These dimensions refer to 2 philosophical dimensions and 2 perspective dimensions. The philosophical dimensions are the subjective and objective dimension. The perspective dimensions are radical change and regulation dimension.

This research aimed to discover knowledge with a purpose of improving the business status quo. The study was carried out with the purpose of critically analysing and understanding relationships and patterns that maximized the benefits that businesses derived from the adoption of ERP systems. The paradigm that underpinned this study was aimed to objectively bring radical change to the status quo of business. A radical structuralist was, therefore, the research paradigm that underpinned the study (Ardalan, 2017).

3.2.3 Philosophy selection

A pragmatic philosophy underpins the method chosen to carry out the study. A pragmatic research philosophy is not restricted to a specific ontology or epistemology. This points to the pragmatist belief that realities are multifaceted and also are the methods applied to understanding reality as result the approach to solving problems and developing knowledge is based on the nature of the problem (Antwi and Hamza, 2015). The research process was strongly driven by the nature of the research problem and literature reviewed, as a result a framework that was found to be most aligned to the research problem variables was chosen to guide the study process. However, the dominating philosophy is that of a critical realist. In this research literature was analysed in the context of avoiding duplication of knowledge creation and to build upon other frameworks and research conclusions already tested by researchers in the past. Therefore, this study leaned more strongly on critical realist philosophy which promotes the epistemology of relativism.

3.3 Approach to theory development

As stated by (Saunders et al., 2016, p.146), “If your research starts with theory, often developed from your reading of the academic literature, and you design a research strategy to the theory, you are using a deductive approach.” The chosen logic, the use of data and theory applied in the attempt to provide a solution to the research problem is that of a deductive approach.

Through an in-depth literature review to identify the gap in the existing knowledge the research problem was identified. This was followed by a critical investigation and analysis to existing theory related to the research problem to guide the process of research. A research model that was found to be credible and aligned to the research problem, was chosen to further guide the study. The development of research question and objectives followed. The variables were then identified through the research model, literature, research questions and objectives. These variables were then measured through a questionnaire which was used to collect data. Proper data analysis methods and techniques are then applied to identify trends and relationships to answer the research questions and fulfil the research objective in turn providing conclusion to the research problem.

3.4 Research design

A plan that comprises of how a research problem is solved through the understanding of existing literature, the identification of variables and relationships among them, and the systematic approach applied to do this through the collection of data, checking of validity reliability and generalisability is refereed by Schwartz-Shea and Yanow (2013) as research design and is applied by many scholars.

3.4.1 Methodological choice

The pragmatic nature that underpinned the research was the main influential factor in designing the entire research methodology including the selection of the research method. A decision on a methodical choice had to be made after considering the research environment, participants and the entire underlying characteristics that affected the research study. The ability of the participant in understanding knowledge was considered to be that of a relativist; however, the business principles were considered to be based on a single truth or one reality as a result the quantitative method was chosen as it enabled easy analysis of data.

3.4.2 Quantitative

The measurability of activities or variables is facilitated strongly by a quantitative method (Rahman, 2016). Therefore, a quantitative method allows for quick and larger samples of data collection which in turn facilitates generalisation of research conclusion to the entire population (Yilmaz, 2013). The reliability of quantitative analysis is generally considered to be higher compared to other methods. The research process can be systematised more effectively and efficiently in comparison to other methods. A deductive approach to theory also inspired the selection of a quantitative method as it facilitated the systematised nature of knowledge creation. The social aspects of the research are quantitated to identify underlying relationships, trends and patterns (Rahman, 2016). This means that the research problem, research questions and objectives can be evaluated and conclusions can be made.

3.4.3 Research design purpose

A research design can be created with a purpose to explore, describe , explain or evaluate sociological science matters (Schwartz-Shea and Yanow, 2013). In this study, the research problem was confirmed as a gap through the review of literature and it was further broken

down to research questions and objectives in alignment with DeLone and McLean IS success model (Delone and McLean, 2003). Through the study, causal relationships between variables were discovered. The study was, therefore, designed to be explanatory.

3.4.4 Data collection strategy

The culture of the environment where the research was conducted did not permit close contact between research participants and the researcher, also the time required that the researcher could spend in data collection was limited mainly due to the organisation's policies.

After careful consideration of the philosophical paradigm and opportunities availed by the nature of the research environment, a quantitative method was chosen.

The human nature of the research subjects drove the research philosophy to be subjective while the realist ontological assumptions made with regards to business rules and their relation to ERP systems drove the research philosophy to be deductive. It was believed that the understanding of business and ERP systems is dependent on each user; however, business rules and the nature of ERP systems affected all users in the same way. The critical realist underpinnings of the study led to a survey tool being chosen to collect data through a questionnaire. The questionnaire allowed users to rank measurements based on their perspective on the measure while the measure was connected to a business rule in line with an ERP system.

The environmental nature did not allow an open door policy to the collection of data as a result online questionnaires allowed for data collection regardless. This research has been conducted within a short time limitation as it has been part of a university course. Quantitative methods enabled time effective data collection and analysis due to the low cost and ability to collect data without travelling and allocating time with each research participant.

3.4.5 Timeline horizon

The study was taken in fulfilment of a university course, as a result it had to be conducted in a limited time period, and therefore the study timeline horizon had to be cross-sectional.

3.4.6 Ethics

The axiological underpinning of the study regarded ethical conduct as of high important. As a result careful consideration were undertaken to ensure that all the processes involved in carrying out research were ethically sensitive.

The research problem, research questions and objectives were analysed by the researcher and were ethically cleared by the humanities and social sciences research ethics committee of the graduate school of business and leadership at the University of KwaZulu-Natal. The ethical clearance letter can be viewed in appendix 1.

Through an informed consent letter, research participants were informed of the research topic, purpose and role of the research participant and researcher. The research participants were clearly informed that their participation was fully anonymous and voluntary. They were also alerted that the confidentiality of records was going to be maintained by the Graduate School of Business and Leadership, UKZN. They were given free right to withdraw from participation at any point in time should they feel they need to. To ensure that the participants were fully aware of their involvement in the research, they were required to sign and confirmed that they understood all the details provided on the letter. Furthermore contact details of the school, researcher, research office representative, and research supervisor were provided on the letter.

3.4.7 Quality

The quality of the research has to do with the careful consideration and adoption of academically recognised procedures in decisions taken to avoid making wrong conclusions and increasing the chances of reaching the correct research outcomes (Neuman, 2013). The collection of data and the analysis thereof needed to be done using the correct and academically recognised methods. The alignment of tools used to collect data and techniques used to analyse collected data were coherent with the research problem and the entire process of conducting the study. The study was conducted within a limited time period and resources, therefore not all quality testing techniques could be applied. Regardless, firm effort was vigorously applied to produce quality research by using the available and applicable techniques to increase the quality and validity of the research. Some of the techniques applied were the Cronbach's alpha that was used to test the internal consistency of the measuring scale. The data collection was conducted with the firm

intention to reduce participant error, participant bias, researcher error, and researcher bias. The exploratory factor analysis (EFA) was applied to test dimensionality and validity of the questionnaire items.

3.4.7.1 Validity

The results of a research study are considered valid if data collection tools were selected and used correctly, data collected was analysed accordingly to the correct underpinnings of the research methodology, and the findings produced are generalisable (Schwartz-Shea and Yanow, 2013).

3.4.7.1.1 Internal Validity

Internal validity is the degree of accuracy in the discovering of causal relationship between two variables (Saunders et al., 2016). The research was designed to ensure that proper analysis methods were used to discover causal relationships.

There were no changes which were identified in the environment where research data was collected that threaten the attitudes or changed the perceptions of the research participants. All research participants were fully alerted that their involvement in the study had no positive or negative consequences. The study was conducted using a questionnaire and there were no changes that were made on it during the collection of data. The questions on the questionnaire were all mandatory as a result only completed questionnaires were used for data analysis. There were no events that occurred during data collection that could have affected knowledge possessed by participants and thereby in turn alter their responses. The aspects which were identified to be outside the participant's work environment vocabulary were described clearly so that participants understood correctly what was required per question in the questionnaire.

3.4.7.1.2 Content Validity

If the researcher was able to measure all aspects of the research questions and objective through data collection, then that research is said to have content validity (Saunders et al., 2016). Through literature review the gap in the knowledge was identified and a proper model was chosen to guide the research. The model was used to guide the creation of the questionnaire. Each research question or objective was adequately measured through a set of grouped questions in the questionnaire.

3.4.7.2 Reliability

Reliability has to do with the replicability and consistency of research results, should the same research methodology be replicated to carry the study at a different time (Saunders et al., 2016). To ensure reliability the data collection instrument must be assessed to confirm that it measures what is actually intended to be measured. The analysis and correlational results of the study must be assessed for correctness. The theory confirmed or created through the study must be assessed for correctness.

3.4.7.2.1 External Reliability

External reliability focuses on the correct selection and use of data collection techniques to ensure that the correct responses from participants are not diverted by the participants or researcher's views or conditions affecting them during data collection (Saunders et al., 2016). The appropriate techniques used to collect data will increase the chances of producing the same previous results. This should be the case if the similar data collection techniques are applied in a similar environment.

During the period of data collection there were no events identified that occurred that could have affected the responses provided by the participants. Research participants were not put under pressure such that their responses were affected or pushed to a certain direction. To reduce any form of participant error or biasness, data collection was conducted ethically and in a polite manner. The Research participants were informed clearly that their participation was voluntary and they were firmly informed that they can withdraw from participation whenever they feel so. Furthermore anonymity was ensured to the participants. These actions were taken to increase the participant response accuracy, to ensure that participants were not driven to respond in a certain way.

The responses from participants were captured and interpreted correctly through a carefully constructed questionnaire. The opinions possessed by the researcher were not forced or imposed as the study was conducted, and therefore attempts to prevent biasness were taken. During the period of the study there were no external forces that were identified that could have affected the making of incorrect decisions or interpretation. The study was conducted with carefulness and vigour to ensure that the correct responses were recorded. Through the Cronbach's alpha to test if the scale was reliable.

3.4.7.2.3 Correlation and theory reliability

To ensure that correlations and the theory developed through them was valid; therefore, the analysis techniques applied were selected with carefulness. Parametric data analysis techniques were avoided due to the data being ordinal, ranked and not normally distributed. The application the chi-square correlation test and the Spearman's rank correlation coefficient test was done after the questionnaire was tested for goodness of measure through the KMO Bartlett's test. In addition the EFA confirmed the dimensionality and validity of the questionnaire items. Finally the correlations and theory developed were assessed against the graphical data analysis and the literature reviewed.

3.4.8 Researcher's role

The researcher took a role of an internal research as the course taken at the university was part-time and the researcher was an employee in the environment where the study was conducted.

3.5 Data collection

Before the data collection process was undertaken, measures were taken care to increase the usefulness, validation, and reliability of the data in relation to the research problem.

3.5.1 Study Setting

Many large companies around the world had adopted an ERP system. As a result, the total population of ERP system users from whom data could be collected is relatively large. For this study, the study setting was appropriate and was chosen based on the availability of ERP system users, the resources and time constraints for the study. At the time the research was conducted, the researcher had been an employee in a company that manufactured shoes. This company had an internal ERP system adopted more than a decade ago. Due to the part time nature of the MBA course programme, the researcher was working during the day which made it difficult to find time and collect data in other companies.

The research setting was, therefore, chosen to be the working place of the researcher which was at BATA SA, a shoe manufacturing company situated in KwaZulu-Natal, South Africa, with offices based in Pinetown (Durban), with a warehouse located in Harnasdale

and a factory based in Loskop. The company had 80 employees during the time research was conducted.

3.5.2 Sampling Technique

In an instance where the target sample is the entire population, then the sampling method used is the census method (Lavrakas, 2008, Australian, 2013, Farooq, 2013). The key components of the study which were the research setting, the nature of the study, the research problem, the research questions and objectives resulted in the census method being selected. The intention was to collect maximum data from all the available respondents in the research study setting. The total population was made up of 80 individuals and 53 responded, resulting into 66% of the entire population being represent in the sample.

3.5.3 Questionnaire Design

A series of questions had to be incorporated in the questionnaire with the purpose of gathering data to answer the research questions and fulfil research objectives. The questionnaire was made to have two sections, which facilitated readability with each section gathering relevant data. The first section collected demographical data, while section two collected research data. In section two, the questions were further grouped with each group focusing on collecting data required per question in the research questions.

3.5.4 Measurement Scale

For each section and question in a questionnaire, a measurement scale was chosen to fulfil the requirements of data that was required per section. The Likert scale measurement was chosen because it is the most universal method used to collect data in social science and this makes them most familiar to many people thereby they can be understood with less effort. The aim for section one was to collect demographical data and this was achieved by collecting descriptive (dichotomous and nominal) and ranked (ordinal) data. For the section that collected research data, only ranked (ordinal) data was collected through the Likert scale measurement. The Likert scale was coded from 1 to 5, with 5 indicating that respondent strongly agrees with the question or statement, 4 indicating respondent agrees, 3 indicating respondent is neutral, 2 indicating responded disagree with statement and lastly 1 indicating that respondent strongly disagrees with statement.

3.5.5 Data Collection Platform

A tool that minimised time and resources required to collect data from the research setting was required. An online questionnaire was, therefore, selected, as a result there was no need to travel or to have meeting with each research participant and the data required from participant was communicated efficiently. Google forms technology was used as an online tool to create the questionnaire. It allowed for research participants to read questions on questionnaire and to select answers corresponding to each question.

3.5.6 Data Collection Procedure

Once the research tool was selected, the questionnaire had to be distributed through a certain channel in order to reach ERP system users at BATA SA. Initially a pilot study was carried with two ERP system users to check that questions were clear, if there were any difficulties in following the instructions in the questionnaire and to test that the questionnaire fulfilled the objectives of the research. The questionnaire was then sent to all BATA employees through the medium of email. In the email, ERP systems users were invited to participate in the research and a hyperlink that pointed to the questionnaire was included in the mail. After 2 weeks a follow up email was sent, thanking those who had already completed the questionnaire and encouraging those who had not completed the questionnaire to do so. Follow up emails were sent every 2 weeks. Some employees at BATA had internet problems with their computers, and the questionnaire was handed to them to fill manually.

3.5.7 Pilot Testing

The questionnaire had to be tested to verify that it collected intended data and it was user friendly. The questionnaire was piloted on 2 ERP system users. The aim of piloting the questionnaire was to find difficulties encountered while filling the questionnaire. The pilot testing also allowed for checking of time required to complete questionnaire. The format and length of the questionnaire was further scrutinized through the pilot test. The data intended to be collected was confirmed and the data collected for the pilot test was checked if it could be analysed properly.

3.6 Data analysis

The process of data collection produced data; however, the raw data could not be used to make any conclusions with regards to answering the research questions. It was required for the data analysis process to follow, which transformed raw data into useful data. This process was carefully undertaken with the aim to produce valid and reliable results. The collected data had nominal and ordinal data types. All ordinal data collected had a score of less than 6 ranking and it was not normally distributed, and therefore only non-parametric data analysis techniques had to be applied. In this section, the plan executed to produce useful and meaningful information from raw data is further outlined in this section.

3.6.1 Preparation

After data collection the data had to be processed or analysed to produce results; however, the data must first be prepared before it can actually be analysed. There were precautions taken to prepare and ensure that the analysis process actually produced genuine results.

Initially all the data types for the data collected were taken into consideration when the data was being exported from the data collection tool and imported into the data analysis tool. The exported data file had to be coded appropriately as per data type for each variable. The data collection tool was effective and efficient; therefore, there were no missing data for any respondent who took part in the study. After the data layout was produced from the exported file, precautions were taken to check and remove errors on data collected or erroneous coding. The data layout was checked for incorrect coding, this was done by checking if codes that were on the data layout were within the correct subsets, also if the subsets between different variables were not overlapping incorrectly. An example of this was a character 'o' captured instead of a number zero.

