THE USE OF ENTERPRISE RESOURCE PLANNING SYSTEMS IN THREE LEADING BAKERIES IN SOUTH AFRICA

M. Mokuena

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THE USE OF ENTERPRISE RESOURCE PLANNING SYSTEMS IN THREE LEADING BAKERIES IN SOUTH AFRICA

BY

MPOLOKENG MOKUENA

Supervisor: Dr Jessica Fraser

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DECLARATION

I, *Mpolokeng Mokuena*, student number *201339366* hereby declare the treatise for investigating the use of Enterprise Resource Planning system in bakeries, submitted in partial fulfilment of the requirement of the *Master of Business Administration*, is my own work and that it has not previously been submitted for assessment or completion of any postgraduate qualification to another university or for another qualification

Mpolokeng Mokuena

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ABSTRACT

There is a continued effort for organisations to invest in resources that enable them to reduce costs while increasing productivity to meet the needs of the customers in order to maximise profits. Such investments also empower them to gain competitive advantage in the market. In an endeavour to achieve this, organisations invest in implementing Information Technology (IT) software to assist in increasing efficiency. There are varieties of available software solutions that are used at various stages of the value-chain. One of these is the Enterprise Resource Planning (ERP) system.

Bakeries are no exception in exploring ways in which operations can be run more efficiently to reduce costs in the various levels of the supply chain through use of ERP systems. Although bakeries have invested many funds in implementing this system, they fail to enjoy the full returns on their investment of this system. The study compares the use of ERP systems between three leading bakers in Port Elizabeth, as part of convenience sampling, to identify any possible ineffective business practice applications and recommend some applicable solutions.

In pursuing this study, a qualitative research was conducted. A critical literature review drawing on academic sources was conducted on the Supply Chain Management SCM. It provides an overview of SCM, and the effectiveness of ERP is SCM. Additionally, it provides benefits of using ERP in SCM. Furthermore, various tools that are used in measuring effectiveness of ERP systems were discussed. These tools included, Perceived Ease of Use and Perceived Usefulness, part of the Technology Acceptance Model (TAM) and the balanced scored card. This was followed by a content analysis of web-based content of the three bakeries. Interview schedules were conducted using close-ended and open-ended questionnaires with the procurement, production, and distribution officers in the three bakeries to get a deeper understanding of the experience of the respondents. The questionnaires were distributed to twenty-seven (27) potential participants but interviews were conducted with only five (5) respondents.

This constitutes a (5/27) 18.5% response rate. The questions on the questionnaires required a deeper understanding of the experiences of the respondents on their use of ERP. The questions were adopted from a balanced score card questionnaire that was previously used in measuring the performance of ERP systems.

The study used Perceived Usefulness and Perceived Ease of Use within the Technology Acceptance Model (TAM) to measure the effectiveness of ERP systems that are used in bakeries

The analysis revealed that some production departments did not use the ERP system altogether while others used it as an archive and stuck to manual tasks resulting in duplication of tasks, which increase the workload of the departments. It also discourages interdepartmental information integration because other departments do not have easy and quick access to information from their production department. This department must share information to other departments through email. It was discovered that some end-users do not undergo formal training that affect their use of the system making it ineffective. Some found that their system was not user-friendly and increased their workload.

Recommendations are made to the management of the bakeries on how to make the use of ERP effective for those planning to upgrade their current baking management systems.

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DEFINITION OF KEY CONCEPTS

Agility

How quick and simple it is for a firm to reconfigure, redesign, and realign procedures and methods to respond to the desires, pressures and opportunities (Seethamraju & Sundar 2013:137).

Business Process Re-engineering

Business Process Re-engineering is a significant reconsideration and drastically re-designs of the business process to attain dramatic enhancement in important modern measures of performances such as cost, quality and speed (Rao, Mansingh & Osei-Bryson 2012:577).

Compatibility

The degree to which the use of ERP and impact on end-user innovation is perceived as being consistent with existing values, needs, and past experiences of potential adopters (Rajan & Baral 2015:108).

Enterprise Resource Planning

“Framework for organising, defining, and standardizing the business processes necessary to effectively plan and control an organisation so the organisation can use its internal knowledge to seek external advantage” (Jacobs 2007:357).

A large, integrated information system that supports most enterprise processes and data storage needs across the entire organisation (Verma & Boyer 2010:486).

Efficiency:

Efficiency is the ability to complete a job with the least use of time and effort (www.dictionary.com)

Effective:

Effective is producing the intended or expected results (www.dictionary.com).

Ineffective:

Unable to do what it is supposed to. (https://www.vocabulary.com/dictionary/ineffective)

Inefficient

Failing to achieve desired maximum productivity, while wasting resources time or resources. (https://www.vocabulary.com/dictionary/inefficient)

Microsoft SharePoint

Browser-based collaboration and document management platform from Microsoft - Wikipedia. Microsoft's content management system. It allows groups to set up a centralized, password-protected space for document sharing. (www.aiim.org/What-is-Microsoft-Sharepoint). Accessed 04 February 2017

Perceived Usefulness

The degree to which a person believes that using a particular system would enhance job performance (Davis 1989)

Perceived Ease of Use

Degree to which a person believes that using a system would be free of effort, where effort is a finite resource that a person may allocate to the various activities for which he or she is responsible (Davis 1989).

Supply Chain Management

Coordinating, and integrating the flow of materials, information, and funds as they move in a process from supplier to manufacturer, wholesaler, retailer and to consumer.

ABBREVIATION

BSC	Balanced Score Card
CRM	Customer Relationship Management
ERP	Enterprise Resource Planning
EES	Equipment Effectiveness Suite
GP	Microsoft Dynamic Great Plains
ICT	Information Communication Technology
IS	Information Systems
IT	Information Technology
PU	Perceived Usefulness
PEU	Perceived Ease of Use
TAM	Technology Acceptance Model
SAP	System Applications
SCM	Supply Chain Management
SKU	Stock Keeping Unit
SRM	Supply Relationship Management

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

In an effort to keep abreast of fierce competition, companies in the Fast Moving Consumer Goods industry (FMCG) continue to find ways of being more efficient in their operations. They do this by taking advantage of developments in Information Technology (IT) systems. These systems are designed to enable them to be more efficient in communications, operations, managing resources and activities in information based functions (Ward & Peppard 2016:6). These FMCG companies are under continuous pressure to remain competitive by lowering total costs in the supply chain, reducing production times, and improve quality. They experience a continued need to collaborate with suppliers, distributors, and customers to share information that they previously aggressively guarded (Umble, Haft, & Umble, 2003:241). To ensure efficiency in collaboration, improved process, and real-time information, organisations use IT systems that integrate different functions and information within them. The current leader in these systems is Enterprise Resource Planning (ERP), an integrated software package, which has shown a continued growth in implementation across industries (Granlund & Malmi 2002: 299).

1.2 PROBLEM STATEMENT

The ERP system has an integrative nature that allows organisations to improve their information sharing and processing, and decision-making, in real-time. This integrative software allows the organisation to be efficient in the use of resources and share the data that is stored in a single database. It pulls together a variety of business functions including sales, marketing, finance, accounting, purchasing, and other operational systems as shown in Figure 1.1.

Figure 1.1 Components of an ERP system

Source: DMS Retail, 2016

This enables managers, in various departments within the organisations, to have access to accurate information faster for decision-making, communicating with other stakeholders and for future forecasting (Bhati & Trivedi 2016:28).

Prior to ERP system procurement and implementation, it is important that an organisation is clear on the benefits it plans to draw from using an ERP system. To achieve this, an organisation needs to ensure that it involves top management to guarantee support. This is because acquiring and implementing this system requires a lot of financial investment and time (Badewi & Shehab 2013:19). Having a clear goal for implementing this system enabled the organisation to customise its ERP system according to its needs and business process used. It may also influence the company to

review the way it functions. Chandrakumar and Parthasarathy (2016:100-101) observe that it has become common for organisations to modify their ERP systems to be able to meet their important needs. They further state that for customisation to be efficient, project managers implementing the system should have an accurate measurement of the software, because failure to do this will result in failure to meet anticipated growth rates, even lead to bankruptcy.

Top management support, accurate measurements of software, employee commitment, and end-user training that are important in ensuring effective use of ERP systems. Training enables employees to better appreciate the system and business process and reap additional benefits of the systems that aim to assist the users to become more efficient in performing their tasks. It is important to acknowledge the role of end-users in the use of the system. This is because the behaviour of users of the system influences the long-term value obtained by the company from its usage (Chatzidakis & Grande 2013:14).

A lot has been written on the implementation of ERPs in general. However, very few studies have been conducted on the actual use of these systems within bakeries in the past ten years. The study aims to compare the use of ERP systems of three leading companies in the confectionery industry, specifically bakeries, in Port Elizabeth to identify any possible ineffective business practice and recommend some applicable solutions. The contribution that this study makes to the body of knowledge is to advise this industry on the best practices to follow when using this system to obtain maximum benefits and sustain competitive advantage.

Bakeries are classified in the confectionery industry within the manufacturing domain. Companies within this industry compete with many small and medium-size enterprises. They also have low-cost producers that struggle for a market share (Peristeris et al 2015:1). The resources, capabilities and capacity that an organisation own can enable it to have a competitive advantage. The use of Information Technology (IT) to ensure efficiency in operations and communication assists a business to heighten performance and improve business processes. The use of IT and related software also reduces costs

incurred in value chain activities. It also reduces the time that is used to perform these operations. For example, the cost of production is generally higher when using labour rather than technology. Additionally, the speed at which a business can collect information through the use of technology such as email or integration between its system and that of a supplier is higher than if it were to be done manually. It is also less expensive.