3.6.2 Analysis Tool

To speed up the process of data analysis and the correctness of measures calculated during data analysis, an analysis tool had to be carefully chosen. In this research IBM SPSS was found to be most simple to use, flexible, scalable and it also provided a larger amount statistical analysis functions which were required in this research to carry out the analysis process. Therefore, IBM SPSS was chosen as the analysis tool for this study. The data

analysis was validated for errors or mistakes by doing the analysis in IBM SPSS in line with the analysis in Microsoft excel where it possible.

3.6.3 Data Exploration and Presentation

Initially the analysis had to begin with exploration and presentation of data using tables and graphs. The purpose for this was to firstly understand and explore data that was collected, this assisted by providing guidance of what technics to use to further analyse the data. It also allowed for the identification of findings which could easily be identified when the data was presented visually. To explore percentile proportions of different groups that participated in the study stacked bar charts were used and to identify highest and lowest values in the data bar graphs were used.

3.6.4 Relationships and Differences

Once bar charts and bar graphs helped to graphically show differences of responses between different groups, the next process was paved for the identification relationships and differences since the data had already been explored and understood graphically. The identification of relationship between variables was a major undertaking in the research that was useful in answering the research questions and research problem. The quality of the measuring scale had to be assessed. The exploration factor analysis (EFA) technique was applied to confirm the quality of the measuring scale. In addition the reliability analysis was conducted through the Cronbach's Alpha reliability technique. To test for relationship the chi-square test and Spearman's Rank Correlation Coefficient test was applied.

3.7 Chapter summary

This chapter provided the description of the conceptual model used to guide the study. The model was created with guidance from literature and the DeLone and McLean IS success model. The research philosophy that underpinned the study was presented. Assumptions made constituted the participants being considered to be relativists and business principles are considered to be realistic. The paradigm for the study was that of a radical structuralist and critical realist philosophy which promotes the epistemology of relativism was adopted. The approach to theory was deductive with a quantitative methodology supported by an exploratory study design. The research was ethically cleared by the University of

KwaZulu-Natal. The study validity was taken into account through internal validity and content validity techniques and was designed to be reliable through external reliability techniques. The study setting and location was within the BATA shoe manufacturing company situated in KwaZulu-Natal, South Africa. A census method of data collection had to be adopted and the data collection tool chosen was a questionnaire with a Likert scale measurement which collects ordinal and nominal data. This was distributed via Google forms. The analysis methods used were graphical and descriptive statistics, following are some of the statistical techniques used: EFA, Chi-square test, Mann-Whitney Test and Cronbach's Alpha. The next chapter presents the analysis and discussion of results.

Chapter 4

Analysis and discussion

4.1 Introduction

The previous chapter (Chapter 3) explained the details of the methodology underpinning the conduct of this study.

The aim of this section was to shed light to the research problem which aimed to understand the influence of user expectations on user satisfaction and on the actual benefits derived from using ERP systems. This was done through the analysis of data collected. The data was collected to measure user general expectations of benefits offered by the adoption of an ERP system. The actual benefits derived and user satisfaction of using the ERP system at BATA was also measured through a questionnaire data collection tool. In this chapter, the presentation of the analysis of data and discussion of results thereof are presented.

4.2 Reliability analysis

The coefficient of reliability or internal consistency of the measuring scale or questionnaire was measured through the Cronbach's alpha reliability technique. The result of the Cronbach's alpha statistic is shown in table 4.1. The Cronbach's alpha was 0.933 which is greater than 0.9 as result the scale is confirmed to have excellent internal consistency.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.933	0.919	22

Table 4. 1: Cronbach's alpha

4.3 Data collection summary

Table 4.2 shows the summary of data collected. There was a total census population of 80 employees who were requested to take part in the study of which 53 responded by completing the questionnaire. This amounted to a 66% response rate out of a total population.

The survey was conducted through an online tool called Google forms, as a result this allowed for rules to be enforced. The rules ensured that participant answered all the questions in the questionnaire, they were not allowed to open the next page or save changes if there were missing answers. The rule prevented missing data and all questionnaires that were completed had no missing data entered. The participants were also given multiple choice answers. Due to this no invalid data was captured by the participants

Number of employees who were invited to complete questionnaire at Bata	80
Number of participants who took part in the questionnaire	53
Number of valid completed questionnaires	53

Table 4. 2: Data collection summary statistics

4.4 Demographics data analysis

Figure 4.1 demonstrates the number of years each participant has worked for the company. Among all the respondents, the majority of participants had been working for the company for 6 years and below (60.38%). However, looking at individual groups, the respondents that had experience of more than 11 years (28.3%) had most participants, while the group that had been working for the company between 7 to 10 years (11.32%) had least respondents.

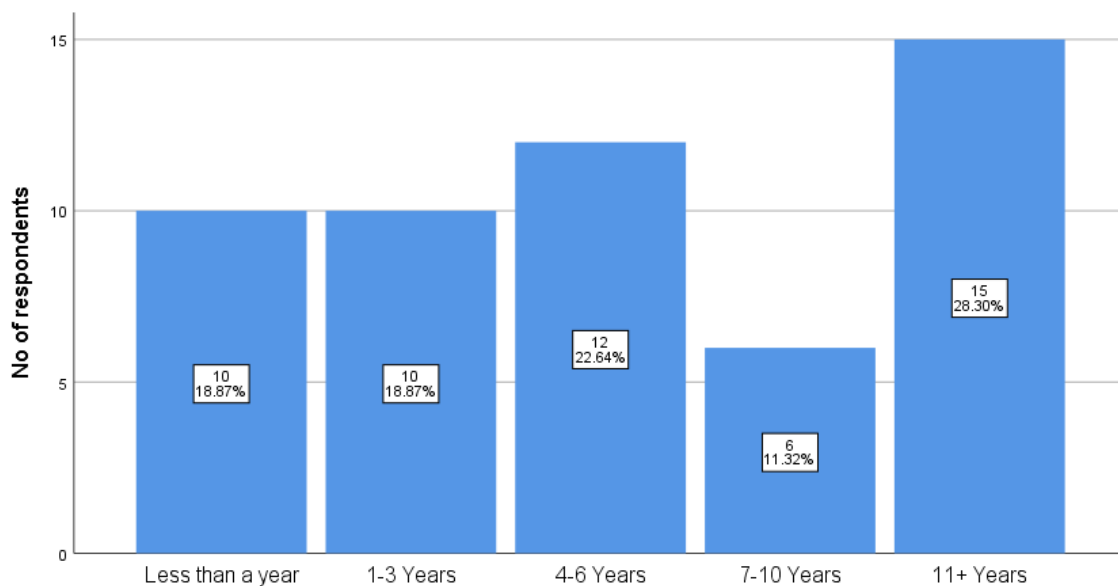


Figure 4. 1 : The number of years each participant has worked for the company

4.4.1 Age

Figure 4.2 is showing the age profile of respondents who work at BATA. Most respondents were between the age of 30 to 39 (39.62%) followed by respondents who were between the age of 18 and 29 (26.42%). For the age profiles above 40 the number of respondents decrease sharply with 13 (24.53%) respondents, for age profile 40 to 49 followed by 4 (7.55%) participants with the age of 50 to 59 and lastly only 1 (1.89%) person was found to have 60 or more years. It was noticeable that the participants were dominated by individuals who were experienced through age between the ages of 30 to 49 (64.15%).

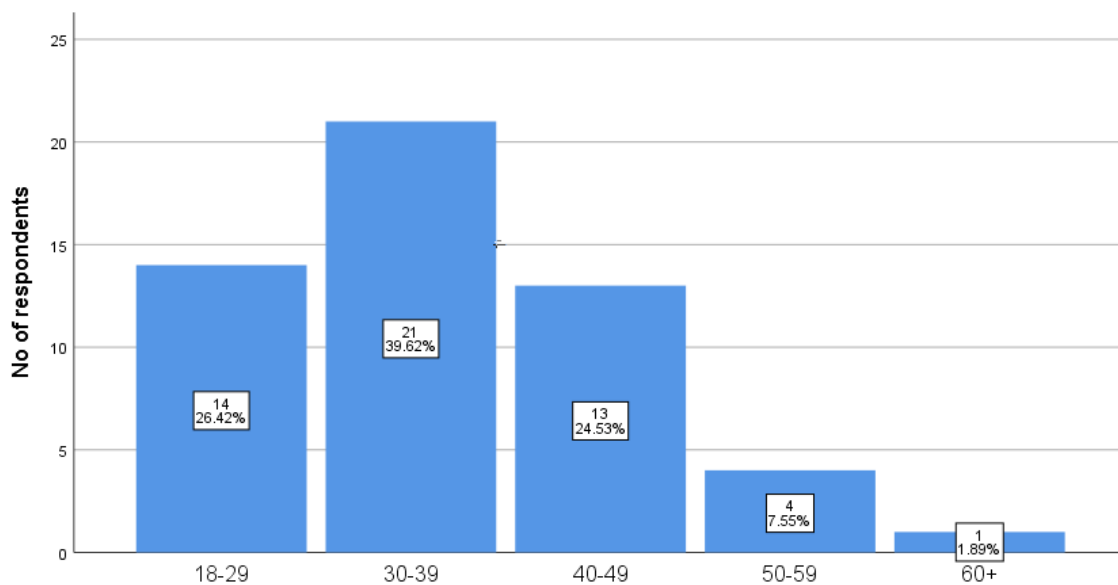


Figure 4. 2: Age profile of respondent

4.4.2 Departmental Representation

Figure 4.3 is depicting the departments that respondents worked in. Many departments were represented in the data collected with the finance department having the most participants (30.19%) followed by IT (16.98%), marketing (13.21%) and warehousing (11.32%). The accounting (5.66%), Production (5.66%), Purchasing (5.66%) had the same representation followed by Retail (3.77%) and engineering (1.89%) having the least representation. The respondents were, therefore, dominated by the finance and IT department 47.17%.

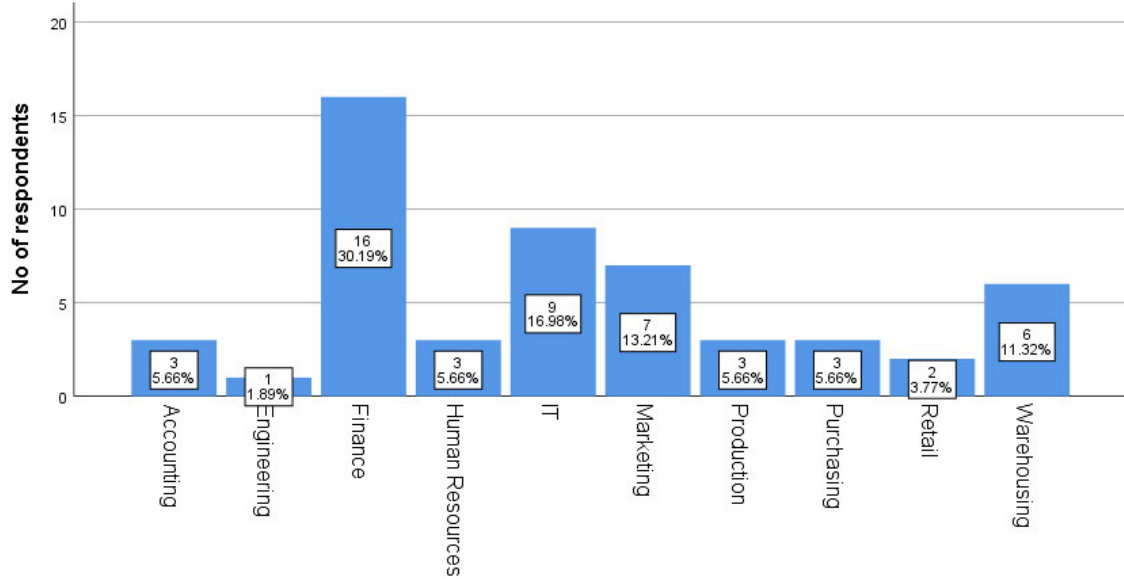


Figure 4. 3: Work departments of respondents

4.4.3 Gender

The gender profile represented in figure 4.4 showed that respondents were made of almost the same proportion from male (50.94%) and female (49.06%). The number of males who participated only had 1 more participant (27) above those represented by females (26).

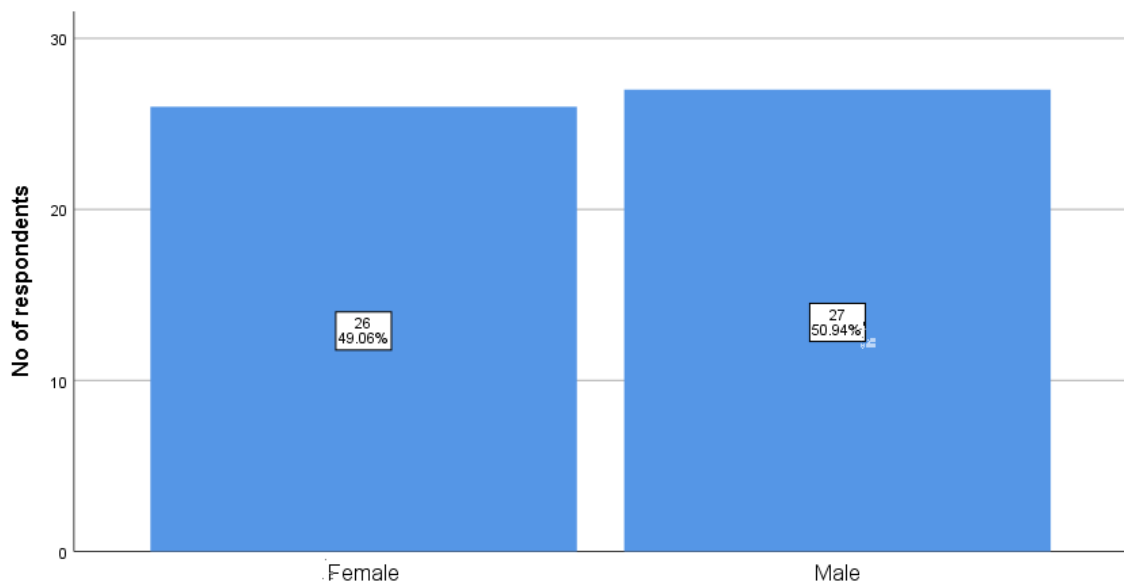


Figure 4. 4: Gender profile of respondents

4.4.4 Qualifications

In Figure 4.5 the graph is demonstrating graphically the education profile of respondents. It is clearly evident that most respondents were in possession of a diploma (32.09%) followed by those who had a certificate (28.3%). The lowest education profiles represented were those with a degree (15.09%) and postgraduate degree (3.77%) with only 1 having a higher certificate (1.89%). The respondents that had the qualifications of a diploma and below were represented by a high proportion of 81.14%. This expressed the need for more academic development in the organisation.

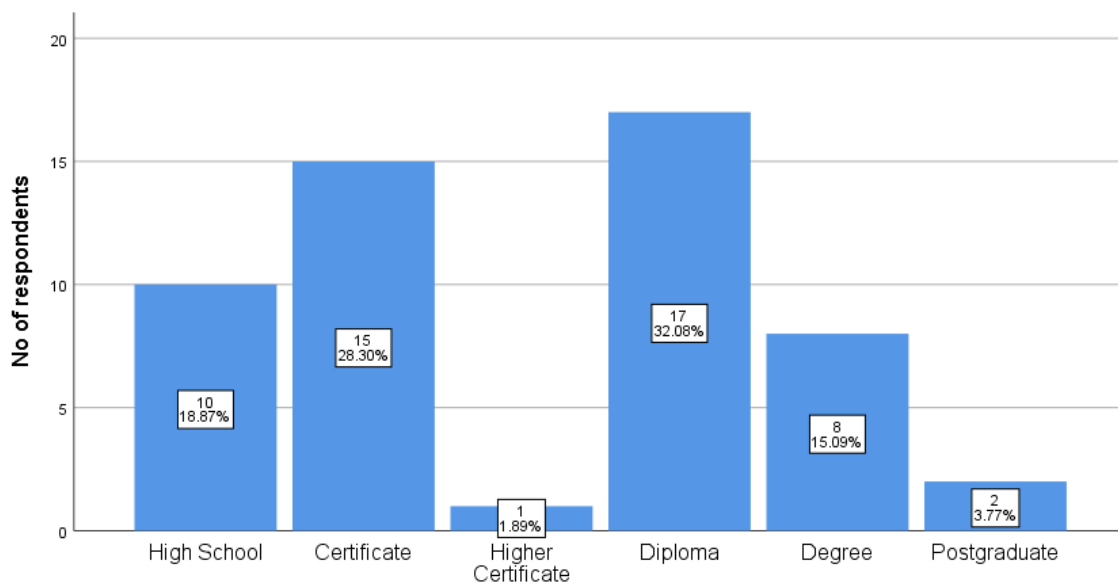


Figure 4. 5: Education profile for respondents

4.4.5 Employee Level

The work level profile of respondents can be seen from figure 4.6 below. We can see from the bar chart that the least representation is from participants who were interns (.377%) and middle management (5.66%). According to the bar chart most representation of participants were on the temporary level (33.96%) followed by senior subordinate (30.19%) and junior subordinate (26.42%).

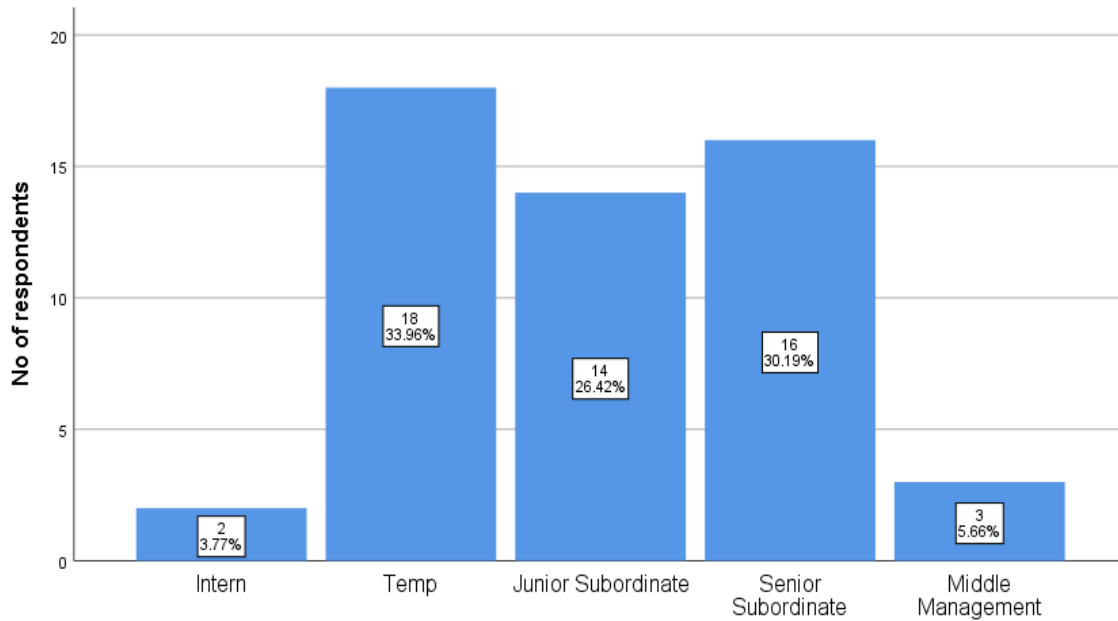


Figure 4. 6: Work level profile for respondents

4.5 Descriptive data analysis of responses

The graphical data analysis was conducted to provide more clarity and guidance for statistical data analysis. To do this analysis, each questionnaire construct was analysed through a stacked bar chart. In this section, 4 constructs were measured using a group of questions for each. The measured constructs were expected general benefits of using ERP systems perceived, challenges experienced when using ERP systems, actual benefits derived when using ERP system, and user satisfaction experienced when using ERP system. Each question is measured using the Likert scale with the following options: strongly agree, agree, neutral, disagree, and strongly disagree.

Each respondent was requested to indicate the extent to which they agree or disagree with each question presented. For each question a bar is represented in the chart. It shows the number of respondent who selected certain options on the questionnaire. The average percentage per construct will refer to the total sum of percentages in each question of a specific answer divided by the number of the items or questions used to measure the construct. This will be represented by the top bar on each stacked bar chart labeled 'Average'.

4.5.1 Expected general benefits of using ERP systems

To identify the perceptions of ERP system users towards the general benefits that they expected from using an ERP system, ERP users at BATA were given 7 questions which were aimed at measuring their perceptions on general expected benefits. The results of collecting data with the intention to measure these perceptions are depicted in figure 4.7.

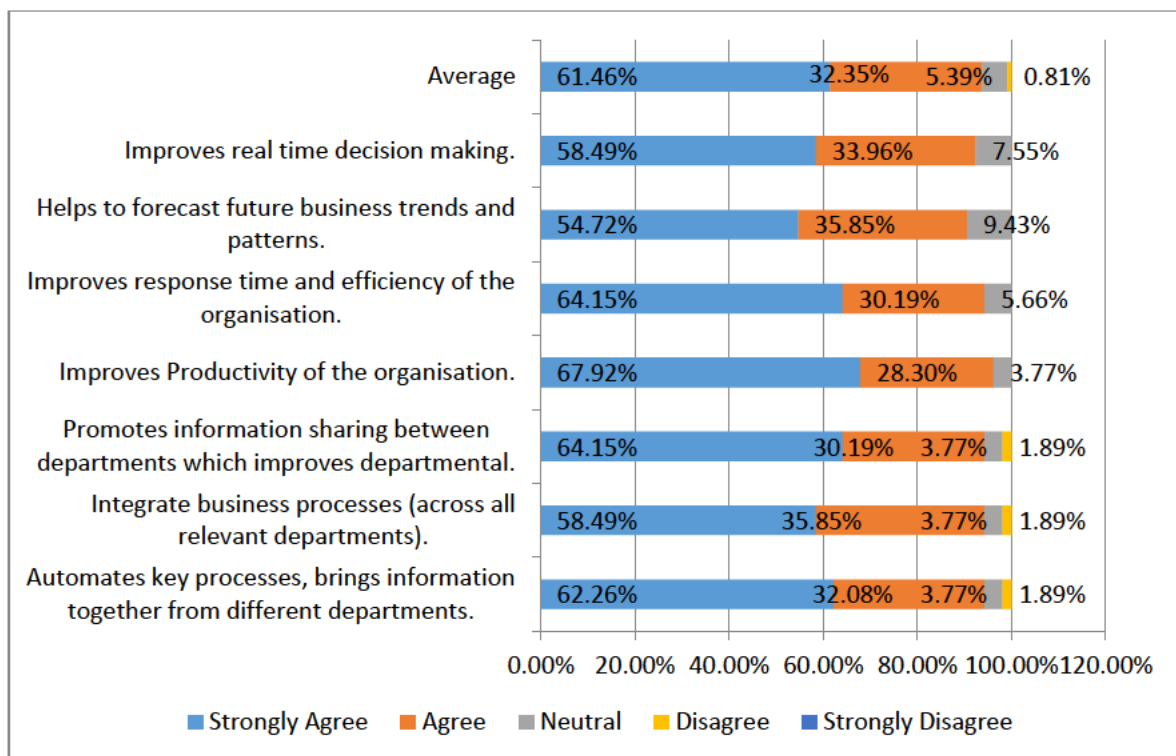


Figure 4. 7: General expected benefits of using an ERP system

It can clearly be seen from the stacked bar chart in figure 4.7 that most respondents indicated a perception to strongly agree that any ERP system should offer general benefits presented in the questionnaire. On average 61.46% indicated to strongly agree that all 7 benefits were generally expected from any ERP system. The number of respondents who indicated to agree that these benefits were expected from an ERP system was an average percentage of 32.35%. The respondents that felt that the ERP system should be beneficial in general (indicated strongly agree and agree) were a combined average percentage of 93.80% among the 7 general benefits presented in the questionnaire section.

These results indicated a high expectation presence at BATA in general. According to Teittinen et al. (2013) managers are most likely to have high expectations. This is supported also by the results that were produced through this study. All managers who

participated also scored with an extent to strongly agree that all the 7 general benefits presented in the questionnaire were expected to be delivered by any ERP system. While managers had high expectations, the average score of general expectations for their senior subordinates was an indication of agreement. This was interpreted as low expectations in this research and it is in line with the findings of Shan et al. (2014) who discovered that expectations differ between different employee work levels.

The benefit of productivity had the highest score with 36 (67.92%) respondents who indicated with strongly agree that ERP systems should improve the productivity of the organisation. Therefore, ERP system designers are encouraged to ensure that their ERP system is made with a strong focus to improve the productivity of the business. Bologna and Lupu (2014) also emphasised the importance of increasing productivity in a software developing company when designing ERP systems. This is in line with the findings from Powell et al. (2013) who investigated ERP systems and lean production and discovered that ERP systems can be used as a catalyst in lean manufacturing industries. Nadiah Zamre (2015) also expresses his view that ERP systems should increase productivity and efficiency and maintain high performance.

It was noticeable that on average only 6.20% were neutral. This could have been implying that they were not sure or did not understand how the ERP systems should benefit the organisations. Also there was only 1 respondent who indicated to disagree, that in general ERP systems offered benefits to the organisation; however, this participant seems to have disagreed on only 3 out of 7 benefits. This implies that this respondent's score measuring how much they felt that the ERP system should benefit the business was 57% (4 out of 7). As a result the conclusion can be made firmly that the entire sample expected general benefits from any ERP system.

4.5.2 Challenges experienced when using ERP system

Among the objectives of the research project was to identify the challenges experienced by users in ERP system adoption. To achieve this, respondents were asked regarding their perceptions on challenges they face when they are using the ERP system at BATA. The responses are shown graphically by the stacked bar chart in figure 4.8, which displays the number of respondents who selected a rating score per challenge experienced at BATA when using the ERP system.

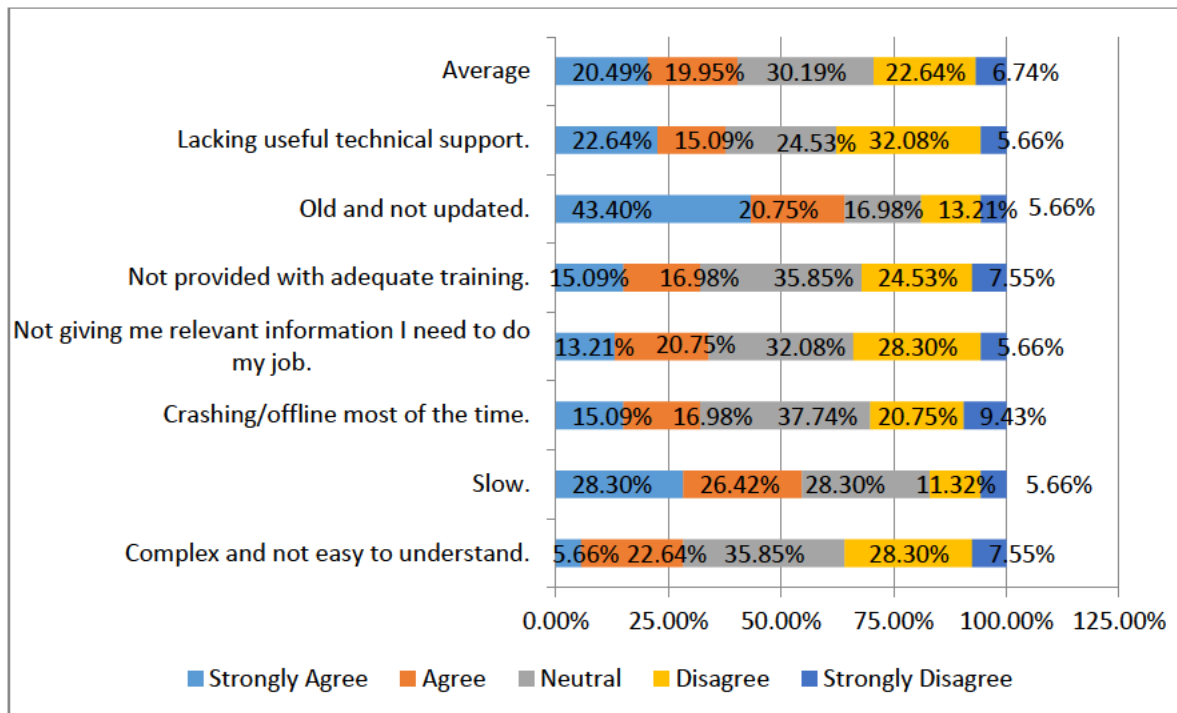


Figure 4. 8: Challenges of using ERP system

The challenge construct for respondents who indicated to strongly agree that the ERP system was challenging to use was measured to be an average of 20.49% and for respondents who indicated to agree that it was challenging to use was 19.95 %. Therefore, 40.43% of the respondents felt that the ERP system was challenging to use. The respondents who selected the neutral option regarding the challenges encountered while using the ERP system were an average of 30.19% which is high compared to the respondents who indicate to be neutral on their perception with regards to expected general benefits of using ERP system. This increase was expected because it is generally harder to criticise the system. However, it was not expected at such a high rate. This could mean that a significant number of users at BATA did not feel free to critically analyse the ERP system with regards to the challenges experienced.

There were respondents who felt that the ERP system was not challenging to use. These were made up of an average of 22.64% who selected the option disagree when asked for the extent of their perception of whether the ERP system was challenging to use. An average 6.74% of the respondents indicated to strongly disagree that the system was challenging to use. As a result an average of 29.38% felt that the ERP system was not challenging to use. It was noticeable that the respondents who felt that the ERP system was very easy to use (strongly disagree that it was challenging) had an average work experience

of 3 years as compared to the respondents who felt that the ERP system was very challenging (strongly agree) to use who had an average work experience of just 1 year. This finding shows that employees with more work experience within the company had overcome the challenges of the ERP system.

It is, therefore, concluded that the ERP system used at BATA is challenging to use because there was an average of 40.43% of respondents who believed so as compared to the 29.38% who felt the ERP system was easy to use. In line with this, Maier et al. (2015) also discovered similar results when they conducted a research assessing the ERP system in 2 business companies. Their results also suggested that ERP systems are challenging to use. Also Saatçioğlu (2009) found that the ERP system used was challenging; however, they were comparing it to an older system, this is not the case in the study presented here. Many of the respondents (43%) believed strongly (strongly agree) that the ERP system was old and not updated while 21% perceived the same (agree) by agreeing on the same challenge they were facing, this challenge accumulated 64% in total, and therefore it contributed the most towards the ERP system being challenging to use. Some of the causes for updated ERP systems in such competitive and demanding business environment could attribute to budgetary constraints (AL-Ghamdi, 2013).

The question that scored the least for a challenge factor contributing to the ERP system being difficult to use was that of it being complex and not easy to use. This challenge factor was identified by 28.3% of the respondents as contributing to the ERP system being challenging to use. There were no significant differences in the challenges perceived by old employees as compared to younger employees. Employees between the age of 18 and 39 had an average score of 3.23 implying that ERP system was perceived to be challenging and employees who were older than 39 who had an average score of 3.25 where the score of 1 indicated that the ERP system was most unchallenging to use and 5 meant the system was very challenging to use. These results are contradictive to those of Maier et al. (2015) who reported that employees who are older were significantly experiencing the ERP system to be challenging to use as compared to younger employees.