1.3 BAKING INDUSTRY ARCHITECTURE

The baking industry is composed of firms that are involved in the production, importation or wholesaling and retailing of baked goods such as bread, prepared doughs, cakes pastries and cookies (John Dunham & Associates, 2017). This industry is regulated by the South African Chamber of Bakeries. The regulator differentiates the bakeries into four categories. These categories are retail bakers, wholesale bakers, emerging bakers and independent bakers. Retail bakers are retail outlets that have in-store bakeries where baked products are not the main product range. Wholesale bakers bake at a minimum of one bakery and distribute most of the products on a wholesale basis. Emerging bakers are individuals from previously disadvantaged communities who use a maximum of 1000kg of flour daily in the baking operations while and independent bakers are those that make and sell bakery products but cannot be put in any of the three categories (South African Chamber of Commerce, 2015).

The major companies in the South African baking industry are Pioneer Foods, Tiger Brands, Premium foods and Sunbake bakeries. The SACB classifies these as wholesale member bakeries (South African Chamber of Commerce, 2015). In addition to these, there are an estimate of 600 in-store bakeries at retail outlets such as Pick ’n pay, Checkers and Shoprite. In addition are over 4500 small independent bakeries (Entrepreneur, 2016). Other popular bakeries are those that offer freshly baked products as well as other refreshments (also known as contemporary café). Vovo Telo and Charly’s Bakery are an example of these. The current bakery products in the South

African market are bread (white bread, brown bread and whole-wheatbread), rolls (hamburger rolls, hotdog rolls and other buns), speciality bread (rye bread, pita breads and French loaves) and baked confectionery (muffins, cakes, pastries, biscuits, rusks and doughnuts) (BMI Research, 2012).

People of all ages are drawn to bakeries because of the different needs that are satisfied by the items produced. Among the produced items, bread is core. This is because bread is the staple of them all (Paul 2012). In South Africa, bread is an important staple food and plays an important role in ensuring food security (Fourie & Wandile, 2016). There has been a decline in the sales volume of packaged bakery products comparison to 2013. This is due to the increase in selling prices because of the increased input costs that bakeries incur in when producing baked items. Price-sensitive consumers have reduced their purchases as these prices increase. Health benefits offered by the baked products differ with income groups. Middle to high income earners are willing to pay a premium for products that offer health benefits while low income earners prefer bread, which offers less nutrition (Euromonitor, 2014).

The milling and baking industry were previously classified under Agro-Processing within the broad economy (Erasmus & Cownie 2002:1). It is a subset of the manufacturing that processes raw materials and intermediate products obtained from the agricultural sector (South African Embassy in the Netherlands, 2015). This sector has contributed R78 billion to the Gross Domestic Product of the country and employs more than 362 000 people (South African Government, 2016). The food division of the Agro-Processing sector obtains most of its outputs from the agricultural sector as the primary sector, giving it a strong backwards linkage while a strong backwards linkage with the tertiary sector consists with trade, transport, trade and finance, which is continuing to increase. This division generates more employment compared to other divisions in the manufacturing sector due to low levels of capital intensity. It also receives most of the largest share of domestic fixed investment in the manufacturing sector. However, it is the lowest exporter in the manufacturing sector (Department of Agriculture, Forestry and Fisheries, 2012). During 2014, Agro-processing contributed 31.5% to the Manufacturing

sector and accounted for 4.3% of the economy of the country. Furthermore, it accounted for 39.5% of total employment of the manufacturing and 3.5% of the total employment of the country. In addition, it had 18.4% share of the domestic fixed investment in the manufacturing sector and 3.2% of the economy (Department of Agriculture, Forestry and Fisheries, 2017).

Having acknowledged that IT systems enable efficiency in communication, there is a limited study on the use of ERP systems in bakeries. This research investigated the use of this system in the bakery industry with the aim of identifying any ineffectiveness. It will then recommend to relevant managers how to review their business practices in order to benefit from using the system and sustainable competitive advantage. This leads to the main research aim: To compare the use of ERP systems between three leading bakeries in PE in order to identify any possible ineffective business practice and recommend some applicable solutions.

The primary research question of this study: Is the ERP system used in bakeries ineffective?
The secondary research questions of the study are:

- How effective is the ERP system in the procurement department?
- How effective is the ERP system in the production department?
- How effective is the ERP system in the distribution department?

1.4 OBJECTIVES OF THE RESEARCH

The primary research objective is to compare the business practices of the three bakers to determine how they contribute to the ineffectiveness of the ERP system in the procurement, production and distribution functions of the supply chain.
To address the primary research problem, secondary research objectives will be discussed. The secondary objectives are:

- To explore the business practices undertaken during procurement which result in the ERP system being ineffective.
- To explore the business practices undertaken during production which result in the ERP system being ineffective.
- To explore the business practices undertaken during distribution which result in the ERP system being ineffective.

1.5 RESEARCH DESIGN AND METHODOLOGY

1.5.1 Analytical instruments

This was a qualitative research study. This research was undertaken by conducting a content analysis of the web-based content of the three bakeries. This was followed by an interviewer-administered interview schedule within an open-ended questionnaire, which was designed to obtain information from three users of the system in the three departments (procurement, production and distribution) of the three chosen bakeries to get a deeper understanding of the use of the system, and the challenges or failures experienced in the use. A telephone interview was also conducted using the same questionnaire/ interview schedule. A literature review was conducted on the use of an ERP system, the use of ERP in FMCG with specific focus on bakeries, procurement, production and distribution activities of the supply chain. The three identified companies are SASKO, Albany, and Blue Ribbon Bakeries.

1.5.2 Scope and Delimitation

The research is limited to the three leading bakeries in South Africa, which are SASKO bakeries, Albany bakeries, and Blue Ribbon bakeries. It does not include smaller confectionery business. It also excludes privately branded bakeries. In assessing the use of ERP, the study will be limited to the purchasing, production, and distribution. It will exclude sales and Customer Relationship Management (CRM) of the supply chain. A telephone interview was conducted with Albany bakery because the production

facilities are in Bellville, Western Cape. The respondents did not provide a written, only oral consent when conducting the interviews. The respondents did not have time to check the transcription or findings post the interviews.

1.5.3 Ethics Clearance.

There are no vulnerable groups involved in this study. Therefore, a full ethics clearance was not mandatory. Additionally, the respondents were not forced to participate in the research and were free to withdraw at any point of the interview. They were not given incentives for participating in the study.

1.6 SIGNIFICANCE OF THE RESEARCH

The bakeries have procured an ERP system with the aim of improving efficiency in the performance of supply chain activities. In this study, the researcher has harvested the problems that these bakeries experience in the use of this system, which resulted in its ineffectiveness. The study will then identify and propose practices that bakeries can adopt to make the system effective.

1.7 OUTLINE OF THE STUDY

The study is divided into the following chapters: *Chapter 1* introduces the problem statement. It further defines the primary and secondary research questions and objectives. It also details the research methodology, scope of the study and the delimitations. *Chapter 2* shows an overview of the South African Bakery industry. *Chapter 3* discusses the Supply Chain Management (SCM) of the baking industry. In this discussion, an overview of the supply chain Management is discussed, and the challenges that are faced. Additionally, an overview of an Enterprise Resource Planning system and the role it plays in the SCM of the bakery industry is considered. In addition, this chapter includes a review of literature about models that are used to measure the

effectiveness of an ERP system. *Chapter 4* provides a detailed discussion of the research methodology that was used when conducting this study. *Chapter 5* presents and analyses the web-based content of the bakeries that are studied in this research. These bakeries are Blue Ribbon, Sasko and Albany bakeries. *Chapter 6* reports on the findings obtained from the interviewer-administered schedules that were conducted using open-ended questionnaires, including the telephone interview. It also provides an analysis of the findings and provides the conclusion, recommendations and suggestions for future research studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter introduced the problem statement, the research questions and research objectives of this study. It also gave an overview of the baking industry of South Africa. This chapter provides a literature review on Supply Chain Management (SCM), and the challenges that are faced in this activity of a business. Additionally, a literature review on the role of Enterprise Resource Planning system (ERP) on SCM. To achieve this, an overview of ERP, its effectiveness and benefits in SCM were considered

2.2 SUPPLY CHAIN MANAGEMENT

For a business to have a sustainable competitive advantage, it should undertake activities that add value to the customer. It does this by using an effective supply chain. Lu and Swaminathan (2015:2) differentiate supply chain as a sequence of business processes in which products are produced and delivered to customers by undertaking activities that add value to the products while supply chain management is incorporating these sequences together with the processes that are involved in these value added activities. Stadtler (2015) further explains that a supply chain is a network of all the people, entities, resources, actions, and technology used in making and selling a product. This includes obtaining raw materials from the suppliers to the manufacturer; right through to getting the delivery of the finished product to the end-user.

According to Stadtler (2015) Supply Chain Management is coordinating, and integrating the flow of materials, information and funds as they move in a process from supplier to manufacturer to wholesaler to retailer to the consumer. Figure 2.1 below shows an illustration of supply chain management. The diagram shows that information obtained

from the customer flows all the way to the supplier. To meet the demand of the customer, material, resources, and finances must flow through to the supplier, manufacturing, distribution and ultimately the customer. These are the key players of the SCM. It is to be noted though, that distribution can either be done by the manufacturing company or outsourced to a logistics company.