It was notable that the challenge factor of the ERP system lacking useful technical support contributing to it being challenging to use had most respondents who did not believe so. These respondents were 37.74% of the sample. This implied that regardless of the outdated and old system; however, the support that was provided was not as challenging. Therefore,

users complained about the ERP as compared to the support that came with it. Such case could be as a result of limited resource that IT managers face (Shan et al., 2014). They can end up not being able to update their ERP systems because of budgetary constraints and other limitations. These limitations could include change management which could be costly (AL-Ghamdi, 2013).

4.5.3 Derived benefits and Expected general benefits

4.5.3.1 Actual benefits derived when using the ERP system

The perception of respondents with regards to actual benefits that were derived from the ERP system at BATA had to be measured. The stacked bar chart in figure 4.9 presents the perception of respondents graphically. For each question that was aimed at measuring the construct of actual benefits perceived by respondents, it shows the number of respondents between those who strongly perceived that the ERP system was beneficial and to those who felt to strongly disagree that it was beneficial at all.

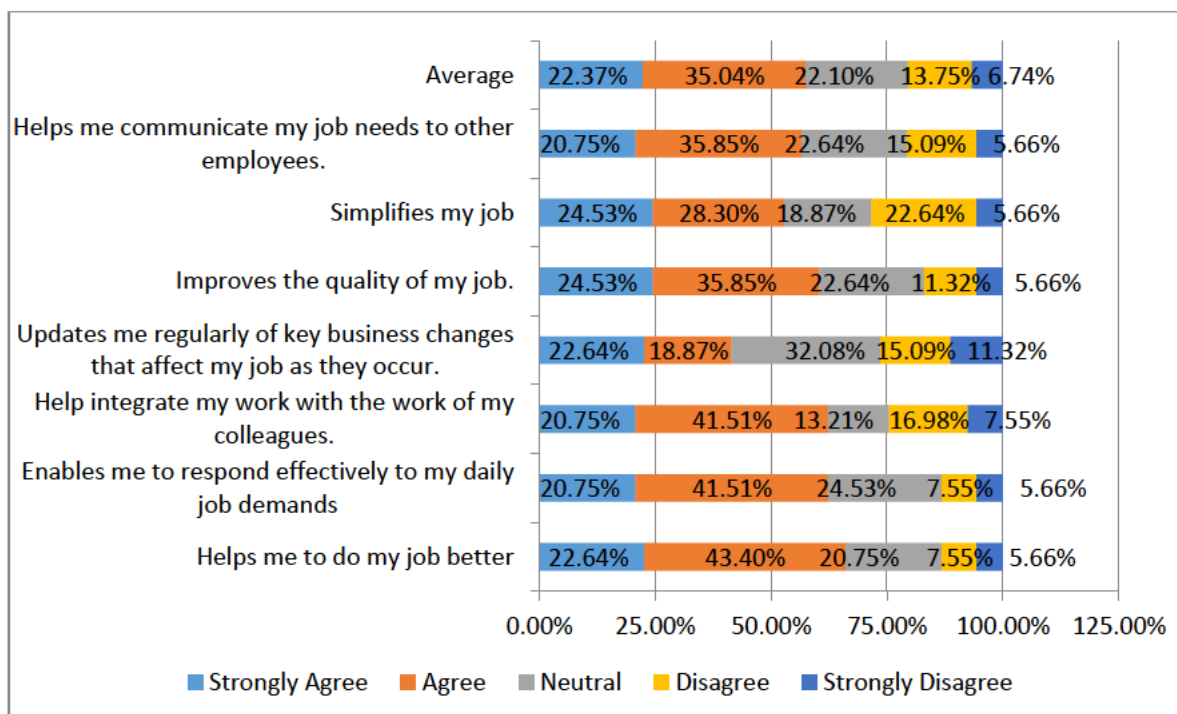


Figure 4. 9: Actual benefits of using ERP system

The results on figure 4.9 show that an average of 22% of the respondents perceived that the ERP system they used at BATA was very beneficial (strongly agreed) and an average of 35% indicated by agreeing (agree) that the ERP system was beneficial. This resulted into

57% of respondents in total who perceived that the ERP system was beneficial. These findings showed that ERP systems are beneficial and in line with the findings of Slabbert et al. (2016) who empirically showed that ERP systems are beneficial. Their study investigated the presence of ERP benefits in a big organisation that had a lot of challenges. Although they discovered that some benefits were not attained; however, there was a significant amount of benefits attained. Other studies that produced results of that ERP systems are beneficial includes that of Almahamid and Awsi (2015) and Sadrzadehrafiei et al. (2013).

However, an average of 22% was neutral which could mean that they were not sure that the system was beneficial or they did not feel free to judge each benefit that was being measured per question. This group was smaller compared to the 30.19% respondents who indicated with neutral in the previous section (4.5.2). The users who did not indicate to agree (disagree) that they benefited from the ERP system were an average of 14% and those who perceived to strongly disagree that the ERP system was non beneficial were an average of 7% as a result the total of 20% users perceived that the ERP system at BATA was not benefiting them on any of the benefits which each question focused on in the questionnaire.

The benefit that respondents perceived to mostly be derived from the ERP system at BATA was that it helped them do their job better, it had 23% of respondents who indicated to strongly agree and 43% who indicated to agree. These results were also noticed by Slabbert et al. (2016) when they realized that all the respondents who participated in their research indicated improvement in their job as the benefit that they attained. However, Teittinen et al. (2013) findings did not support these findings, they discovered that the introduction of ERP systems made employees to fear that they will lose their jobs as they will be taken by the automation capabilities thereof. Also Teittinen et al. (2013) results showed that ERP system added more responsibilities to users jobs as they now had to validate the errors on the system. ERP system users were burdened by fixing incorrect data on the system as it was frustrating and time consuming.

The benefit that was perceived to have the least derivation from the ERP system at BATA was that of respondents being updated by the ERP system regularly of key business - changes that affected their jobs. The users were benefiting from the real time reporting from the ERP system; however, these benefits were minor. The enhancement of ERP

systems to produce real time reporting is very expensive (Slabbert et al., 2016). This is unsurprising provided that the ERP system at BATA was very outdated as reported in the previous section (4.5.2). It is, therefore, obvious that it will lack quality in real time reporting. This claim is supported, therefore, by this finding. Teittinen et al. (2013) results also showed that the ERP system failed to produce a real time data as the implementation project intended.

The benefit that respondents felt the ERP system at BATA was not offering, was that of simplifying their job, about 28% of respondents felt that it did not simplify their job. Although the ERP system was discovered to be easy to use by 19 respondents compared to only 15 who believed it was difficult to use. The ERP system was found to have not contributed to the simplification of user's job. Same results were obtained by Teittinen et al. (2013), they discovered that users had difficulties capturing data into the ERP system. Badewi et al. (2017) study also produced the results that implied the ERP system made users job difficult. However, Badewi et al. (2017) believed that this was a result of not planning properly of how to use ERP system after it was implemented.

4.5.3.2 Expected general benefits perceived and actual benefits derived

A stacked bar chart was created to graphically analyse the interaction between the perceptions of benefits generally expected and benefits actually derived from using the ERP system. The chart displayed in figure 4.10 shows the perceptions of actual benefits derived between 4 groups identified by the categories of perceptions on expected general benefits.

The 4 groups were made of the group who had high positive general expectations (indicated to strongly agree that they expected the general benefit), low positive general expectations (agree), no general expectations (neutral), and those who had low negative general expectations (disagree). There were no respondents who indicated high negative general expectations (strongly disagree). For each group the graph depicts the perceptions of actual benefits derived by a specific number of respondents.

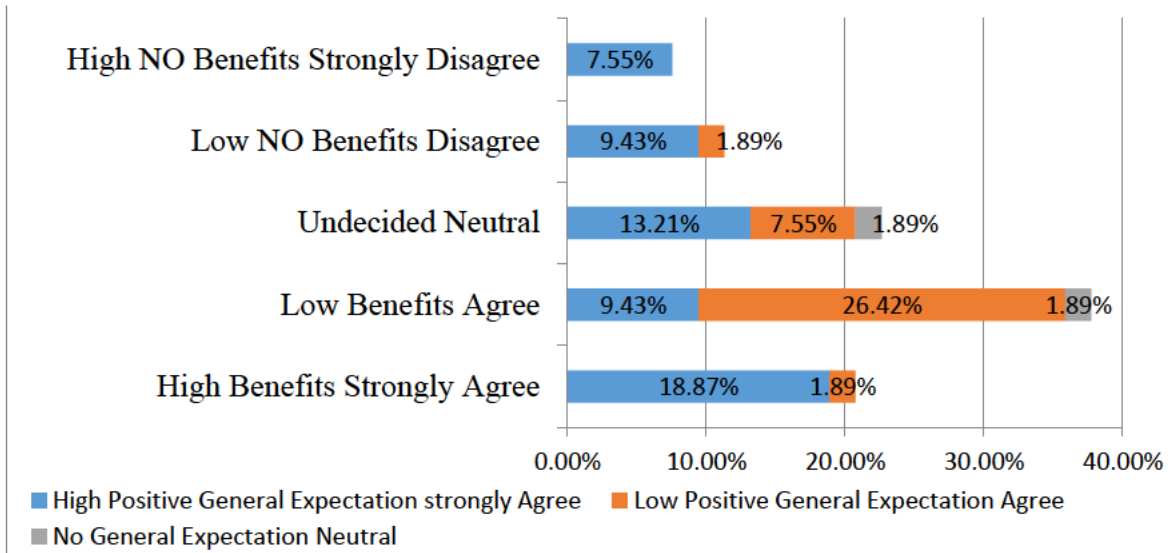


Figure 4. 10: General expectations perceived and actual benefits derived

The group of respondents who had high positive expectations also had most of their participants (18.87%) perceiving high benefits derivation (strongly agree) and only 9.43% who perceived low benefits derivation (agree) of using the ERP system. Therefore, it was notable that among the participants who had high expectation, 28.3% also perceived that they were generally benefiting from using the ERP system. The proportion of 13.21% of the group of high expectations respondents were neutral and only 7.55% strongly disagreed that they were benefiting from using the ERP system. ERP system users who had high expectation also were highly benefiting from using it.

Another group which were of those who had low positive general expectations (37.4%) had most of these participants perceiving low benefits (26.42%), only 7.54% were undecided (neutral) if they benefited from using the ERP system and only 1.89% perceived high benefits and the same percentage perceived the absent of benefits. Low expecting users also had low benefits from using ERP system. These findings agree with those of Mitakos et al. (2010) and Teittinen et al. (2013); they discovered that as user expectation become high also the benefits will increase. This implied also that if the user expectation became low; therefore, the benefits will also become low.

4.5.4 User satisfaction and Expected general benefits

4.5.4.1 User satisfaction experience when using ERP system

The question of how each user was satisfied regarding the use of the ERP system at BATA was assessed in the questionnaire. This question was answered through collecting data on the level of satisfaction each respondent felt they had regarding the information produced, the quality of the system and the support that was provided with the ERP system. This can be seen on the stacked bar chart in figure 4.11.

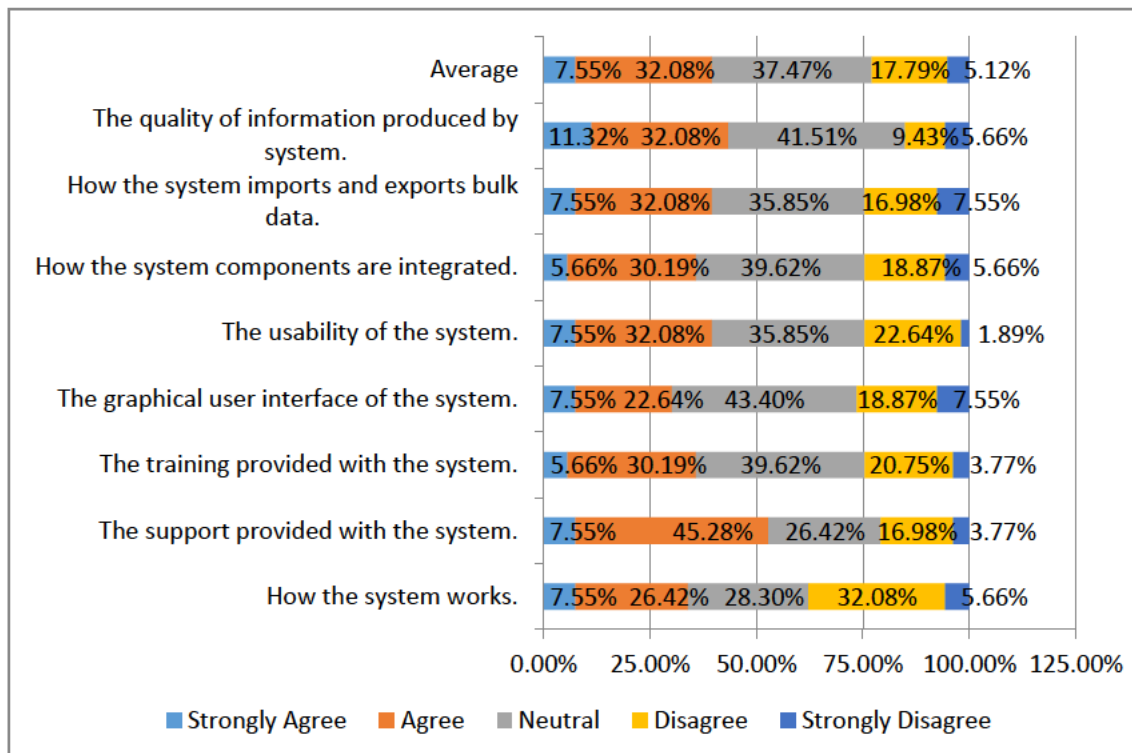


Figure 4. 11: User satisfaction of using ERP system

Only an average of 7.55% of the respondents indicated to strongly agree that they were satisfied with using the ERP system. However, an average of 32.08% indicated to agree that they were satisfied with using it. Therefore, a total average of 39.63% had indicated that they were satisfied with the ERP system they used at BATA. This indicated some satisfaction but it low as compared to entire sample or to the amount of respondents who indicated that they were benefiting from the ERP system used. These users (39.63%) also had an average of low expectation of general benefits, low benefits and low perception of challenges that came with the ERP system used. Low user satisfaction can be caused by different factors, it can be as a result of complexity (Kanchymalay et al., 2013) lack of IT

support, lack of skills (Shan et al., 2014) and bad communication (Al-Jabri, 2015). It was notable respondents in this group had indicated agree and strongly agree that ERP systems were expected to provide general benefits.

A notable higher rate of an average of 37.47% of respondents did not choose if they were satisfied or not by indicating to be neutral related to the factors of satisfaction they were queried on. It is notable that a high neutral indication of perception is prevalent when respondents were presented with questions that were critically evaluating certain aspects of organization. This claim is supported by the high (30.19%) neutral indication rate when the ERP system was assessed for challenges. This indicates that these respondents may have perceived that the ERP system was not satisfactory and challenging but they did not feel free to express their perceptions. Similar to the findings of Murray et al. (2013) who obtained a high neutral response rate in their results. However, different from the results of the study they found that these responses were mostly detected among plant managers and production supervisors. In the results of this study only 1 respondent was working in the production department who was found to have indicated neutral perception on their satisfaction.

The percentage of respondents that indicated they disagree that they were satisfied with using the ERP system were an average of 17.79% and 5.12% for those who felt they were dissatisfied by indicating with strongly disagree that they were satisfied. The accumulated average of 22.91% of respondents who indicated dissatisfaction was not high. These results were contrasted with those of low satisfaction due to the high neutral rate of answers from the questionnaire. It can be concluded, therefore, that the ERP system at BATA did have good user satisfaction results. Most respondents (37.74%) also expressed that they were very dissatisfied with how the system worked and the satisfaction factor pointing to quality of information produced by the system had the least (15.09%) of respondent disagreeing that they were satisfied

The graphical user interface of the ERP system at BATA had the least respondents (30%) who felt they were satisfied with it. The respondents were mostly (52.83%) satisfied with the support that came with the system as compared to the total of other satisfaction factors provided in the questionnaire. The support provided with the ERP system comprises the service quality thereof. Kadir et al. (2015) identified service quality as the most important factor that contributes to the success of ERP systems.