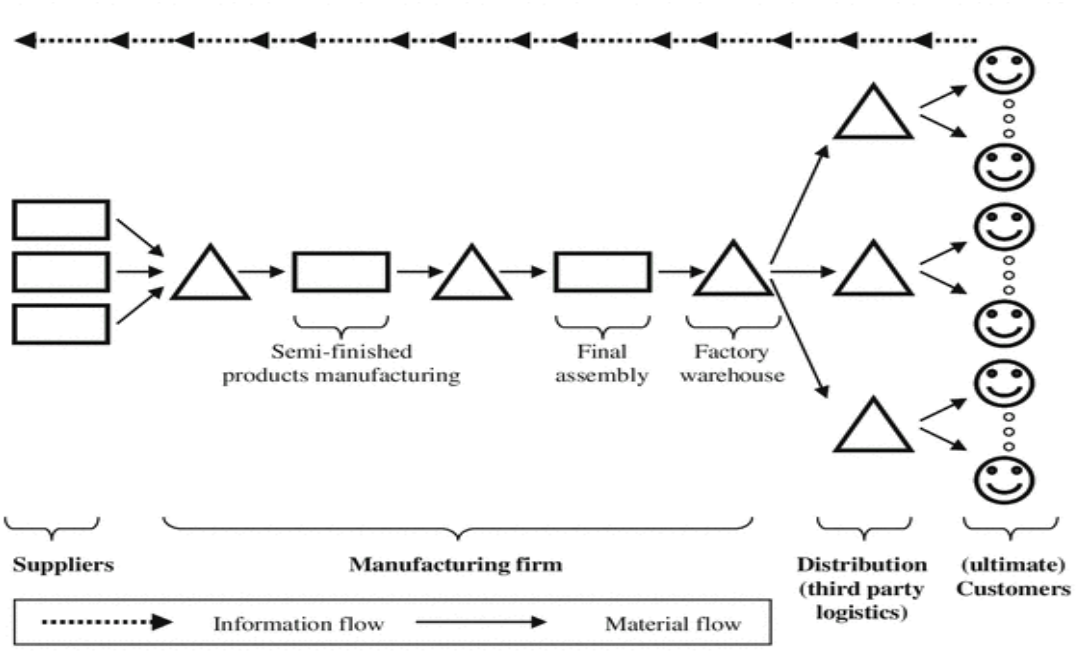

Figure 2.1 Supply Chain Management.
Source: Stadtler (2015)

2.2.1 Overview of SCM

SCM was first mentioned in 1982 with the aim of enabling people to understand that supply chain is not a single entity, but a connection of segments and linked responsibilities in logistics that if done correctly, would give a business a competitive weapon against rivals by reducing inventory and other costs while meeting the demand of customers more effectively and efficiently (Ellram & Cooper 2014:9).

Supply chain as an activity in supply chain management is not static but changes depending on the demand of the good or services. It can also be because of a new

product being introduced or introduction of current products into new geographical markets (Bart, Constantin, Jan, Jagjit & Xiande 2016: 1696).

Effective SCM enables a business to ensure competitive advantage of rivals in the industry. SCM activities form part of the primary activities of the value chain. A value chain is made up of primary activities (procurement, operations, distribution, sales and marketing, service) and secondary activities (infrastructure, human resources, general administration) (Hough, Thompson, Strickland & Gamble 2011:126). This is consistent with the Resource Based View theory that competitive advantage can be gained from aligning SCM activities (Ellam & Cooper, 2014:11). However, Barney (2012:4) argues that although resource based view theory of resources and capabilities, identifies heterogeneous purchase and supply chain management as a source of sustainable competitive advantage, it is not necessarily so. Instead, it becomes a source of competitive advantage if it is homegrown (capabilities build within the organisations) supply chain.

Supply chain management includes the planning and managing all actions that are needed in sourcing, locating, transforming and all other logistics management activities towards production and delivery of final goods. Included in this is the organising and collaborating with suppliers, intermediaries, third-party service providers and customers who for part of the channel collaborates (Canadian Supply Chain Sector Council, 2016). It is important that an organisation have a supply chain that can respond promptly to the changes in market demand. The ability to respond timeously can enable a company to lower manufacturing costs and eliminate non-value added activities. (Haq & Boddu 2015:31).

One of the elements in SCM is supply management. Supply management focuses on strategic purchasing and managing relationships with suppliers. Strategic purchasing is a proactive effort that the organisation makes to build a mutually beneficial relationship with their suppliers, which ensure efficient procurement. This also ensures that suppliers are committed to creating value. Managing relationships with suppliers enable management to help firms to be flexible in their purchasing needs. It also assists

management to assess which suppliers need to be kept and which need to be released (Phan 2016:5). It is, therefore, critical (acknowledge of the interdependent relationship that exists between organisations, such that failure of a member to act in the best way will have a fatal impact on the supply chain) is emphasised in the SCM (Nguyen, Dessouky & Toriello 2014:108).

Phan (2016:8) states that it is important that the purchasing activity is done with the aim of obtaining goods or services at the best price, timeously, in the right quantity from the right source and at the correct quality. Among the various purchasing objectives, the most outstanding include having a good flow of materials that fulfil the needs of the organisation, maintaining effective relationships with suppliers to ensure continuous and efficient supply of materials. It also involves obtaining best value for money, being able to share information with other departments with an aim of operating in a unified manner (Baily, Farmer, Jessop & Jones 2008, 4; Phan 2016:8).

An additional component in the supply chain is production management. Production management refers to the set of correlated management actions, involved in the production of certain products. Various practices are used to ensure efficiency in this manufacturing. These include Just-In-Time (JIT) and Total Quality Management (TQM), which are also related to concept of lean manufacturing. JIT eliminates overproduction and waiting time, carriage processing time, production and delivery lead-time. When these activities are reduced, they improve profits and return on investment by reducing levels of inventory (Haq & Boddu 2015:44).

Food supply chain management is the use of supply chain activities on agricultural and food products to realise superior customer value at the lowest possible costs (Beske, Land & Seuring 2014:134). The supply chain can be quite intricate in food products. This is due to the short lifecycle and deteriorating quality of perishable foods over time. Temperature-controlled supply chain activities are essential because the lack thereof will result in 50% waste of total materials and products. Time and temperature are the most determinants of freshness (Aung & Chang 2014:189). This is especially true in bakeries where demand fluctuates continuously while freshness remains non-negotiable, even with limited shelf life.

Lean manufacturing is activities in manufacturing that are undertaken to eliminate waste. The JIT practice is essential in the baking industry. This is because the raw materials required for production should be fresh, of the right quality, quantity and from the right source with minimum waste. When a bakery is able efficiently to undertake these activities, it reaches maximum performance and is able to produce the consistent quality that meets and exceeds consumer expectation. To ensure consistent freshness and quality, it is important to ensure that there is an efficient and reliable outbound logistics. Some bigger companies use distribution centres while others deliver directly from manufacturer to the retailer. The latter approach is more efficient in the baking industry to ensure the best quality

As discussed previously discussed, SCM is a flow of information and materials through supplier, manufacturing, distribution to the customer. The researcher's focus was on the procurement, production and distribution activities that form part of the process-based view of an organisation's supply chain (Cohen and Mallik, 1997).

2.2.2 Challenges in SCM

The fundamental challenge for supply chain management is how to efficiently integrate and optimise supply chain operations with dispersed marketplaces and characteristic demands using the latest advances in Information Technology (Lu & Swaminathan 2015:2). Robinson, Fernandez & Goode (2007:2), state that an increase demands for quick and timely delivery of products and services at low costs. In addition, a sophisticated customer that has complex demands poses a challenge to SCM. Additionally, a phenomenon called the Bullwhip effect in which a change in the quantity demanded for a product, as when changes in demand for a product affect the activities down the supply chain. This increased changes in the order process and needs each level in the supply chain to adjust safety stock to meet demand. However, the challenge is that each level of the supply chain will need higher stock levels that will lead to high costs due to over-stocking. This will also lead to inefficient use of resources because of lack of information needed for planning. The result is that the different sections throughout the supply chain will plan based on average or maximum orders obtained.

Another challenge is that there can be a material shortage due to poor product forecasting. All these could be caused by lack and failure to share information or delay in sharing information. As well as failure of coordination by the different players in the chain and poor flow of material (Van der Vorst, Da Silva, & Trienekens 2007:10).

2.3 THE ROLE OF ERP IN SCM

2.3.1 Overview of ERP

ERP systems can be traced back to early 1960 when accounting and inventory systems were developed. They continue to develop with time and increase with the needs of the organisation. It is an extension of materials requirement planning (MRP) and manufacturing resource planning (MRP II). MRP and MRP II are heavily used in manufacturing companies for handling production and inventory planning activities while ERP systems being used by the entire organisation (Elragal & Haddara 2012:24-25).

Prior to the introduction of ERP, was the invention of the computerised Re-Order Point (ROP) system, which satisfied basic manufacturing planning and controlling need high-volume production companies in the 1960s. In the same period Materials Resource Planning (MRP) application software that was used for planning and scheduling materials for complex manufactured products followed suit. However, the 1970s saw the production and marketing of a standard software for integrated business. J.D. Edwards together with Oracle Corporation introduced this package. This was followed by the improvement and increase in the functionality of MRP to Manufacturing Resource Planning (MRP II) in the 1980s.

The idea of an integrated software package where sales, inventory, and purchasing transactions updated both inventories and accounting information was an innovation; this was designed to replace the several stand-alone systems that many companies used at the time. This resulted in the introduction of the Computer Integrated Manufacturing (CIM) framework whose strategy was to help integrate information in a consistent, effective manner across the enterprise. It was then acknowledged that there

were certain silo functions in the enterprise that needed to be integrated into the system and that their integration would not affect the general ledger. This led to the introduction of Enterprise Resource Planning (ERP), a term that was coined by Gartner group in the 1990s. Figure 2.3 gives a summary of the evolution of the ERP system. The market leaders of the ERP software at the time were Oracle, PeopleSoft, Baan and SAP (Jacobs 2007:358-361).

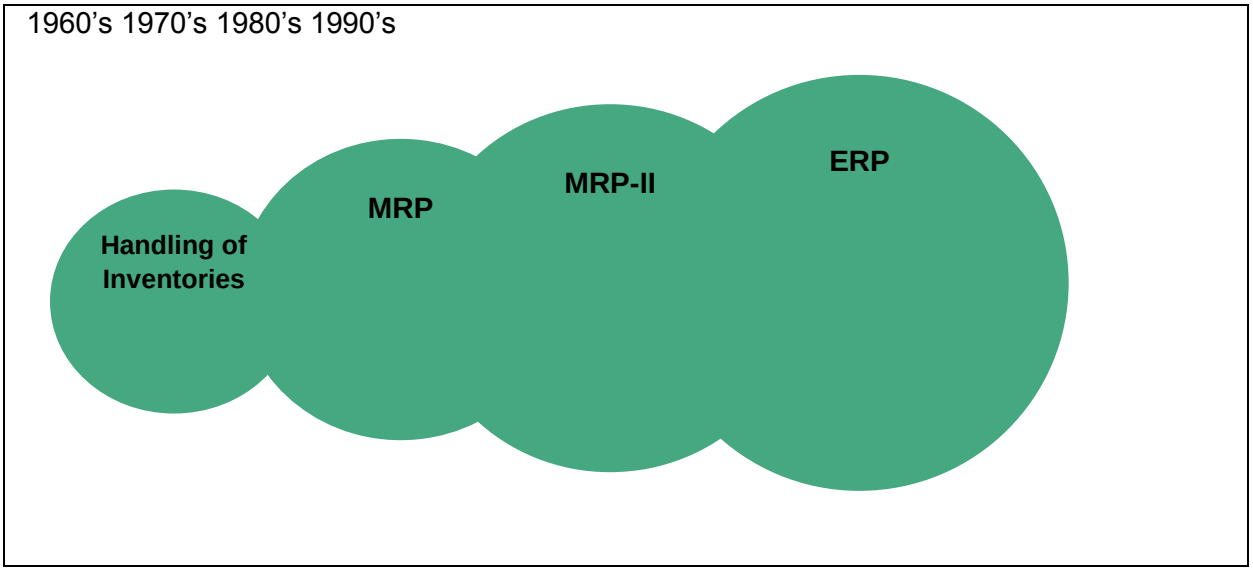

Figure 2.2 Evolution of the ERPs

Source: Kakouris and Polychronopoulos (2005)

Research shows an anticipated ERP market growth of approximately $41.69 billion in sales by the year 2020. They further expect that between 2014 and 2020 the market will have a 7.2 percent in growth (Continelli, 2016). Currently, over 85% of the companies, globally, that responded to a survey conducted by panorama consulting (2016:3) especially those in manufacturing are increasing their implementation and use of ERP software, both in the number of locations in which they operate, upgrading to the latest versions and introducing ERPs where there was no software in place. They do this with the expectation that this software will improve the performance of their businesses. (Select Hub, 2015).

2.3.2 Effectiveness of ERP in SCM

Information management is the most important resource used in tracking and tracing a product along the supply chain. SCM interface in the supply chain facilitates information flow and show the inter-organisational aspects of product supply (Wanjiru & Makori, 2016:43). For an organisation to share information timeously and accurately an ERP system is used. However, for the system to be effective Ruivo, Oliveira and Neto (2014:170) explain that it is important to have a training programme so that users can understand the system and navigate their way through it with minimum mistakes. This training will also make them more familiar with the system, which will result in increased usage. To emphasise this, Nwankpa and Roumani (2014:225) explain that it is important for an organisation to create learning capabilities that will facilitate organisation-learning processes because, without an efficient organisational learning capability, firms may not profit from learning by using which emerges as users gain an understanding of the strengths and weaknesses of the ERP system. In order to determine whether the system has simplified the tasks that have to be performed depends on the age, motivation, cognitive abilities of the user in order to determine whether tasks performance has been simplified. The simplicity of the task will result in increased effectivity, efficiency, and satisfaction, which will eventually yield in substantially more productive and competitive companies (Mittelstädt et al. 2015:454).

ERP systems are used in the supply chain activities to enable operational efficiency by recording transactions, making information about these transactions easily available and accessible. It also facilitates the workflow between and within a company regarding standard activities (Qrunfleh & Tarafdar 2014:342). Additionally, Kagiri (2016:12) found that ERP eradicates time wastage and helps enhance the efficiency and effectiveness. This system has been seen to reduce cycle time, which results in improved supplier management. It also decreases manufacturing lead times and improves on-time delivery measures. Furthermore, operational costs are effectively reduced while productivity is improved. All these are achieved when the system is aligned with the business processes of the organisation (Huang & Handfield 2015:4-5). Management of

organisations that use ERP systems feels more confident in giving their clients richer, accurate, and effective information that has been integrated and analysed by the system. It also enables the organisations to issue purchase-orders and provide invoices timeously. In addition, it provides a more efficient management of inventory (Peiris, Jung & Gallupe 2015:42-43). Naveed et al. (2016:38) warn that trying to manage a supply chain without an ERP system may be an enormous loss of resources. However, Payne (2011) warns against use of an ERP application that uses a bill of materials (BOM) because it does not properly account for the unique business processes of a bakery and manage them.

The supportive actions of top management enable relaxing of dominating routines, supporting norms that promote the routine and advanced use of the system which are critical to the success (Shao, Feng and Hu 2016:132). Computer self-efficacy, which is the amount of confidence that a user has in using the technology, is a critical component. This confidence contributes to the perception they have on the usefulness of this technology; additionally, technical support increases the possibility for employees to appreciate the work and perform better by using this new system. Technological complexity restricts the amount of knowledge users can assimilate before using the system. Higher complexity causes anxiety in the user and thereby reduces the likelihood of its usage (Rajan & Baral 2015:107).

Having strong technical resources in the Information Systems (IS) department is important because if an organisation does not have these resources it fails to respond promptly to changes in the market and in the Information Technology (IT) environment and adapt to current trends (Nwankpa 2015:337). Dhillon, May and Caldeira (2013:105) state that technical support enables an organisation to achieve the most organisational IT competence and system use. Therefore, if there is poor technical support, there is less possibility of the system being used because it will take longer to resolve any technical issues that the user experiences. Conversely, if there is technical support, the use of the system will improve system process effectiveness.

2.3.3 Measuring the effectiveness of ERP system

There are various theories that are used when discussing the effectiveness of Integrated Systems, including ERP. One of them is Technology Adoption Model (TAM).

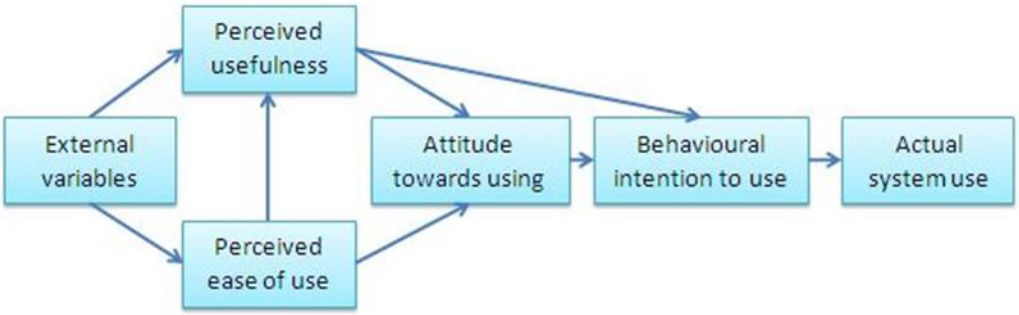

Figure 2.3 Technology Acceptance Model

In this theory, Davis (1989) states that a specific IT software is likely to be accepted by possible users if these users perceive the system to be useful and easy to use. This means that potential users weigh the likely benefits of using IT against the probable loss they may experience when deciding on the IT system to adopt or reject. If the user perceives the system to be useful and easy to use, then they are more likely to use it. Their attitude towards the system has an impact on how they use it and their ability to produce and share information with internal and external stakeholders (Al-Jabri & Roztocki 2015:308). It is important, therefore, to obtain a commitment from staff that uses the system to obtain maximum benefit. This will afford the organisation to have a competitive advantage over its peers. Rajan and Baral (2015:105) confirm that an organisation should adopt an ERP system from the perspective of their employees. This will help their employees to be better prepared for the new challenge that they will face and use the new technology efficiently and effectively. It is important to have strong technical resources in the IS department because this enables a company to respond promptly to changes in the market, IT environment and adapting to current trends (Nwankpa 2015:337).

There should be a measurement framework which evaluates multiple aspects and criterion to facilitate measurement of the effectiveness of ERP against strategies of a

firm and in terms of the direct impact that they have on the organisational processes and information integration (Shen, Chen & Wang 2016:129).

Gable's model, which is based on Delone and McLean's model of measuring information systems, identifies six factors that are considered when the performance of a system is measured. These factors are vendor or consultant quality, the system quality, information quality, individual impact, workgroup impact and organisational impact (Amid 2014:26).

Traditionally, when the effectiveness of an ERP system was assessed, only two categories were considered. These were the financial measures (evaluating the deviation between the actual costs from the budgeted costs brought using the system) and the technical measurement of the effectiveness. These measures have been divided into the four perspectives that are usually used in a basic balanced scorecard. They were first developed and proposed with the goal of combining the use of financial and non-financial measures and give detailed information (Rosemann and Wiese 1999; Fang & Lin 2006:256-257, Batada & Rahman 2012:604).