4.5.4.2 Expected general benefits perceived and user satisfaction experienced

The investigation was conducted with the intention of identifying the relationship between general expected benefits and user satisfaction of using ERP system at Bata. A stacked bar chart is represented in figure 4.12. The graph groups respondents with regard to the extent of their agreement of how much expectation they had with regards to the general benefits that were expected to be offered by any ERP system. The groups are described in detail on the previous section (section 4.5.3.2). For each group the graph depicts the perceptions of user satisfaction experienced by a specific number of respondents.

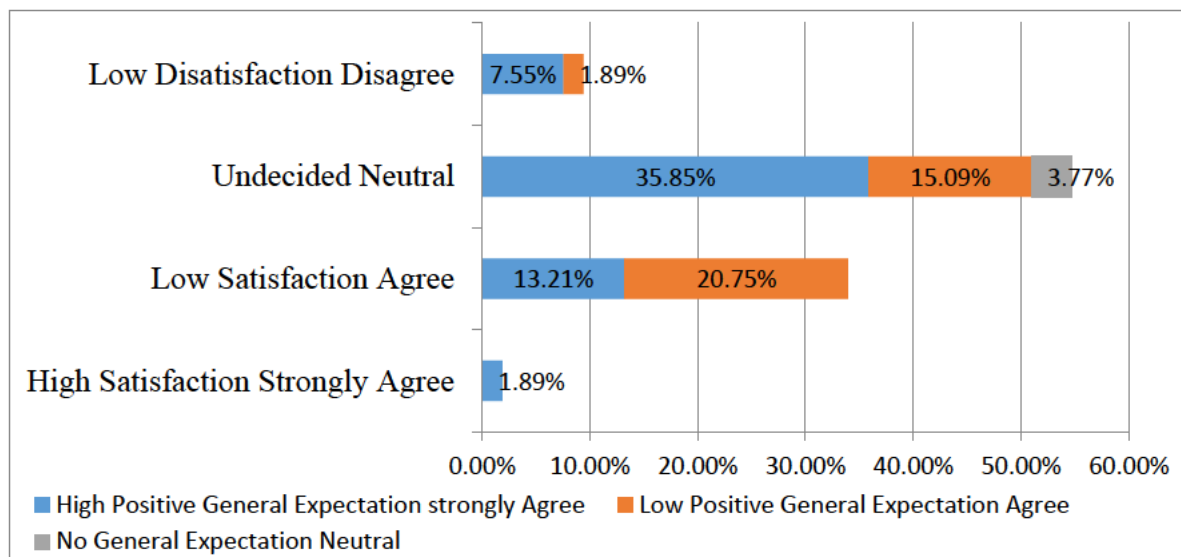


Figure 4. 12: General expectations and user satisfaction

The majority of respondents who indicated to strongly agree (high positive expectations) to expect general benefits (58.49%) from any ERP system were not able to indicate (neutral) if they were satisfied with the ERP system they used at BATA. Out of 31 (58.49%) of these respondents, the total of 19 (35.85%) respondents were neutral regarding the extent of their satisfaction with the ERP system they used. Vaezi et al. (2016) conducted a historical study on user satisfaction in IT. They discovered that users with high expectations will not be satisfied if those expectations are not met. Although many respondents were neutral in their indication, it could have meant that they were not satisfied and they were restrained from expressing themselves. Most dependents in this group (58.49%) were satisfied (strongly agree and agree) with the system (15.09%) as compared to 7.55% who indicated low dissatisfaction (Disagree) with the ERP system. It can, therefore, be concluded that user with high expectation were found to be satisfied also

with ERP system used. These results are supported by that of Mitakos et al. (2010) whom claimed that the more users expect also the more they will be satisfied. However, they not supported by Teittinen et al. (2013) results which implied that high expectations will result into lower satisfaction.

Another noticeable group consist of the dependents who indicated they had low positive expectations. This group were comprised of 37.74% of the respondents. The majority (20.75%) had selected their extent of agreement that they were satisfied with the ERP system used while 15.09% were neutral and only 1.89% had low dissatisfaction (disagree). This group had a very low neutral rate response compared to the previous group with high positive expectation. They also had a high satisfaction rate compared to this group. These results are in line with that of Teittinen et al. (2013), who claimed that users with lower expectations will have a higher satisfaction rate. The smallest group (3.77%) were those who indicated they were neutral with regards to the expectations perceived on general benefits and there were no respondents who indicated they had low negative general expectation. This group of respondents did not expect or indicate their level of satisfaction. They are more likely to have decided not to take part in answering the questions.

4.6 Exploratory factor analysis

To perform descriptive non-parametric statistical analysis the variables had to be reduced to 3 latent variables. The variables were classified into an independent variable for the construct of general expected benefits, and 2 dependent latent variables which had the construct of actual benefits derived and user satisfaction derived by each respondent using the ERP system at BATA.

The model had to be tested if it was suitable for the data, the KMO and Bartlett's Test was used and the results are displayed in table 4.3. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.708 which is good measure. The result of the Bartlett's Test of Sphericity were also significant as it was less than 0.01 indicating that there were sufficient relationships between the variables as a result the exploratory factor analysis could be conducted.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.708
--	-------

Bartlett's Test of Sphericity	Approx. Chi-Square	1415.751
	df	231
	Sig.	0.000

Table 4. 3: KMO and Bartlett's Test

The eigenvalues for linear components are displayed in table 4.4 before extraction and after rotation and extraction. Before extraction there were 22 linear components contained in the data collected. Initially the first factor represented 46.9% of the variance explained by the linear component. The other 2 linear components had an eigenvalue greater than 1 as a result the linear factors were extracted and they explained the variance of 34.808%. All the 3 factors before extraction explained 81.707% of the variance and were extracted as a result there were only had 3 factors extracted. The remaining 19 factors explained the total variance of 18.293% and all had eigenvalues less than 1 as a result these factors were not extracted.

To produce an optimised factor structure the extracted factors had to be rotated and their eigenvalues changed. The ration sum of squared loading show how the relative importance of the extracted factors was equalized with the factor that represented most of the variance explaining 29.605% which is significantly small from the initial 46.9%. However, the second factor explained 24.894 of the variance while the third factor explained 24.492% as compared to the initial 9.311%.

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.318	46.9	46.9	10.12	46.001	46.001	6.513	29.605	29.605
2	5.609	25.497	72.397	5.395	24.523	70.524	5.477	24.894	54.5
3	2.048	9.311	81.707	1.863	8.468	78.992	5.388	24.492	78.992

4	0.55	2.5	84.207						
5	0.477	2.168	86.375						

Table 4. 4: Total Variance Explained

Figure 4.13 shows the scree plot confirming the factor number and the extracted factor. The inflexion point is clearly visible after 3 factors which had eigenvalues greater than 1.

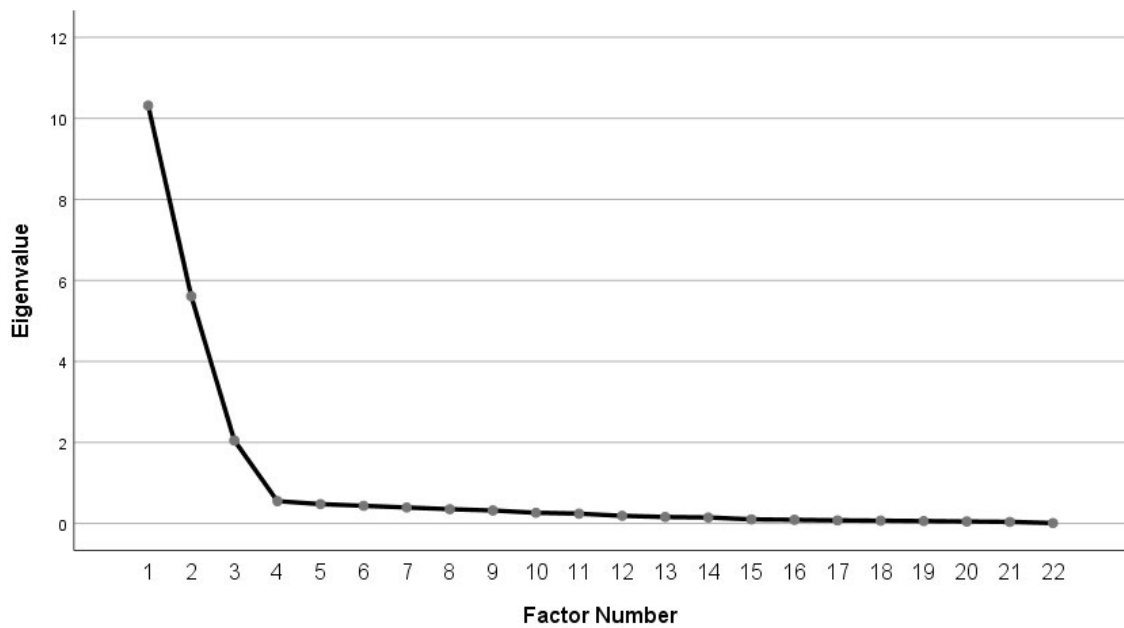


Figure 4. 13: Scree Plot

Table 4.5 shows communalities before and after extraction. The initial communalities were very high, having an average 88.7% of the shared variance within the data structure. The proportion of the variance explained by the factors underlying decreased to 79% due to the information lost after extraction; however, this was still significantly high confirming that the Kaiser’s criterion used was accurate since the variables were also less than 30.

	Initial	Extraction
G_exp_1	0.921	0.757
G_exp_2	0.883	0.735
G_exp_3	0.910	0.813

G_exp_4	0.954	0.861
G_exp_5	0.949	0.836
G_exp_6	0.889	0.700
G_exp_7	0.879	0.773
Act_ben_1	0.929	0.880
Act_ben_2	0.953	0.888
Act_ben_3	0.947	0.929
Act_ben_4	0.923	0.731
Act_ben_5	0.921	0.913
Act_ben_6	0.946	0.833
Act_ben_7	0.902	0.853
Satisfaction_1	0.711	0.629
Satisfaction_2	0.758	0.585
Satisfaction_3	0.828	0.736
Satisfaction_4	0.873	0.761
Satisfaction_5	0.878	0.858
Satisfaction_6	0.850	0.766
Satisfaction_7	0.916	0.816
Satisfaction_8	0.799	0.724

Table 4. 5: Communalities

The loading of each variable per factor is shown in table 4.6 which is displaying the factor matrix. The loadings less than 0.4 were suppressed as a result they were not displayed in table 4.6.

	Factor		
	1	2	3
Act_ben_3	0.908		
Act_ben_2	0.903		
Act_ben_5	0.872		
Act_ben_1	0.869		
Act_ben_7	0.839		
Act_ben_6	0.832		
Satisfaction_4	0.815		
Satisfaction_7	0.810		
Satisfaction_6	0.795		
Satisfaction_3	0.790		
Satisfaction_1	0.783		
Act_ben_4	0.781		
Satisfaction_2	0.740		
Satisfaction_5	0.722		0.551
Satisfaction_8	0.721		0.449
G_exp_4		0.911	
G_exp_5		0.886	
G_exp_3		0.877	
G_exp_7		0.863	
G_exp_1		0.857	

G_exp_2		0.840	
G_exp_6		0.815	

Table 4. 6: Factor Matrix

Represented in table 4.7 is the rotated factor matrix. Most variable had loaded highly on the first factor before rotation, this show in table 4.5 with only 2 variables loading on the third factor. However, after 5 iterations the rotated component matrix shows fewer variables loaded onto factor 1. The variables which were aimed on collecting data on expected benefits loaded clearly on factor 2 before and after the rotation while the variables which were aimed at collecting data for user satisfaction initially loaded on factor 1 most of them. However, after the iteration they loaded on to factor 3 with 3 variables out of 8 having cross loading into factor 1. These were, however, small compared to those from factor 3.

	Factor		
	1	2	3
Act_ben_5	0.909		
Act_ben_3	0.893		
Act_ben_1	0.883		
Act_ben_7	0.875		
Act_ben_6	0.864		
Act_ben_2	0.853		
Act_ben_4	0.814		
G_exp_4		0.926	
G_exp_5		0.908	
G_exp_3		0.887	
G_exp_7		0.876	

G_exp_1		0.869	
G_exp_2		0.856	
G_exp_6		0.818	
Satisfaction_5			0.899
Satisfaction_7			0.831
Satisfaction_8			0.806
Satisfaction_6			0.796
Satisfaction_3			0.764
Satisfaction_4	0.426		0.762
Satisfaction_1	0.500		0.605
Satisfaction_2	0.514		0.561

Table 4. 7: Rotated Factor Matrix

The exploratory factor analysis highly confirmed the dimensionality and the validity of the questions used the questionnaire as a result non parametric descriptive statistics could then be conducted. The variables and the 3 chosen constructs were, therefore, meaningful.

4.7 Chi-square test

4.7.1 General expected benefits and user satisfaction

Table 4.8 shows the results of the chi-square test of independency between the expectations of general benefits from an ERP system and user satisfaction. The p values was greater than 0.05 ($X^2 = 7.965$, $p = 0.241$) and was, therefore, greater than the chosen significant level ($p = 0.05$).

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.965 ^a	6	0.241

Likelihood Ratio	8.910	6	0.179
Linear-by-Linear Association	1.372	1	0.241
N of Valid Cases	53		

Table 4. 8: Chi-Square Tests between general expected benefits and user satisfaction

The null hypothesis was not rejected, and therefore the conclusion is made that there is no significant evidence of the relationship between the expectations of general benefits from an ERP system and the satisfaction that respondents perceived from using it. These results imply that there is no relationship between the variables. This implies that the general expectations that users had on ERP systems did not affect their perception on their satisfaction. This finding is not in line with that of Teittinen et al. (2013) who believe that over expectation result into underestimation of the actual outcomes. It found through these results that higher expectant users did not underestimate the actual outcome of the ERP system as compared to lower expectant users. Also Mitakos et al. (2010) findings contradict the result for this study, they declared that the more users expect from the ERP system will result into them being more satisfied.

4.7.2 General expected benefits and actual benefits derived

The association between general expected benefits from an ERP system and the actual benefits of using it was tested through chi-square test. The results of the test are shown in table 4.9.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.342 ^a	8	0.013
Likelihood Ratio	22.087	8	0.005
Linear-by-Linear Association	0.796	1	0.372
N of Valid Cases	53		

Table 4. 9: Chi-Square Tests between general expected benefits and actual benefits

The null hypothesis was rejected ($p < 0.05$) as the value of the statistic was 19.342 with a probability of 0.013. There is, therefore, a relationship between the expectations of general benefits from an ERP system and the actual benefit derived from using it. These findings are in line with the findings of Mitakos et al. (2010) and Teittinen et al. (2013). The users who expect more will perceive to benefit more also.

4.8 Spearman's Rank Correlation Coefficient

Table 4.10 shows the results of running the Spearman's Rank correlation coefficient to determine the relationship between the perceptions of generally expected benefits with user satisfaction and actual benefits derived from using an ERP system.

			g_exp_benefits	satisfaction	actual_benefits
Spearman's rho	g_exp_benefits	Correlation Coefficient	1.000	-0.217	-0.073
		Sig. (2-tailed)		0.118	0.605
		N	53	53	53
	satisfaction	Correlation Coefficient	-0.217	1.000	.451 ^{**}
		Sig. (2-tailed)	0.118		0.001
		N	53	53	53
	actual_benefits	Correlation Coefficient	-0.073	.451 ^{**}	1.000
		Sig. (2-tailed)	0.605	0.001	
		N	53	53	53
**. Correlation is significant at the 0.01 level (2-tailed).					