A Balanced Score Card (BSC) (Kaplan and Norton 1992) measures both the tangible and intangible aspects of information system effectiveness. It provides tangible and intangible performance indicators. BSC is divided into four dimensions. These dimensions are financial perspective, customer perspective, Innovation and learning and internal business perspective. The indicators using the financial perspective, the organisation aims to determine if the ERP system has reduced operations and administration costs while increasing productivity. Standardised procedures that are set when configuring the ERP system due to reviewed business processes result in reduced operations. The use of the system enables the organisation to respond rapidly to customer needs. This may result in increased sales and increased market shares. Customer perspective aims to measure the increase in customer satisfaction. For this to be experienced there should be a full commitment by the end-users in the organisation that is using it. These users should be satisfied with the system; they should be comfortable with their use of the system; they should also obtain prompt feedback from their vendor when they experience problems in using the system. Another factor that

affects the customer's perspective is the ease of learning using the system, which should also be considered when evaluating its effectiveness. The next perspective that forms a component of the balanced scorecard is innovation and learning Operating Costs perspective. This perspective considers the speed at which information is updated, the innovative staff training material and improved training processes can serve as performance indicators. In addition, the organisation can determine the number of new system research and development projects offered by ERP vendors and their ability to deploy new information system functionality, and how easy it is to deploy new information system functionality and the process innovation capability and the ability to adopt new innovation processes. Lastly, to measure the ERP system in terms of internal process, the company can measure the cross-functional processes, cross-functional integration ability, improved standard procedure across different locations, reduced input resources, ability to integrate information systems, improved operational efficiency and IT system availability and uptime are performance indicators that are based on intangible benefits of ERP systems (Rosemann & Wiese 1999: 778-782; Shen, Chen & Wang 2016:131-132).

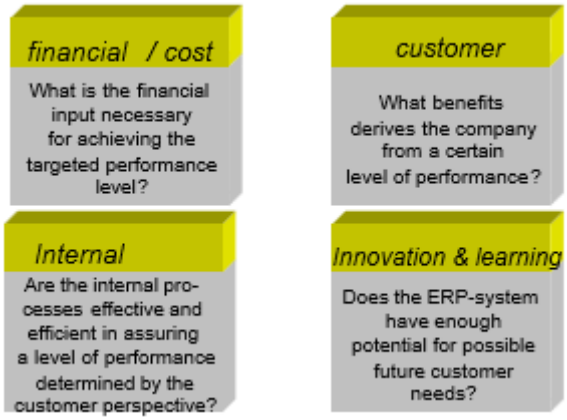

Figure 2.4 Balance Scorecard of the ERP

The Balanced Scorecard and the TAM model was used in the study because they measure the effectiveness of ERP from a broader approach which in a way that will allow the investigation of the business practices on the use of ERP systems.

2.3.4 Benefits of using ERP in SCM

An ERP system is an information system that, used throughout an entire organisation, integrates all the business processes to increase efficiency and maintain a competitive position. It eases the smooth flow of common functional information across the whole organisation. (Addo-Tenkorang & Helo 2011:19). This system automates most functions in an organisation in a way that makes reporting and information available in real-time for strategic decision-making (Azevedo, Romão, & Rebelo 2012:265). Additionally, Eid and Abbas (2017:5) observe that when an ERP system is used in an organisation, it improves employee productivity because of better system quality, integration, smoother information flow, faster business processes, and better support for decisions.

When the business processes of a firm are in place and the ERP system is effective, it promotes the smooth flow of data among all the stages of the production cycle with the various modules that are implemented. The systems are built on a shared database, which makes it easy for every department of a business to input and store data in real-time. This also reduces the likelihood of incurring mistakes at various stages of production. They also reduce lead-time. It is therefore important that a FMCG company implement a fitting ERP software (Importance of ERP software in FMCG industry, 2014). Huang and Handfield (2015:4-5) states that ERP systems have been shown reduce manufacturing lead times and providing a better on-time delivery measures.

Many companies invest large amounts of money when adopting an ERP system to enjoy future benefits. A business firm needs to promptly adjust their procedures and operations in a way that is aligned with ERP business processes, to ensure compatibility. It should arrange and manage an effective ERP framework through Business Processes Re-engineering (BPR) efforts, which should enable it to control and improve costs (Elragal & Haddara 2012:24). This is another necessity when using the system because it aligns the functions of the system with the activities to ensure efficiency. If ERP is executed properly, different functions of the department get connected, manufactures can see orders as soon as they are received and purchasing

gets real-time reporting on what the manufacturing needs (Verma & Boyer 2010:486). According to Bhati, Trivedi & Sarangdevot (2016:206) the strength of an ERP software is its ability to provide accurate information in less time, both at an abstract level and in a more detailed way.

This software integrates a complete range of processes and functions of a business in order to show complete assessment or view from a single information and IT architecture (Chou, Chang, Lin & Chou 2014:268). Galy and Sauceda (2014:313) explain that the system is stored in a centralised data centre for the whole firm, allowing the user with access right to access all system information which they are granted access to (Galy and Sauceda 2014:313). The ability of the employees to have access to this information allows them to be flexible and to make decisions that they previously would have consulted management on (Rajan & Baral 2015:107). According to Şahin and Topal (2016:401), it is important to have a forecasting/demand management system, in addition to an ERP system, because it has a positive effect on the cost and financial performance of the organisation. Bhati and Trivedi (2016:29) confirm the ability of the system at forecasting trends.

The use of ERP systems improves operational efficiencies. It enables availability of real-time information, improved quality reporting, easy and flexible generation of information that facilitates decision-making. It also integrates all other applications that are used in the enterprise. Additionally, it improves the decision-making process (Kanellou & Spathis 2013:20-21). ERP systems allow firms to be agile by refining operations, building organisation and inter-organisational connections through rearranging and reconfiguring processes. It also allows an organisation to standardise processes, which result in simplification of certain processes (Seethamraju & Sundar 2013:141).

Although there is still a growing interest in the use of integrated ERP systems, there are many companies that are moving towards stand-alone software to replace some functionalities of the ERP systems. This compromises the swift and reliable intra-organisational information flows. This is because the integrity and currency of the information are jeopardised regardless of the alternative application used. It is also

weighty to reconfigure the software because one needs to be very careful when integrating different features that are used throughout the organisation. There has to be a perfect fit when business processes are modified, additional features are integrated, and the perfect fit is often unachievable.

Some organisations mitigate the inflexibility challenge of ERP by implementing stand-alone tools then incorporate the information obtained. They further argue that this approach defeats the main objective of using the system (Tenhiälä & Helkiö 2015:148-150). An additional argument against the system is that it is inflexible because it is designed in standard form that is required during implementation. The system is rigid, hierarchical and has centralised control. They use out-dated technology. Some use technology that is based on individual users, which make the licence very expensive (Azevedo et al 2012:266).

From the above discussion, it is observed the ERP systems have benefits and drawbacks. Nehzati, Romsdal, Dreyer & Strandhagen (2014:1) explain that companies have adopted ERP system to support their internal processes. They are also better able to collaborate with other departments. This has resulted in increased for various functionalities of this software.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter discuss the research methodology that was used in conducting this study. It defines the different paradigms that are used in research and elaborates on the paradigm that was used for this study. It discusses the research approach that is used, the research methodology applied, the sampling design and how ethical issues were addressed. Additionally, it provided and outlines the data collection methodologies and selected method discussed. This chapter ends with a summary.

3.2 RESEARCH PARADIGM

It is important to consider and decide on a research paradigm at the beginning of the research design. A research design is to ensure that the evidence is gathered in conducting the study allows the researcher to respond to the initial question as explicitly as possible. In defining a paradigm, Oliver (2014:29) states that it usually refers to 'the broad worldview which informs an approach to research'. Collis and Hussey (2014:43) also defined it as a 'framework that guides how a scientific research should be conducted based on the system of beliefs and assumptions, of the people, about the world and the nature of knowledge'. The paradigm also determines methods of collecting and analysing data.

There are two main research paradigms in research namely, interpretivism (qualitative) and positivism (quantitative) paradigms. Positivism rests on the premise that there is a single reality and objective. It is a deductive process by using explanatory theories to explain this social phenomenon. The interpretivistic paradigm rests on the assumption that there are multiple social realities in our minds and subjective. In involves an

inductive process with the aim of providing an interpretive understanding of social phenomena within a particular context (Collis & Hussey 2014:43-44). When deciding on the paradigm to use, the research has to consider the type and nature that the research has to take. An interpretivistic paradigm was selected for this study. This is because the researcher wanted to obtain an in-depth understanding of the business practices of each bakery used in the study. This means there are multiple realities that are experienced. Additionally, the author desired to gain an in-depth understanding of the business practices of the bakeries and how these influenced the ineffectiveness of the ERP system in the procurement, production and distribution activities of their supply chain.

Another reason for using exploratory design is that there is a likelihood that there are many dimensions hence this approach will enable the research to describe the issue through its various facets and to be able to discover the problems that exist with a phenomenon (Leedy & Ormrod, 2010:135-136). This design is relevant because the research wants to discover problems that are experienced in the use of the system and identify the business practices of the bakeries that result in the ineffectiveness of the system. From this, an interpretive understanding of the social phenomena will be induced. This research was conducted with five managers from the procurement, production and distribution departments of the three bakeries (Blue Ribbon, Albany and SASKO) that were being studied.

3.3 RESEARCH APPROACHES

Secondary data was collected through a literature review. This was done by synthesising literature from accredited journals. The literature review discussed the use of ERP systems in bakeries.

This qualitative research was done using content analysis on the content of a website and scheduled interview. Content analysis is a qualitative method used for analysing data and interpreting its meaning. This is a research method that represents an organised and unbiased way of describing and quantifying phenomena. For it to be successful there should be a possibility of condensing the ideas that describe the

research phenomenon by creating categories, concepts and conceptual maps (Elo, Kääriäinen, Kanste, Pölkki, Utriainen and Kyngäs 2014:403). The content analysis was by content analysing the content of the websites of the three bakeries, Sasko, Blue Ribbon (Port Elizabeth bakeries) and Albany (Bellville) that are being studied. Included was the website of the parent companies of these bakeries. As technology advances, there are more sources of information for content analysis. Neuendorf (2016:202) emphasises the importance of understanding that interactive user of media plays an active role in adapting, altering and producing content. This means that there is a continuous update of the information that is shared on the websites used as sources. It is essential, therefore, to note the period the information is obtained from a website that is being used as sources. The content analysis was followed by conducting interviews scheduled, through the use of open-ended questionnaires, with officers in the three departments (procurement, production, distribution) of the three bakeries.

3.4 SAMPLING DESIGN

In qualitative research, the researcher obtains data from numerous sources and different people. Information can be obtained from, but not limited to, textual material and objects. The entities that are selected from obtaining data comprise of the sample of study while the process of selecting these entities is called sampling (Leedy & Ormrod 2010:146),

3.4.1 The sample

A sample is a subset of a research population. Oliver (2014:149) explains that a research population is the total number of individuals whom the results of the research are intended to apply for the study. He further clarifies that where it is not feasible to collect data from all the individuals, a sample that represents the population is selected and can be applied to the population. This means that the sample size is relative to the sample population.

When conducting a content analysing the contents of the website, the websites of the three bakeries being studied were content analysed. Additionally, a purposive sampling,

a non-probability sampling in which a researcher identifies particular respondents as being potentially able to provide useful data, was used in identifying the sample size to be used when conducting scheduled interviews. The interviews were conducted with officers from the procurement, production and distribution departments of the three bakeries. Initially, the researcher had intended to conduct scheduled interviews with three officers from the three departments of the three bakeries. This would have been twenty-seven (27) respondents. However, only five out of the potential 27 respondents participated. Nevertheless, the sample size is not of great concern for a qualitative research because the aim is to obtain a rich in-depth understanding of somephenomena. In order to be effective in the interview, it is important to know the scope of the study. This also affects the sample size that is needed to have a relatively good representation of the population. Barnham (2015:839) states that smaller samples with more in-depth study produce improved mental evidence that can be attained through extended dialogue and analysis.

3.4.2 Data Collection measuring instrument

Elo et al (2014:406) describe the steps that are following in conduction a content analysis. Firstly, the design step is when the researchers state what they wish to know and identify what the source of relevant information is or where it can be accessible. Then the unitising step is when the units of analysis are defined and identified. These can be sample units and recording units. This is followed by sampling, drawing a representation of the population. Next is coding, which describes the recording units or classifying them in terms of categories the chosen issue that is being analysed. Drawing inference is the most important step of the content analysis, which applies the coded data to the phenomenon that is being studied. The last step is validation. Validation is necessary for any research effort. However, in qualitative research, the study is tested for accuracy and trustworthiness.

For the research, these steps were followed when conducting a content analysis of the three websites that were being studied. The design was to get background information about the bakeries being studied and their operational activities. The information was

accessed from the websites of the bakeries and the website of the parent companies (corporate level).

The information found on the website was not sufficient for conducting the study and addressing the research questions. To address this deficiency, interviews were conducted using interview schedules by using open-ended questions. An interview schedule is when an instrument has been used and validated in other studies. The researcher uses the same questions for every potential respondent. The questionnaire was adapted from one that has already been used in measuring the effectiveness of ERP systems using the Balanced Scored card. A balanced scorecard is a planning and managing system that is generally used by organisations to measure performance against the global goal (Batada & Rahman 2012:604). The identified respondents were employees of the departments being studied. A telephone interview also had to be conducted because one of the bakeries is in the different city and financial constraints made it difficult to conduct face-to-face interviews. The research instrument was made up of many open-ended questions so that the respondents would elaborate on the responses they give. This also enables a researcher to probe in order to obtain rich data. The balanced scored card interview schedule was used to measure the view of respondents about the effectiveness of the use of ERP systems. The questions are adapted from previously used measurements; hence, they were not piloted. The questions are divided into two main sections:

Section A: Demographical information

This section was used to collect the demographical data of the respondents;

Section B: The balanced scorecard

This section was used measured the performance of the system by using the element of the balanced scored card approach.

3.5 ETHICAL ISSUES

Oliver (2014:157) emphasises the importance of discussing the steps taken to treat the research participants with care, sensitivity and respect just for the basic fact that they are human beings when conducting a research. However, he admits that dealing with ethical issues is complex because opinions on the manner of addressing these issues vary with individuals.

Prior to commencing with the interview, the researcher ensured that the respondents who agreed to participate in the study had a thorough understanding of the nature of the research and their role in it. This was done by sending emails explaining the background of the researcher and of the study and attaching the questionnaire that would be used for conducting the interviews. This was following by telephone calls to the respondents to explain and address any queries that were raised. The researcher also elaborated on the process that would be followed when conducting the research. It was explained that the interviews would be recorded, to ensure that the dialogue is accurately captured, as they were conducted and their responses would be published in a written report of the research. The potential respondents were made aware that their participation was voluntary, they would not be incentivised for participating in the study, and there should feel free to withdraw at any point of the interview.

Patterson and Malpass (2015:681) emphasise the importance of creating a supportive and inspiring atmosphere when eliciting insights from the respondents. This means that the respondent should feel at ease and some degree of control over the data collection process (Oliver 2014:160). To guarantee this, an appointment was made in advance with the potential respondent and they were given an opportunity to decide on the time and venue that would be most suitable to them. The participants from the Port Elizabeth bakeries preferred to use the company boardrooms. They were confident that it had sufficient privacy. When conducting the telephone for the bakery in Cape Town, the respondent preferred that the interview should be conducted after working hours.

3.6 DATA ANALYSIS

There is various data analysis tools used for qualitative research. These include content analysis, discourse analysis, cognitive mapping, conservation analysis, narrative

analysis and repertory grid. Content analysis was done on the content of the website and data collected from the interview schedules when conducting the study.

3.7 TRUSTWORTHINESS AND AUTHENTICITY

The data obtained from the study is qualitative. The researcher used a measuring instrument that was previously used. Qualitative research is usually criticised for being subjective, being subjective to the biases of the researcher and lacking generalisation by producing large quantities of detailed information about a single phenomenon. However, in order to determine the trustworthiness of qualitative research, four criteria that are used are credibility, dependability, confirmability, and transferability (Cope 2014:89). The aim of trustworthiness in a qualitative inquiry is to support the argument that the inquiry's findings are worth paying attention to (Elo, Kääriäinen, Kanste, Pölkki, Utriainen, & Kyngäs 2014:2). The concept of credibility, authenticity and trustworthiness means that the study findings are accurate or true, not only from the standpoint of the researcher but also, from that of the participants and the readers of the study. Credibility means that the participants involved in the study find the results of the study true or credible. Transferability is achieved if the findings of a qualitative study are transferable to other similar settings. The description of the setting, context, people, actions, and events studied is needed to ensure transferability or external validity in quantitative terms. The study has dependability (reliability) if the process of selecting, justifying and applying research strategies, procedures and methods are clearly explained and its effectiveness evaluated by the researcher and confirmed by an auditor, which is called 'audit trail'. The study enjoys confirmability when its findings are based on the analysis of the collected data ((Yilmaz 2013:318, 320).

The findings of this study are trustworthy because it is important for the bakeries to align their practices in a way that makes effective use of the ERP system. This enables the bakery to have a competitive advantage. The findings of the research are accurate from the research, participants and readers' viewpoint because there was no obligation to take part in the study. The research is credible because the participants find the results

of the study true. The findings of the research are transferable to other similar settings. The study is dependable because the selection process of the user of the system in the three departments of the supply chains was justifiably used in conducting the research since they use the system in their daily operations. The findings were based on the analysis of the data and are therefore confirmable.

3.8 REPORTING AND SYNTHESIS

Collins and Hussey (2014:344) define synthesis as being able to up information from other information. This involves getting different themes and concepts from the research and forming new integrated patterns. The goal is to use items of data to give a general explanation of what is happening.

3.9 DELIMITATIONS OF STUDY

The study is limited to employees of the procurement production and distribution department of Albany, SASKO and Blue Ribbon Bakeries. The content analysis of the website content is limited to the websites of the three bakeries being study.

3.10 CHAPTER SUMMARY

In this chapter, the research methodology and all the aspects relating to it were clarified and the background of the research choice to ensure that the results are interpreted in the proper context.

CHAPTER FOUR

CONTENT ANALYSIS OF THE WEBSITE

4.1 INTRODUCTION

The consumption of bakery products has increased due to an increase in household income. This has put pressure on bakeries in increasing production to meet the increasing demand. Additionally, bakeries should ensure that they produce quality products and guarantee freshness while delivering on time, to survive in this competitive industry. To achieve all these, bakeries should ascertain that they have an efficient supply chain. Advancement in technology has contributed to an improved Supply Chain Management (SCM). It also results in reduced costs and ultimately increased profits. Therefore, it is important for bakeries to keep abreast of advancing technology that will enable them to have an effective SCM. Enterprise Resource Planning (ERP) system is one of the technologies that are used to enable to bakeries to have an efficient supply chain. This is an integrated system that allows an organisation to obtain information in real-time.

To date, only a limited published systematic analysis of the use of ERP systems in bakeries can be obtained. This chapter seeks to obtain a better understanding about the business practices of procurement, production and distribution departments of the supply chain in the bakeries, Blue Ribbon, Albany and SASKO using the content of their websites. The research has systematically generated using a sample of the websites of the three large bakeries of South Africa. The content describing the background of the bakeries, their supply activities, how they adopt technologies and how they ensure that quality products are delivered.

4.2 METHOD

4.2.1 Sample Identification

Between 1 November and 31 December 2016, website searches were conducted using the terms ‘Blue Ribbon bakery’, ‘supply chain of blue ribbon bakery’ ‘largest bakeries in South Africa’, ‘supply chain of Sasko bakery’, ‘supply chain of Albany bakery’ using an U.S.-based version of a search engine, Google. The Google search engine can generate more or less consistent results from repeated searches therefore, these results are not affected by previous searches. The inclusion criteria of the chosen websites were the actual websites of the bakeries and the websites that mention some activities related to the supply chain of the three bakeries. The analysis is limited to websites of the three bakeries. It excludes Blue Ribbon bakeries located outside South Africa such as Lesotho, Swaziland and Mozambique.