Table 4. 10: Correlations Matrix

The relationship between expected general benefits and user satisfaction was weak ($r_s = -0.217$, $n = 53$). The relationship between general expected benefits and actual benefits

derived was very weak ($r_s = -0.073$, $n = 53$). However a moderate and significant relationship between actual benefits derived and user satisfaction is noticeable. The DeLone and McLean IS success model (DeLone and McLean, 2003) is, therefore, supported by this finding. These findings are also complemented by those of Al-Jabri (2015) who discovered that ERP system benefits had an effect on user satisfaction; however, they believed that the effect was mediating one. They meant that ERP system benefits had a mediating effect between training and user satisfaction. Through the Spearman's Rank Correlation coefficient we, therefore, conclude that there is a relationship between expected benefits, user satisfaction and actual benefits. These findings are similar to those of Mitakos et al. (2010) and Teittinen et al. (2013) who produced evidence of the relationship between user expectations and user satisfaction.

4.9 Chapter summary

Firstly the data collection summary is looked at and shows that 53 participants out of 80 took part in the study. Demographic details were represented through bar charts. The stacked bar charts were then used to show that most respondents had high expectations. The expectation of productivity was highlighted by most respondents. The challenges experienced by respondents using ERP system shown through a stacked bar chart show that 40.43% of respondents feel they were challenged by using it. It was also found that the challenge that was identified by most respondents to have contributed the most was that ERP system was old and outdated. An average total of 57% of the respondents felt that they were benefiting from ERP system; however, the benefit that was identified by most respondents was that it helped them do their job better. The respondents who had high expectation also had high benefits; however, they more dissatisfied respondents compared to the respondents who had low expectation. The respondents who had low expectations had a high rate of low benefit experience with the ERP system; however, they also had very low rate of high benefits and low no benefit experience. Through the exploratory factor analysis technique and the Cronbach's alpha the measuring scale was validated and tested to be reliable. A Pearson chi-square test showed without doubt that the relationship between expected general benefits and actual benefits experienced was existence. There was also a relationship between actual benefits derived and user satisfaction and it was shown with significant level.

Chapter 5

Key findings from discussion and application of the model

5.1 Introduction

The results presented in chapter 4 are revealing through the chi-square test that there is significant evidence of the relationship between the expectations that ERP system users have on general benefits and the actual benefits they will derive from using it. In this chapter we discuss further the findings represented in chapter 4 and the application of the D&M IS success model.

5.2 Key findings

The data analysis and discussion is presented in chapter 4. In this section the key findings of the analysis are outlined.

A moderate relationship between the actual benefits derived from the ERP system and user satisfaction is confirmed to be significant through this study. The expectations of respondents at BATA are found to be positive. This is clearly visible because almost the entire sample had indicated to believe that general benefits should be offered by any ERP system. There are no negative expectations found to be indicated by any respondent except for one respondent out of 53. The managers are found to have high expectations compared to their subordinates. The benefit of productivity is found to be the one that is mostly expected to be offered by any ERP system.

The results indicate that the ERP system used at BATA is challenging to use by most users; however, almost the same number of users; they do not feel that they are challenged by it. A very low rate of respondents indicated that the ERP system is not very challenging to use which implies that most respondents who feel that the system is easy to use; however, they do not perceive highly the easiness of using it. There is a higher rate of more experienced respondents who feel that the system is not too challenging to use as compared to those with lesser experience.

The majority of respondents are benefiting from the ERP system. The respondents are assisted by the ERP system to do their job better. This is the benefit that participant appreciated the most. However, they feel that the system is not updating them sufficiently

regarding the changes in the organisation that impact their jobs. The ERP system is completely not making the respondent's job any easy. ERP system users who expect more of the general benefits from the system also benefit more from using it compared to those who do not expect more of general benefits from the system. The respondents who have low expectations on general benefits also are experiencing low benefits from using the ERP system. However, the case is different for user satisfaction. Users with high expectations are mostly neutral in their satisfaction. Also a very low rate of high satisfaction is noticeable. Users with high expectations are not easy to satisfy as compared to users with low expectations.

A very few of the participants have high satisfaction regarding the ERP system. Those who had low satisfaction are greater in numbers compared to those with high satisfaction. However, this number is still small if compared to the total sample. The user satisfaction is found be derived mostly from the support that come with the ERP system.

5.3 Application of the model

5.3.1 Information quality

The results of the information quality measured through a questionnaire were analysed through the stacked bar graph in figure 5.1. The quality of the information produced by the ERP system at BATA was found to be high by an average of 14.29% of the respondents. Other respondents (36.93%) indicated that they perceived the information produced to be of quality; however, the quality thereof was low. Therefore, the total number of respondents who believed the information produced by the ERP system to be of quality was an average of 51.21%.

A total of an average of 31% were not able to indicate the quality of the information they perceived by indicating a neutral response on the questionnaire. The respondents who indicated that the information produced was not of quality at all were an average of 17.79%.The relevancy of the information produced was indicated be of quality by most respondents (64%). The quality of how updated the information is, was found to have the lowest number of respondents who felt that the information produced by the ERP system was up to date.

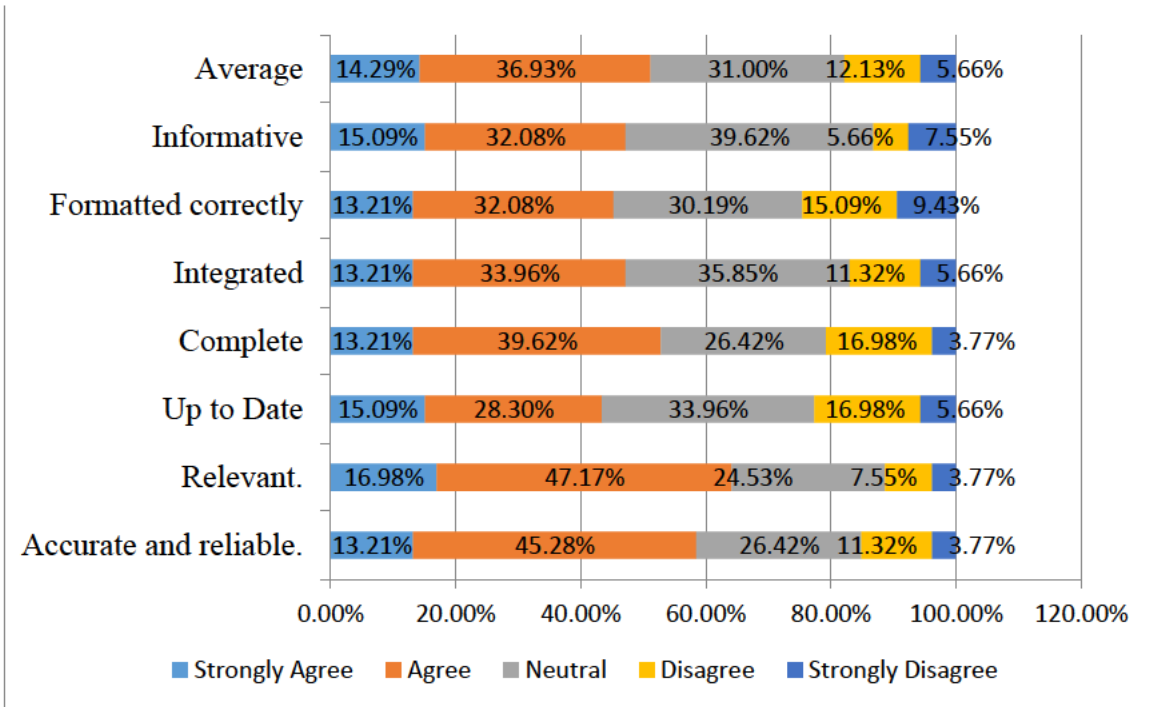


Figure 5. 1: Information quality at BATA

5.3.2 System quality

Figure 5.2 shows a stacked bar graph that displays the system quality constructs of the ERP systems that were measured. An average of 7.86% felt that the system quality was very high by indicating with strongly agree and only 29.87% felt that the ERP system was of low quality by indicating with agree. Therefore, an average of 37.74% of the respondents felt that the ERP system was of quality.

The quality construct of easiness of use for the ERP system was indicated to be perceived by most respondents. An average of 32.7% of the respondents felt that the ERP system at BATA was not of quality. There were a high proportion of respondents who indicated with neutral response with regards to the quality of the system at BATA. The quality construct that was indicated to be not perceived the most was with regards to accessibility of ERP system from different platforms.

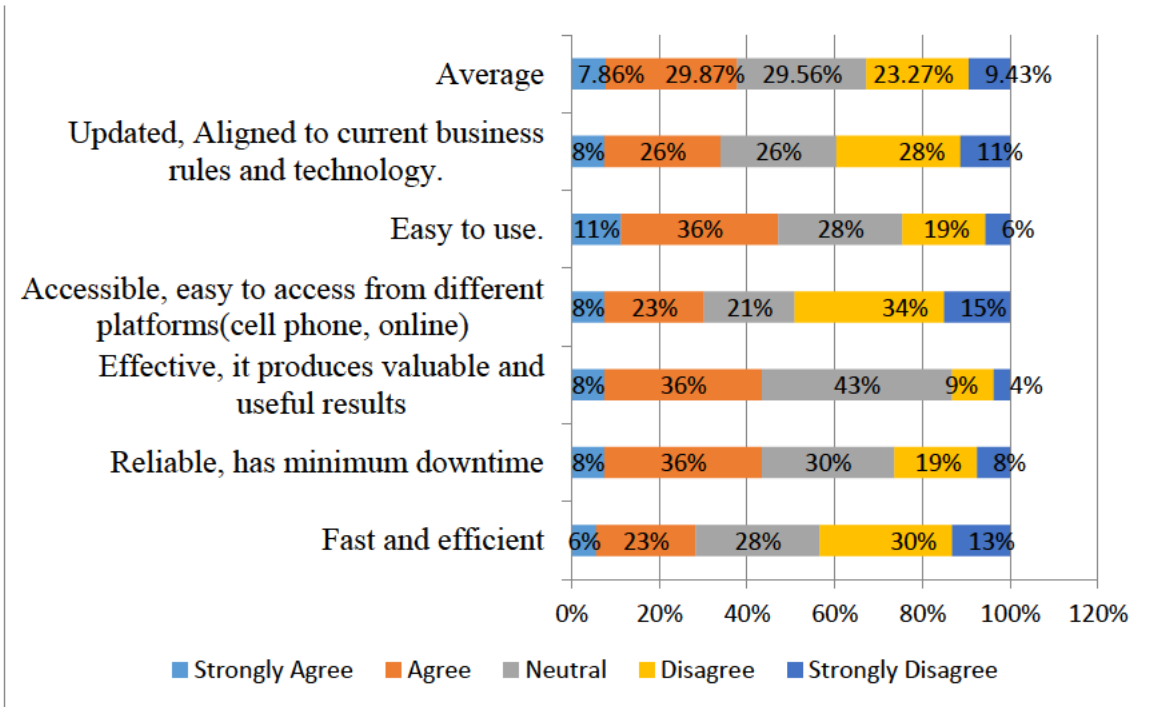


Figure 5. 2: System quality at BATA

5.3.3 Service quality

The quality of the service that came with the ERP system at BATA is shown in the stacked bar chart in figure 5.3. Among the quality constructs already analysed in section 5.3.2 and 5.3.3, the service quality on average had most (23.9%) respondents who indicated with strongly agree that there was service quality provided with the ERP system. There was an average of 33.33% respondents who also indicated with agree that they perceived the service of the quality provided. Therefore, a total average of 57.23% perceived that the service quality provided.

The respondents who felt that there was no service (disagree) were an average of 15.41%, and only 4.09% indicated with strongly disagree on their perception that there was no service quality provide with the ERP system. A very high rate of 73.58% of the respondents perceived the service of fixing IT issues. The service that was perceived the lowest with only 32.08% was that of the ERP system provide with training.

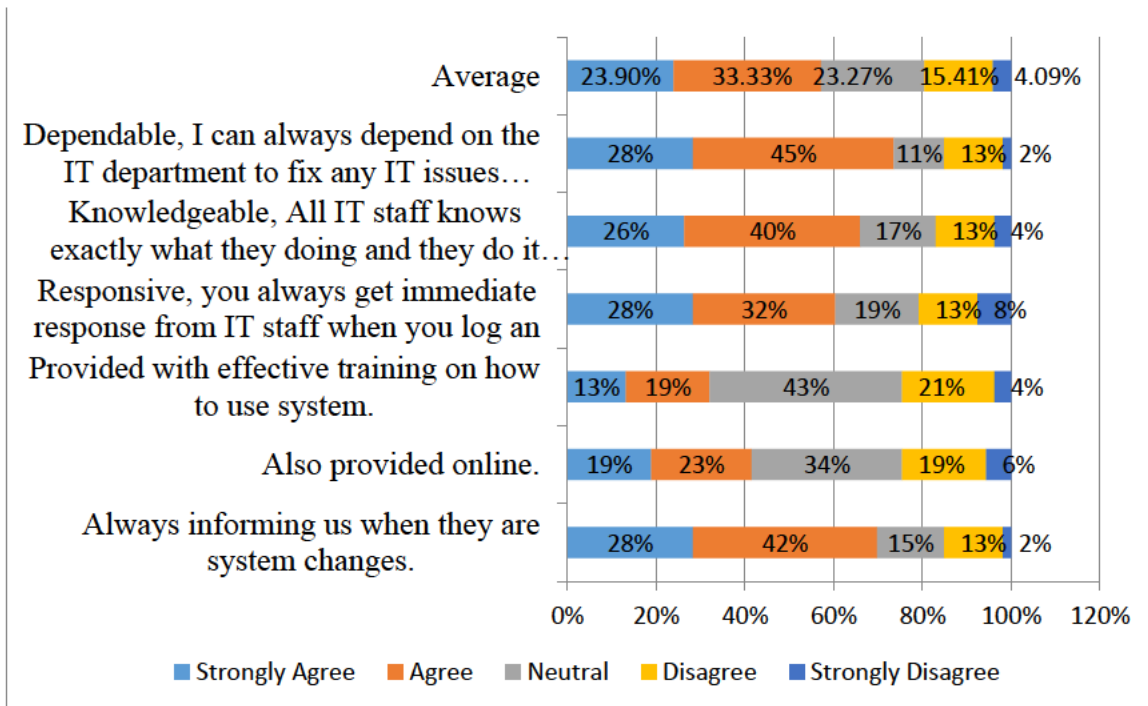


Figure 5. 3: Service quality at BATA

5.4 Summary

The key findings are outlined. A moderate relationship between the actual benefits derived from the ERP system and user satisfaction is confirmed to be significant with through this study. The expectations of respondents at BATA are found to be positive. . The managers are found to have high expectations. The results indicate that the ERP system used at BATA is challenging to use by most respondents. The majority of respondents are benefiting from the ERP system. ERP system users who expect more of the general benefits from the system also benefit more from using it compared to those who do not expect more of general benefits from the system. A very few of the participants have high satisfaction regarding the ERP system. The total number of respondents who believed the information produced by the ERP system to be of quality was an average of 51.21%. An average of 37.74% of the respondents felt that the ERP system was of quality. A total average of 57.23% perceived that the service quality provided.

Chapter 6

Conclusion and recommendations

6.1 Introduction

This chapter concludes the study and draws the dissertation to a close. The problem statement overview is given followed by a brief assessment querying if the questions were answered and the objectives were fulfilled. Details to findings in relation to the Research questions and the model are outlined followed by recommendations, limitations, direction for future research and conclusion.

6.2 Problem statement, Research question and objectives of the study

The problems statement is revisited in the light of research questions and objective with the purpose ascertaining if the purpose of the study was fulfilled.