4.2.2 Data Presentation

Although searches were conducted between 1 November and 31 December 2016, all sights were reviewed, recorded, and coded in February to May 2017. Since websites are complex in structure and content changes frequently, the chosen websites were preserved by performing a print screen of the content and saving them in Portable Document Format (PDF).

4.2.3 Coding Guide Development and Coding Procedures

The author reviewed the three bakeries and drafted a coding guide. Due to the limited time, small sample size and scope of the study, additional coders were not used. However, the author minimised bias in order to allow the respondents’ views to generate consistent definitions and examples. The author coded and reviewed websites until consistency was established.

4.2.4 Coding Instrument

The history, background, procurement, production and distribution activities of the bakery were recorded as present/absent on the websites of the bakeries. The founding per years, logo, fresh quality, production, products and technology are themes that were generated consistently on the websites. The researcher also recorded whether it was depicted in a text picture, or in the video. The following Table presents the definition and example of the recorded themes.

Table 4.1 Definitions and text examples on each theme

Theme	Definition	Text example
Founded	Refers to the period when the bakery was established	"Over 130 years ago" (www.blueribbon.co.za) "in the 1930s" (www.sasko.co.za) "1970. The beginning." (www.albany.co.za)
Logo	Depicts a symbol that an organisation uses to differentiate itself and the products it sells	 (www.blueribbon.co.za)  (www.sasko.co.za)  (www.albany.co.za)

Fresh quality	Conveys that the product was recently made, meets and exceeds client needs and standards	"loaves full of freshness and flavour" (www.blueribbon.co.za) "Provide superior quality goods daily" (www.sasko.co.za) "Provide long-lasting freshness, great taste, superior quality" (www.albany.co.za)
Production	Refers to available materials, facilities or equipment that is used when making products	52 mills, bakeries, depots and distribution points throughout South Africa (www.blueribbon.co.za) Use most advanced baking process and milling techniques and equipment (www.sasko.co.za) Albany Bakeries consists of 13 regional productions sites that supply supermarkets across South Africa (www.albany.co.za)
Products	Refers to products manufactured by the bakeries	Squares: white and brown Bread: Low GI bread (brown, crushed wheat, white), Toaster (brown, white) classic (brown,

		white) Sliced (brown, white) Unsliced (Brown, white) (www.blueribbon.co.za) Bread: white, brown, dumpy, buns and rolls Flour: cake wheat, white bread wheat, brown bread wheat, self raising wheat, bran self raising wheat Bake mixes: chocolate muffin, vanilla, bran, scone, flapjack, cookie (www.sasko.co.za) Superior bread: White, brown, best of both low GI bread: seeded brown, white, whole wheat Ultima bread: multigrain brown, kilojoule controlled brown, rooibos and rye brown, Buns and rolls (www.albany.co.za)
Technology	Refers to ability of the bakery to invest and use advanced technology and derive benefit	Technology plays a key role in increasing efficiency and reducing operating costs. (http://www.foodprocessing-technology.com/projects/albany-bakeries/)

4.2.5 Website Descriptive

The information that was recorded from the websites were the date of retrieval, Uniform Resource Locator (URL), contact information, products-related groups (e.g. Facebook).

4.2.6 Data Analysis

The collected data did not have sufficient information relating to the supply chain activities of the bakeries and how the business practices that affected the effectiveness of the ERP system in their procurement, production and distribution functions of the supply chain.

Table 4.2 Frequency of themes on websites (N=3), %

Theme	Frequency of appearance on websites %	Frequency of appearance of homepage	Frequency of theme in text format	Frequency of theme in picture format	Frequency of them in video format
Founded	100	100	100	0	0
Logo	100	100	100	100	0
Fresh quality	100	100	100	100	0
Production	25	25	25	25	25
Products offered	100	100	100	100	0
Technology	75	25	25	25	0

4.3 RESULTS

The most common themes were quality, freshness and products. The study observed that most common messages were about freshness, quality and happiness. One hundred percent (3 out of 3) of the websites featured those words.

4.3.1 Company information

The information on when the bakeries were founding or the length of period that they have been in operation for were present in 100% of the sites, such as a statement “over 130 years” on the websites. However, there were no observed pictorial or video presentations about the background of the bakeries, nor the historical background on the use of ERP systems in these bakeries. The lack of information on the supply chain of bakeries and the use of ERP, yet the ample information on the freshness and variety of products from the bakeries can lead to a conclusion that these are the prioritising of the bakeries. These bakeries do not think it is important for their use of ERP systems in the supply chain. It could also be due to the cases that the bakeries faced with the Competition Commission of South Africa

4.3.2 Products offered and the freshness

All the websites had information about their products. These were done in pictorial presentation but there were none in a video presentation. All the websites expressed the importance of freshness in their products, such as “believe in super-fresh sandwiches.”

4.3.3 Production and the use of technology

The only website that gave information regarding the use of technology in one of the bakery is the company that supplies it with the technology it uses on that specific bakery. It explained that “the bakery upgraded the production equipment in 2009, however in March 2008 it adopted a symphony environmental technologies’ oxo-biodegradable additive in terms of its bread wrapper.”

4.3.4 Website Characteristics

Most of the websites (75%) gave contact information in various ways, including the telephone, email, the physical address of the bakery head office. They all had links to the corporate level of the company to which the bakery belonged.

4.4 DISCUSSION

The author has observed that there are some limited systematic analyses of procurement, production and distribution activities on the websites of bakeries. It was found that, in addition to showing the background of the bakeries and their logos, the most frequent theme as the variety of products that were offered by the bakeries and the importance of providing freshness and quality.

The limitation of this study is that the findings may not be generalised beyond the sites analysed. Due to the fact that the contents of the websites are rapidly changing, the analysis may not be generalised to the current website. The analysis is limited to the three bakeries (Sasko, Albany and Blue Ribbon) that are being studied and companies that may play a role in the supply chain of these bakeries. It did not include any other bakeries in South Africa. The coding does not reflect the full inventory of every possible piece of content appearing on these sites.

4.5 CONCLUSION

The websites of the bakeries do not provide information on the supply chain activities that get the final product to the final customer. This raises questions about the reason for not doing so. These sites do not even discuss information regarding the use of technology in their activities, especially the use of ERP systems. This content analysis provided information on the look of the websites of the bakeries. If the websites had information on the supply chain and use of ERP systems, it would have enabled the researcher to identify any business practices that make the system ineffective.

The bakeries may have excluded information on the use of ERP systems on the websites because they do not see it as relevant for informing the consumer. Another reason could be the case they faced with the competition commission, which may have

resulted in guarding its information from the public and from the competitors. Since content analysis on the content of the websites of the bakeries had not answered the problem question, an interview schedule was conducted using open-ended questionnaires. The following chapter provides the findings and analysis obtained from the respondents.

CHAPTER FIVE

DATA ANALYSIS, FINDINGS AND DISCUSSION.

5.1 INTRODUCTION

In this chapter, the data collected from the interview schedules are analysed. This was done by giving descriptive statistics together with a content analysis. The analysis was to get an in-depth understanding the business practices of the bakeries in the procurement, production and distribution functions. This was done to be able to understand how these business practices affect the use of Enterprise Resource Planning (ERP) systems. The goal was to identify the business practices that the bakeries can follow in their use of ERP systems to make them effective.

The empirical research was conducted to collect data using interview schedules, where open-ended questionnaires were distributed among the officers in the three departments of the three bakeries. Interviewer-administered schedules were conducted through an open-ended questionnaire to allow respondents to give as much information as possible so that a deeper understanding of their experience can be obtained. The questionnaire adopted from the ERP performance measurement framework based on Balanced Scorecard was used. The questionnaire was divided into sections, one (1) and two (2). Section 1 obtains data on the background of the respondents, their age, gender, qualifications, the positions they hold in the organisation, their length of service in that position, and the software they use in their function. Section 2 acquired information consistent with the four perspectives of the balanced scorecard. These perspectives are a financial customer, internal, innovation and learning perspectives, which measure the effectiveness of the ERP system. The questions are consistent with the information obtained in chapter 2 of the literature review on measuring effectiveness. This second section seeks to obtain a deeper understanding of the

ineffectiveness of the system that each of the three departments in the three bakeries experiences.

The researcher emailed the questionnaires to the human resources or the bakery managers of the bakeries when seeking permission to conduct the interviews. These were then emailed to a sample of nine (n = 9) within the three departments (procurement, production and distribution) of the three bakeries (Blue Ribbon, Sasko and Albany) so that they could have an opportunity to familiarise themselves with the information the researcher is seeking. However, only a total of five respondents availed themselves for the interview from the bakeries.

The entities vary in the types of systems they use in their organisation. The next section gives a background on the systems that each organisation uses in the departments under study. This chapter reports findings of each bakery separately throughout this chapter. The background of each company was presented. The findings of each interview were presented and analysed using the balanced scorecard.

All findings presented aim to answer the following research questions:

- Are there ineffective business practices in the use of ERP systems among the three leading bakers?

The following secondary questions, answer the primary questions:

- How effective is the ERP system in the procurement department?
- How effective is the ERP system in the production department?
- How effective is the ERP system in the distribution department?

5.2 FINDINGS AND ANALYSIS

5.2.1 Descriptive statistics

This section provides an analysis of the first section of the questionnaire. The aim of this section was to obtain a profile data on the respondents. This data includes the gender, age, highest qualification, the position held, the length of service in that position and the

software that is used. The following tables and figures represent the data of the conducted interviews.

Table 5.1 Gender Response rate

Gender	Respondents	Rate %
Male	3	60
Female	2	40
Total	5	100

The above Table shows that 60% of the respondents who participated in the study were male while 40% we female.

Table 5.2 Age Group Response Rate

Age	Respondents	Rate (%)
18-25	0	0
26-35	2	40
36-45	0	0
46-55	3	60
Total	5	100

Table 5.2 shows the diverse age groups that held various positions in the procurement, production and distribution department in bakeries.