6.2.1 Problem statement overview

Whilst many studies conducted have allowed for the understanding of factors that play a role in the attainment of ERP system benefits, this study explored ERP system benefits, challenges, user expectations, and user satisfaction. Previous research has shown vast evidence of user satisfaction affecting the attainment of benefits. It was also discovered through the literature that user expectations affect use and benefits of using the ERP system. This study, therefore, sought to identify user expectation, user satisfaction, actual benefits and challenges experienced from using the ERP system at a shoe manufacturing company in South Africa (Durban). The existence and nature of the relationship between the user expectations of general ERP system benefits, user satisfaction and actual benefits derived was investigated.

6.2.2 Research Questions

For recap purposes, the research questions of the study were:

- a) What are the perceptions of users towards expected general system benefits of ERP?
- b) What are challenges experienced in ERP adoption by users?
- c) What were the actual benefits derived from the ERP system?

- d) How does general expected benefits of ERP system influence user satisfaction?
- e) What is the relationship between the general expected benefits of ERP system and actual benefits derived?

6.2.3 Objectives

The objectives of this study are, therefore, listed below in line with the research questions:

- a) To determine the perceptions of users towards general system benefits of ERP.
- b) To identify the challenges experience by users in ERP adoption.
- c) To establish actual benefits derived from ERP system.
- d) To investigate the relationship between general expected benefits of ERP system and user satisfaction.
- e) To ascertain if the relationship between general expected benefits of ERP and ERP actual benefits derived exists.

6.3 Has the questions been answered

6.3.1 What are the perceptions of users towards expected general system benefits of ERP?

An average of 93.80% of the total sample as shown in section 4.5.1 was found to have positive expectation of general benefits offered by an ERP system. The benefit of increased productivity was perceived to be the most expected among the general benefits.

6.3.2 What are challenges experienced in ERP adoption by users?

Challenges were indicated by 40.43% of the respondents while 30.19% were neutral in their response and lastly the remaining 29.38% of the respondents did not feel challenged by the ERP system at BATA. These results are shown in section 4.5.2 and revealed that the ERP system is old and outdated, and it was also slow. The high neutral response rate made it hard to identify the actual level of being challenged that all the users. However, based on only 29.38% who expressed that the ERP system was not challenging to use; therefore, it was concluded that users at BATA have a lot of challenges using the ERP system.

6.3.3 What were the actual benefits derived from the ERP system?

The analysis in section 4.5.3 showed that there was an average of 57% of the total respondents who were found to benefit from using the ERP system and only 20% were found to not perceive that the ERP system was offering any benefits. The benefit that was perceived the most to be beneficial was that the ERP system assisted users to do their job better.

6.3.4 How does general expected benefits of ERP system influence user satisfaction?

In section 4.5.4.2 it was discovered that most users who had high expectation were also satisfied as compared to those who were not satisfied. These results, however, were clouded by a large proportion of the users with high expectation indicating neutral responses as a result most of the respondent who had high expectation did not have user satisfaction. The results are also complemented by the output of the Spearman rank correlation coefficient which showed that there was weak correlation between the expectation of general benefits from an ERP system and the user satisfaction of using it.

6.3.5 What is the relationship between the general expected benefits of ERP system and actual benefits derived?

The analysis in section 4.5.3.2 showed that most of the respondents who had high positive expectations also perceived high benefits (18.87%). A significant number of the respondents who had high expectations also had low benefits (9.43%) which implied they experienced to benefit less than the group who experienced higher benefits. The group of respondents who had low positive expectations of ERP system benefits also experienced low benefits from using it. This group had no respondent who did not benefit at all and a significantly low number of respondents who experienced low benefits (2%) and those who highly benefited (2%) from the ERP system.

6.4 Did the study fulfill the intended objectives

6.4.1 To determine the perceptions of users towards general system benefits of ERP

This was fulfilled and it was found that the perceptions of users towards general benefits of ERP systems were determined.

6.4.2 To identify the challenges experience by users in ERP adoption

Most respondents felt the ERP system at BATA was challenging to use because it was outdated amongst other challenges. This objective is, therefore, fulfilled.

6.4.3 To establish actual benefits derived from ERP system

This objective was fulfilled. The actual benefits of using the ERP system were established. Most respondents indicated to perceive the benefit of making their job easy.

6.4.4 To investigate the relationship between general expected benefits of ERP system and user satisfaction

This objective was fulfilled and relationships were investigated and confirmed in section 4.5.4.2, 4.7.1 and 4.8.

6.4.5 To ascertain if the relationship between general expected benefits of ERP and ERP actual benefits derived exists

This objective was fulfilled and the relationship between expectations and actual benefits derived was ascertained as shown in section 4.5.3.2, 4.8 and 4.7.2.

6.5 Findings in relation to the model

The DeLone and McLean IS success model (Delone and McLean, 2003) was used to guide the study. The conceptual model produced thereafter is shown in section 3.2.

The model and its constructs were applied successfully in this study; therefore, it is concluded that the DeLone and McLean IS success model can be applied in manufacturing industry. The results of the study supported the model. In section 4.8, a relationship between actual benefits derived and user satisfaction was confirmed. This was done through the Spearman's rank correlation coefficient technique. The correlation coefficient of 0.451 was significant at a 0.001 level (2 tailed).

6.6 Recommendations

Based on the literature review, data analysis and discussion, the following recommendations are made:

- **Recommendation 1:** When business organisations look for new employees who are ERP system users. Their selection process should target new employees who possess low expectations because they are more likely to perceive more benefits compared to those who possess low expectations. Also managers should subsequently provide training to new employees with the objectives to promote low expectations and proper use.
- **Recommendation 2:** In the event of adopting a new ERP system or upgrading it, the buyers should have a comprehensive plan for benefits realisation. They should ensure that the new ERP system prioritises productivity and is aligned to simplify the jobs of users.
- **Recommendation 3:** ERP system designers are encouraged to prioritise productivity and simplification of user jobs when they improving and designing new ERP systems. They should create ERP systems that conform to user jobs as opposed to users conforming to the system.
- **Recommendation 4:** IT managers should prioritise the service quality of the support their department will be providing on a daily basis. Although IT managers are mostly faced with low budget constraints; however, they should still try their best to prioritise maintenance and upgrading of the ERP system.

6.7 Limitations

There were factors that affected the validity, generalizability and interpretation of this study results. During the conduction of the study the following limitations were, therefore, identified in this section.

- The study focused only on the manufacturing company located in South Africa. The results of the study, therefore, cannot be generalised to all the manufacturing companies in South Africa as the sample used in this study cannot be firmly taken as representation of the population of all manufacturing companies in South Africa. The results, however, can still be used for any study in a manufacturing industry but they must be used with caution.
- The study was conducted in an environment that used an outdated ERP system. Therefore, the results of the study may have been different if the ERP system was updated. A study conducted in an environment with an updated ERP system would have produced results which are more relevant to the current technology and IT trends.

- The time and resources used for the study were limited. The study was conducted to complete an MBA course at UKZN. The student who conducted the study was a part-time student at the institution. Due to time and resource limitations the study was conducted using only the quantitative method.
- The tool that was used to collect data for the study was in English. This limited the study because there are more than 9 languages in South Africa. The respondents who spoke English as their home language might have been able to understand the data collection better than other who did not speak English as their home language.
- Finally the number of participants involved in the study was not the intended sample size that would added more confidence on the result. Therefore, the application of this should be used in consideration of this limitation.

6.8 Direction for future researchers

Direction for future research can/may include:

- A study across more businesses and industries in South Africa.
- Expectations in different phases of the ERP system adoption can be studied in the future.
- Future studies can also test factors that can alter expectations and the analysis of benefits and user satisfaction can be done thereafter to investigate the impact.
- Future research can apply different data collection tools and qualitative methods.
- A comparative study in the similar context between a developed country and a developing country.

6.9 Conclusion

This chapter provided the final conclusion to the research. The research question and objective were re-visited to check if study answered the question and fulfilled the objectives. The study adopted a census approach to data collection at a manufacturing industry in Durban (South Africa). Both descriptive and inferential statistics were used. A correlation between ERP system benefits derived and user satisfaction was identified through the Spearman's rank correlation technique. Most of the respondents were found to have positive expectation regarding the general benefits that ERP system should offer. Users with high expectations were more dissatisfied and not benefiting from the ERP system as compared to the other group with low expectations. Users with more experience

did not find the ERP system too challenging as compared to the users who lesser experience. Users with high expectations experienced higher benefits compare to those with low expectations. The study was limited to manufacturing company located in South Africa. The results of study could not be fully generalised with manufacturing companies who are using updated ERP systems because the company were the study was conducted used an old ERP system. The study was conducted under limited time and resources. Future research can conduct the same study on bigger manufacturing company or across different industries in South Africa. Future research can also look at measuring the expectation between different ERP system phase and attempts can be made to investigate the factor that can affect user expectations with the aim of increasing benefits and user satisfaction.

References

- ABD ELMONEM, M. A., NASR, E. S. & GEITH, M. H. 2016. Benefits and challenges of cloud ERP systems – A systematic literature review. *Future Computing and Informatics Journal*, 1, 1-9.
- AGGELIDIS, V. P. & CHATZOGLOU, P. D. 2012. Hospital information systems: measuring end user computing satisfaction (EUCS). *Journal of biomedical informatics*, 45, 566-79.
- AHMAD, M. M. & PINEDO CUENCA, R. 2013. Critical success factors for ERP implementation in SMEs. *Robotics and Computer-Integrated Manufacturing*, 29, 104-111.
- AL-GHAMDI, A. S. A.-M. 2013. Change management strategies and processes for the successful ERP system implementation: a proposed model. *International Journal of Computer Science and Information Security*, 11, 36.
- AL-JABRI, I. M. 2015. Antecedents of user satisfaction with ERP systems: mediation analyses. *K Kybernetes*, 44, 107-123.
- AL-JABRI, I. M. & ROZTOCKI, N. 2015. Adoption of ERP systems: Does information transparency matter? *TELE Telematics and Informatics*, 32, 300-310.
- ALMAHAMID, S. & AWSI, O. 2015. Perceived organizational ERP benefits for SMEs: Middle eastern perspective. *Interdiscip. J. Inf. Knowl. Manage. Interdisciplinary Journal of Information, Knowledge, and Management*, 10, 145-172.
- ANDERSSON, C. & GUSTAVSSON, S. 2014. How could resistance to change be reduced in an ERP implementation project?
- ANTWI, S. K. & HAMZA, K. 2015. Qualitative and quantitative research paradigms in business research: A philosophical reflection. *European Journal of Business and Management*, 7, 217-225.
- ARDALAN, K. 2017. Capital structure theory: Reconsidered. *Research in International Business and Finance*, 39, 696-710.
- AUSTRALIAN. 2013. *Census and Sample* [Online]. Available: <http://www.abs.gov.au/websitedbs/a3121120.nsf/home/statistical+language+-+census+and+sample> [Accessed 26 November 2018].
- BABAEI, M., GHOLAMI, Z. & ALTAFI, S. 2015. Challenges of Enterprise Resource Planning implementation in Iran large organizations. *Information Systems*, 54, 15-27.
- BADEWI, A. & SHEHAB, E. 2016. The impact of organizational project benefits management governance on ERP project success: Neo-institutional theory perspective. *JPMA International Journal of Project Management*, 34, 412-428.
- BADEWI, A., SHEHAB, E., ZENG, J., MOHAMAD, M. & AL-MASHARI, M. 2017. ERP Benefits Capability Framework: Orchestration Theory Perspective. *Business Process Mgmt Journal Business Process Management Journal*, 00.
- BANAEIANJAHROMI, N., KÄHKÖNEN, T., ALANNE, A. & SMOLANDER, K. Integration Obstacles During ERP Development. 2016 49th Hawaii International Conference on System Sciences (HICSS), 5-8 Jan. 2016. 4697-4706.
- BOLOGA, R. & LUPU, A. R. 2014. Organizational learning networks that can increase the productivity of IT consulting companies. A case study for ERP consultants. *Expert Systems with Applications*, 41, 126-136.
- CHAUDHARY, S. 2017. ERP through Cloud: Making a Difficult Alternative Easier. *International Journal of Engineering Science and Computing, Pacific Business School, Rajasthan, India*.

- DAVENPORT, T. H., HARRIS, J. G. & CANTRELL, S. 2004. Enterprise systems and ongoing process change. *Business Process Management Journal*, 10, 16-26.
- DELONE, W. H. & MCLEAN, E. R. 2003. The DeLone and McLean model of information systems success: a ten-year update. *Journal of management information systems*, 19, 9-30.
- DOLL, W. J. & TORKZADEH, G. 1988. The Measurement of End-User Computing Satisfaction. *MIS Quarterly*, 12, 259-274.
- DWIVEDI, Y. K., WASTELL, D., LAUMER, S., HENRIKSEN, H. Z., MYERS, M. D., BUNKER, D., ELBANNA, A., RAVISHANKAR, M. N. & SRIVASTAVA, S. C. 2015. Research on information systems failures and successes: Status update and future directions. *Inf Syst Front Information Systems Frontiers : A Journal of Research and Innovation*, 17, 143-157.
- ELABBASSI, A. & CHAFIK, K. 2014. The Decision to Invest in Information Systems: Case of Adopting ERP in the Moroccan Public Largest Companies. *IJCA International Journal of Computer Applications*, 88, 49-54.
- ESTEVEZ, J. 2009. A benefits realisation road-map framework for ERP usage in small and medium-sized enterprises. *Journal of Enterprise Information Management*, 22, 25-35.
- FAROOQ, U. 2013. *What is Census Method of Data Collection, Advantages & Disadvantages* [Online]. Available: <http://www.studylecturenotes.com/social-research-methodology/what-is-census-method-of-data-collection-advantages-disadvantages> [Accessed 26 November 2018].
- GREWAL, C. S., ENNS, S. T. & ROGERS, P. 2015. Dynamic reorder point replenishment strategies for a capacitated supply chain with seasonal demand. *Computers & Industrial Engineering*, 80, 97-110.
- GUIMARAES, T., ARMSTRONG, C., DUTRA DE OLIVEIRA NETO, J., RICCIO, E. L. & MADEIRA, G. 2015. ASSESSING THE IMPACT OF ERP ON END-USER JOBS. *International Journal of the Academic Business World*, 9.
- HASSAN, M. & A JABAR, M. 2013. A landsape of enterprise resource planning implementation.
- HUANG, Y.-Y. & HANDFIELD, R. B. 2015a. Measuring the benefits of ERP on supply management maturity model: a big data method. *Int Jrnl of Op & Prod Mngemnt International Journal of Operations & Production Management*, 35, 2-25.
- HUANG, Y. Y. & HANDFIELD, R. B. 2015b. Measuring the benefits of erp on supply management maturity model: A big data method. *Int. J. Oper. Prod. Manage. International Journal of Operations and Production Management*, 35, 2-25.
- KADIR, R. A., ISMAIL, N. & YATIN, S. F. M. 2015a. The Benefits of Implementing ERP System in Telecommunications. *SBSPRO Procedia - Social and Behavioral Sciences*, 211, 1216-1222.
- KADIR, R. A., ISMAIL, N. A. & YATIN, S. F. M. 2015b. The Benefits of Implementing ERP System in Telecommunications. *Procedia - Social and Behavioral Sciences*, 211, 1216-1222.
- KANCHYMALAY, K., KRISHNAN, R., ARIF, F., AMIRUDDIN, S., SALAM, S. & HASHIM, U. R. 2013. The Extent of ERP Customization towards User Satisfaction in Daily Operation for Manufacturing Companies. *JCP*, 8, 1788-1792.
- KANELLOU, A. & SPATHIS, C. 2013. Accounting benefits and satisfaction in an ERP environment. *ACCINF International Journal of Accounting Information Systems*, 14, 209-234.

- KARLINSKY-SHICHOR, Y. & ZVIRAN, M. 2016. Factors Influencing Perceived Benefits and User Satisfaction in Knowledge Management Systems. *Inf. Syst. Manage. Information Systems Management*, 33, 55-73.
- KIM, D. J. 2012. An investigation of the effect of online consumer trust on expectation, satisfaction, and post-expectation. *Information Systems and e-Business Management*, 10, 219-240.
- LAI, F., LI, X. & LAI, V. S. 2013. Transaction-Specific Investments, Relational Norms, and ERP Customer Satisfaction: A Mediation Analysis*. *DECI Decision Sciences*, 44, 679-711.
- LANGE, M., MENDLING, J. & RECKER, J. A comprehensive EA benefit realization model--An exploratory study. System Science (HICSS), 2012 45th Hawaii International Conference On, 2012. IEEE, 4230-4239.
- LAVRAKAS, P. J. 2008. Encyclopedia of Survey Research Methods.
- MAIER, C., LAUMER, S. & WEINERT, C. Enterprise resource planning systems induced stress: a comparative empirical analysis with young and elderly SAP users. *Wirtschaftsinformatik*, 2015. 1391-1406.
- MALAURENT, J. & AVISON, D. 2015. From an apparent failure to a success story: ERP in China—Post implementation. *International Journal of Information Management*, 35, 643-646.
- MARAKARKANDY, B. & YAJNIK, N. 2013. Re-examining and empirically validating the End User Computing Satisfaction models for satisfaction measurement in the internet banking context. *International Journal of Bank Marketing*, 31, 440-455.
- MAY, J., DHILLON, G. & CALDEIRA, M. 2013. Defining value-based objectives for ERP systems planning. *Decision Support Systems*, 55, 98-109.
- MIRBAGHERI, F. A. & KHAJAVI, G. 2013. Impact of ERP implementation at Malaysian SMEs: analysis of five dimensions benefit. *International Journal of Enterprise Computing and Business Systems*, 2.
- MITAKOS, T., ALMALIOTIS, I. & DEMEROUTI, A. 2010. An Auditing Approach for ERP Systems Examining Human Factors that Influence ERP User Satisfaction. *Informatica Economica*, 14, 78-92.
- MONTESDIOCA, G. P. Z. & MAÇADA, A. C. G. 2015. Measuring user satisfaction with information security practices. *Computers & Security Computers & Security*, 48, 267-280.
- MOON, K. & BLACKMAN, D. 2014. A guide to understanding social science research for natural scientists. *Conservation Biology*, 28, 1167-1177.
- MURRAY, M. J., CHIN, W. W. & ANDERSON-FLETCHER, E. 2013. Satisfaction with ERP Systems in Supply Chain Operations. *New Perspectives in Partial Least Squares and Related Methods*. Springer.
- NADIAH ZAMRE, S. I. 2015. Challenges in Managing the ERP Implementation: Case Study on User Requirement Stage *Universiti Kuala Lumpur Malaysian Institute of Information Technology (MIIT), 1016 Jalan Sultan Ismail, 50250 Kuala Lumpur, Malaysia*
- NEUMAN, W. L. 2013. *Social research methods: Qualitative and quantitative approaches*, United Kingdom, Pearson education.
- NORTON, A. L., ASHURST, C., COULSON-THOMAS, Y. M. & COULSON-THOMAS, C. J. 2013. Ensuring benefits realisation from ERP II: The CSF phasing model. *J. Enterp. Inf. Manage. Journal of Enterprise Information Management*, 26, 218-234.

- POWELL, D., ALFNES, E., STRANDHAGEN, J. O. & DREYER, H. 2013. The concurrent application of lean production and ERP: Towards an ERP-based lean implementation process. *Computers in Industry*, 64, 324-335.
- PTAK, C. A. 1991. MRP, MRP II, OPT, JIT, and CIM-succession, evolution, or necessary combination. *Production and Inventory Management Journal*, 32, 7.
- PTAK, C. A. & SCHRAGENHEIM, E. 2016. *ERP: tools, techniques, and applications for integrating the supply chain*, Crc Press.
- RAHMAN, M. S. 2016. The Advantages and Disadvantages of Using Qualitative and Quantitative Approaches and Methods in Language “Testing and Assessment” Research: A Literature Review *Journa of Education and Learning*, 6.
- RANA, N. P., DWIVEDI, Y. K., WILLIAMS, M. D. & WEERAKKODY, V. 2015. Investigating success of an e-government initiative: Validation of an integrated IS success model. *Inf Syst Front Information Systems Frontiers : A Journal of Research and Innovation*, 17, 127-142.
- RANJAN, S., JHA, V. K. & PAL, P. 2017. Application of emerging technologies in ERP implementation in Indian manufacturing enterprises: an exploratory analysis of strategic benefits. *Int J Adv Manuf Technol The International Journal of Advanced Manufacturing Technology*, 88, 369-380.
- RONDEAU, P. & LITTERAL, L. A. 2001. The evolution of manufacturing planning and control systems: From reorder point to enterprise resource planning. *Production and Inventory Management Journal*, 42.
- SAADÉ, R. G., NIJHER, H. & SHARMA, M. C. Why ERP implementations fail—A grounded research study. Proceedings of the Informing Science+ Information Technology Education Conference, 2017.
- SAATÇIOĞLU, Ö. Y. 2009. What determines user satisfaction in ERP projects: benefits, barriers or risks? *jeim Journal of Enterprise Information Management*, 22, 690-708.
- SADRZADEHRAFIEI, S., CHOFREH, A. G., HOSSEINI, N. K. & SULAIMAN, R. 2013. The Benefits of Enterprise Resource Planning (ERP) System Implementation in Dry Food Packaging Industry. *Procedia Technology*, 11, 220-226.
- SALAHUDDIN, L. & ISMAIL, Z. 2015. Classification of antecedents towards safety use of health information technology: A systematic review. *IJB International Journal of Medical Informatics*, 84, 877-891.
- SALIH, S. H., HUSSIN, A. & DAHLAN, H. 2013. User resistance factors in post ERP implementation. *Journal of Research and Innovation in Information Systems*, 3, 19-27.
- SAUNDERS, M. N. K., LEWIS, P. & THORNHILL, A. 2016. *Research methods for business students*, United Kingdom, Pearson Education Limited.
- SCHWARTZ-SHEA, P. & YANOW, D. 2013. *Interpretive research design: Concepts and processes*, United Kingdom, Routledge.
- SHAN, S., LI, C., YAO, W., SHI, J. & REN, J. 2014. An Empirical Study on Critical Factors Affecting Employee Satisfaction. *SRES Systems Research and Behavioral Science*, 31, 447-460.
- SHIRAZI, B. 2018. Towards a sustainable interoperability in food industry small & medium networked enterprises: Distributed service-oriented enterprise resources planning. *Journal of Cleaner Production*, 181, 109-122.
- SLABBERT, B., SEYMOUR, L. F. & SCHULER, J. Business benefits and challenges of a multiple ERP landscape. CONF-IRM, 2016. 60.

- SOJA, P. & PALIWODA-PEKOSZ, G. 2013. Comparing benefits from enterprise system adoption in transition and developed economies: An ontology-based approach. *Information Systems Management*, 30, 198-217.
- SOMERS, T. M., NELSON, K. & KARIMI, J. 2003. Confirmatory Factor Analysis of the End-User Computing Satisfaction Instrument: Replication within an ERP Domain*. *DECI Decision Sciences*, 34, 595-621.
- STEINHUESER, M., RICHTER, A. & SMOLNIK, S. 2015. How to bridge the boundary? Determinants of inter-organizational social software usage. *Electron Markets Electronic Markets : The International Journal on Networked Business*, 25, 267-281.
- STRATMAN, J. K. 2007. Realizing Benefits from Enterprise Resource Planning: Does Strategic Focus Matter? *POMS Production and Operations Management*, 16, 203-216.
- TEITTINEN, H., PELLINEN, J. & JÄRVENPÄÄ, M. 2013. ERP in action Challenges and benefits for management control in SME context. *ACCINF International Journal of Accounting Information Systems*, 14, 278-296.
- TOOMEY, J. 1996. *MRP II: planning for manufacturing excellence*, Springer Science & Business Media.
- TRIGO, A., BELFO, F. & ESTÉBANEZ, R. P. 2014. Accounting Information Systems: The Challenge of the Real-time Reporting. *Procedia Technology*, 16, 118-127.
- USMANIJ, P. A., KHOSLA, R. & CHU, M.-T. 2013. Successful product or successful system? User satisfaction measurement of ERP software. *Journal of Intelligent Manufacturing*, 24, 1131-1144.
- VAEZI, R., MILLS, A., CHIN, W. & ZAFAR, H. 2016. User Satisfaction Research in Information Systems: Historical Roots and Approaches. *CAIS Communications of the Association for Information Systems*, 38, 501-532.
- VENKATAIAH, D. 2012. Relationship between Kaizen Events and Perceived Quality Performance in Indian Automobile Industry. *Ch. and Dr. Srilaltiha, Relationship between Kaizen Events and Perceived Quality Performance in Indian Automobile Industry (January 10, 2012). IJMBS*, 2.
- WELI 2014. Manager satisfaction in using the Enterprise Resource Planning (ERP) System and the managerial performance. *Australas. J. Inf. Syst. Australasian Journal of Information Systems*, 18, 119-135.
- YANG, S. & ZHAO, Y. F. 2015. Additive manufacturing-enabled design theory and methodology: a critical review. *The International Journal of Advanced Manufacturing Technology*, 80, 327-342.
- YILMAZ, K. 2013. Comparison of quantitative and qualitative research traditions: Epistemological, theoretical, and methodological differences. *European Journal of Education*, 48, 311-325.
- ZHANG, L., HUANG, J. & XU, X. 2012. Impact of ERP investment on company performance: Evidence from manufacturing firms in China. *Tsinghua Sci. Tech. Tsinghua Science and Technology*, 17, 232-240.

Appendix 1

Letter of informed consent

UNIVERSITY OF KWAZULU-NATAL
GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

MBA Research Project

Researcher: Vukani Cosmos Xulu (083-3498066)

Supervisor: Dr Sachin Suknunan (031-2607057)

Research Office: Ms P Ximba 031-2603587

CONSENT

I.....(full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT

DATE

.....

.....

Appendix 2

Research questionnaire

SECTION A: Demographical data

Please indicate the answer that mostly suits the question asked in the statements below:

	Less than a year	1-3 years	4- 6 years	7- 10 years	11+ years
1. How many years have you been with the company?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	18-29	30-39	40-49	50-59	60+
2. What is your age?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Male	Female			
3. What is your gender?	<input type="radio"/>	<input type="radio"/>			

	Accounting	Finance	Production	Marketing	Retail	IT
4. In Which department do you work?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	High school	Certificate	Higher Certificate	Diploma	Degree	Postgraduate Degree
5. Which education level are you on?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Top Management	Middle Management	Senior Subordinate	Junior Subordinate	Temp
6. Which work level are you on?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

A. SECTION B: Research Questionnaire

Please indicate the extent to which you agree with the following statements:

1. A proper working ERP is expected to:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Automates key processes, brings information together from different departments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrate business processes (across all relevant departments).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promotes information sharing between departments which improves departmental	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improves Productivity of the organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improves response time and efficiency of the organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helps to forecast future business trends and patterns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improves real time decision making	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide any other general benefits expected from using an ERP system:

2. I benefit from the current ERP system as it:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Helps me to do my job better.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enables me to respond effectively to my daily job demands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Help integrate my work with the work of my colleagues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Updates me regularly of key business changes that affect my job as they occur.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improves the quality of my job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Simplifies my job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Helps me communicate my job needs to other employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Please provide any other additional benefits provided by the current ERP system:

3. The current ERP system is :	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Complex and not easy to understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Slow.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Crashing/offline most of the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not giving me relevant information I need to do my job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not provided with adequate training.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Old and not updated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lacking useful technical support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide other challenges that come with using the current ERP system:

4. I am satisfied with :	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
How the system works.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The support provided with the system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The training provided with the system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The graphical user interface of the system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The usability of the system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How the system components are integrated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How the system imports and exports bulk data.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The quality of information produced by system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. The information produced by the current ERP system is:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Accurate and reliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relevant.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Up to Date	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complete	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Formatted correctly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Informative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. The current ERP system is:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Fast and efficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reliable, has minimum downtime	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Effective, it produces valuable and useful results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accessible, easy to access from different platforms(cell phone, online)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Easy to use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Updated, Aligned to current business rules and technology.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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7. The IT support is:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Always informing us when they are system changes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Also provided online.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provided with effective training on how to use system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Responsive, you always get immediate response from IT staff when you log an	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledgeable, All IT staff knows exactly what they doing and they do it well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dependable, I can always depend on the IT department to fix any IT issues effective my	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix 3

Ethical clearance



10 September 2018

Mr Vukani Cosmos Xulu 206506317
Graduate School of Business & Leadership
Westville Campus

Dear Mr Xulu

Protocol reference number: HSS/2313/017M
Project title: Enterprise Resource Planning (ERP) Systems Success, Evaluation of User's Perceptions and Satisfaction on Expected Benefits.

Full Approval – Expedited Application

In response to your application received 14 December 2017, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Prof S Singh (Chair)

/px

cc Supervisor: Dr Sachin Suknunan
cc Academic Leader Research: Professor M Hoque
cc School Administrator: Ms Zarina Bullyraj

Humanities & Social Sciences Research Ethics Committee

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Website: www.ukzn.ac.za

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Appendix 4

Turnitin report summary

11/26/2018

Turnitin

<h3>Turnitin Originality Report</h3>			
<p>Processed on: 26-Nov-2018 3:03 AM CAT ID: 1044549250 Word Count: 23108 Submitted: 1</p>			
<p>Thesis 2018 By Vukani Xulu</p>	<table border="1"> <tr> <td style="text-align: center;"> <p>Similarity Index</p> <p style="font-size: 24pt;">2%</p> </td> <td style="padding: 5px;"> <p>Similarity by Source</p> <p>Internet Sources: 2% Publications: 1% Student Papers: 1%</p> </td> </tr> </table>	<p>Similarity Index</p> <p style="font-size: 24pt;">2%</p>	<p>Similarity by Source</p> <p>Internet Sources: 2% Publications: 1% Student Papers: 1%</p>
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<p>< 1% match (publications) Alexandra Kanellou, Charalambos Spathis. "Accounting benefits and satisfaction in an ERP environment", International Journal of Accounting Information Systems, 2013</p>
<p>< 1% match (Internet from 30-Jun-2017) http://uir.unisa.ac.za/bitstream/handle/10500/22761/dissertation_mathebula_tc.pdf?isAllowed=y&sequence=1</p>
<p>< 1% match (Internet from 01-May-2015) http://wrlc.org.za/wp-content/uploads/2014/11/Tinashe-Musasa-Customer-Service-and-its-Impact-on-Consumer-Purchasing-Behaviour-at-Supermarkets-in-the-greater-area-of-Ethekwini.pdf</p>
<p>< 1% match (publications) Sinawong Sang, Jeong-Dong Lee. "A Conceptual Model of e-Government Acceptance in Public Sector", 2009 Third International Conference on Digital Society, 2009</p>
<p>< 1% match (Internet from 09-Nov-2018) https://issuu.com/profundumeducatie/docs/slieker-ten_hove_-_proefschrift_200_5b02569fa5c2b4</p>
<p>< 1% match (student papers from 24-Feb-2015) Submitted to University of KwaZulu-Natal on 2015-02-24</p>
<p>< 1% match (Internet from 30-Nov-2016) http://researcharchive.vuw.ac.nz/xmlui/bitstream/handle/10063/5315/thesis.pdf?sequence=1</p>
<p>< 1% match (Internet from 11-Sep-2014) http://web.up.ac.za/sitefiles/file/2013_ALCRL%20King%20III%20Study%20Report.pdf</p>
<p>< 1% match (Internet from 27-Jun-2017) http://www.repository.up.ac.za/bitstream/handle/2263/59802/Ching%27andu_Client_2017.pdf?sequence=1</p>
<p>< 1% match (Internet from 11-Dec-2017) http://www.pmi.org.in/downloads/reports/Drivers.Project.Management.Education.India.doc</p>
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