Table 5.3 Qualifications of Respondents

Highest qualification	Respondents	Rate (%)
Matric	3	60
Degree	1	20
Rather Not say	1	20
Total	5	100

Table 5.3 shows that a matric is not mandatory for an employee in these departments of the bakeries or to hold a qualification higher than matric. It is observed that 60% of the respondents do not hold a qualification higher than a matric certificate.

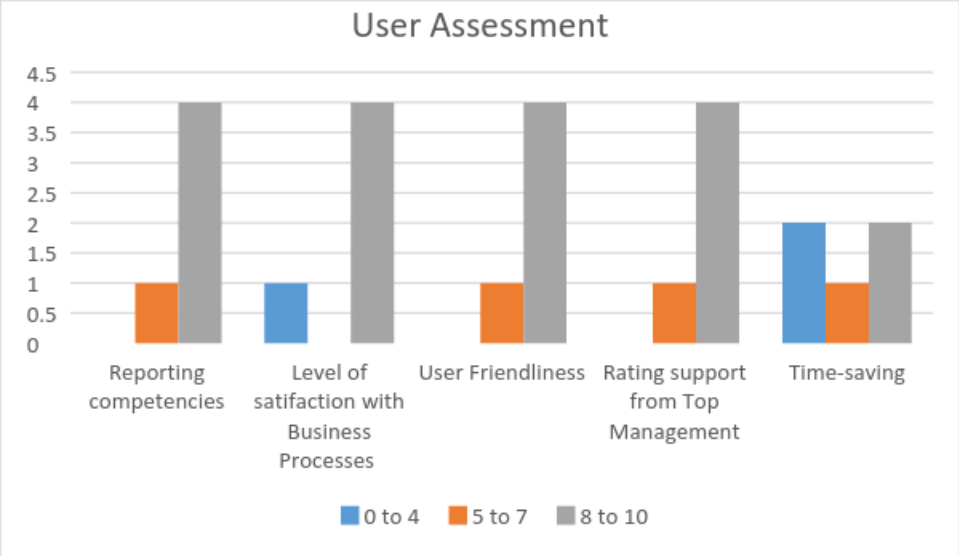

Figure 5.1 User Assessment

Figure 5.1 is a graphical presentation of how the respondents assess and rate the satisfaction when using their software. They rate from 1 to 10, where 1 is no satisfaction and 10 is the most satisfaction. It can be observed that four out of the five respondents (80%) of the respondents appreciate the reporting competencies of the reporting competencies of their systems, also find it user-friendly. They find they appreciate the business process that it brings. They are satisfied with the support that they get from top management when using the system. However, it is observed that less than half of the respondents do not feel that the use of the system saves time.

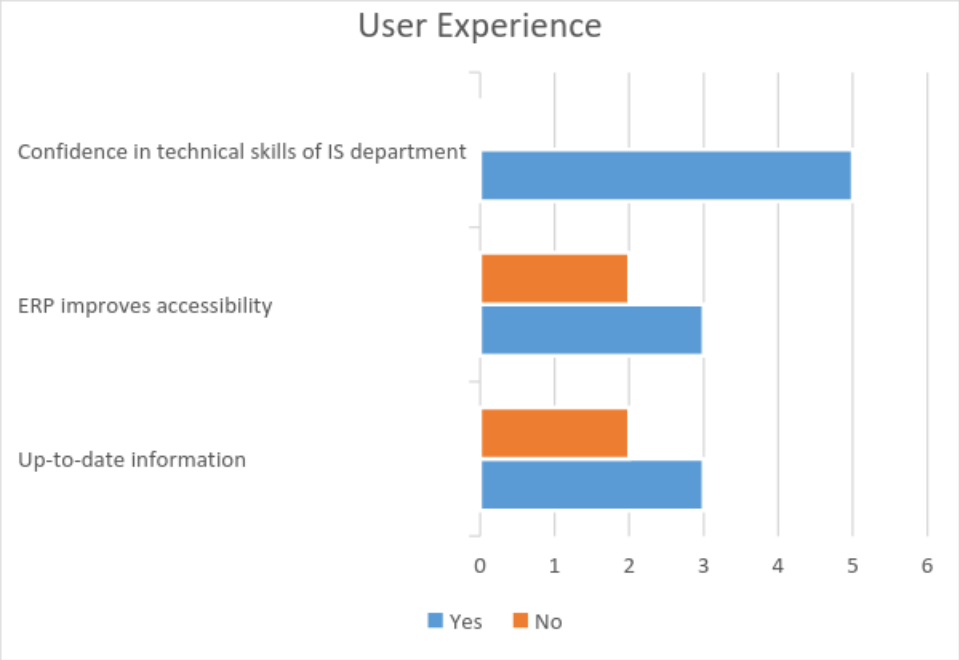

Figure 5.2 User Experience

Figure 5.2 show that all the respondents have confidence in the technical skills of the Information System department and their ability to provide support. Although 3 out of 5 (60%) of the respondents feel that they get up-to-date information from the system and that the information can be easily accessed when needed, it can be concluded that the 40% are not using an effective system that allows them to have up-to-date information which is easily accessible.

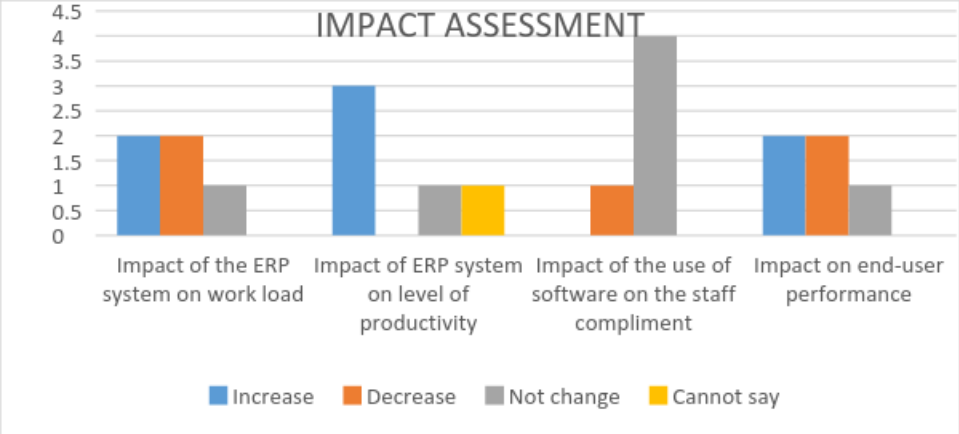

Figure 5.3 Impact Assessment

The respondents reflect on the impact that the use of the software has made to in their departments. Most (80%) of the respondents observed that it has had no impact on the number of staff members. The number of respondents that feel that it has increased their workload is equal to those that feel it has decreased their workload. This means that it, in the given sample size, the research cannot make an absolute conclusion that the system has any impact on the workload. The same is observed regarding the performance of the end-user. However, three out of five (60%) of the respondents observed that their use of the system increased their levels of productivity.

5.3 BLUE RIBBON BAKERY

Blue Ribbon is one of the three studied bakeries. Premier (fast moving consumer goods) FMCG owns it. The bakery is located in Walmer, Port Elizabeth, in the Eastern Cape. The bakery has most of the departments in the building; however, it obtains most of the support from the head office in Gauteng. The building is relatively small and easy to access. There are no major security controls when accessing the reception area. The reception area is an open plan. It serves as an administration and sales area. It is easy to communicate with the staff. For the study, the focus is on the departments contacted namely, procurement (which it refers to as value chain department), production and distribution (dispatch). These three departments use Microsoft Great Plains (GP) 2010,

which is an integrated system used throughout most of the supply chain of the bakery. This system has been in operation since Premier FMCG acquired the bakery from Star bakeries four (4) years ago. However, the production department uses Excel to input data and reporting. The Excel file is stored in Microsoft SharePoint where it is easily accessible nationally.

The questionnaire used the balanced scorecard to measure the effectiveness of the GP 2010 that is used. The researcher emailed the questionnaire to the bakery manager to request permission to conduct the study on the bakery and to request contacts of the possible respondents. The manager identified three possible respondents and forwarded their contact details. The bakery is a busy industry. Therefore, continuous contacts were made, aimed at setting an appointment to conduct an interview. Finally, all the respondents in the respective departments were contacted. Interviews were recorded. The following sessions narrate the responses obtained from the different departments within the bakery.

5.3.1 Use of ERP in Procurement

Blue Ribbon bakery in Port Elizabeth refers to the procurement function as a value chain department. The respondent in this department has been part of the bakery prior to being acquired by Premier FMCG four years ago but has worked in this section for over one year. The respondent has used the GP 2010 since occupying the position, over a year ago for processing and procuring raw materials needed by the production department. They gather information about the required raw material for production based on the orders obtained from the sales department. The sales department obtains orders from customers. This department, then emails the information regarding the orders to the production department in Excel format (as a spreadsheet). The respondent also uses GP 2015 for processing the acquisition of diesel used for distribution vehicles.

Measuring the use of the software used in procurement using the balanced scorecards using the four perspectives.

Research question 1: How effective is the ERP system in the procurement department?

Learning and growth perspective

This perspective considers the speed at which information is updated; the innovative staff training material and improved training process can serve as performance indicators. This perspective evaluates whether the ERP system has met the goal. The goal is to give employees the capability to learn and use the system. It discusses the quality and effectiveness of the training programmes given to the users of the system. When these are in place, the user can use the system and modify process operations. There should also be a provision for timely support

An examination of the data reveals that the department determines the accuracy of the data obtained from the ERP system, the respondent reconciles the information in the GP 2010 against the output obtained from the production department. This is done by comparing the actual quantities used raw materials and the total produced items that are reported in the Excel sheet. The respondent has absolute confidence in the system, which she uses, and her reporting competency, rating it at 10. According to the respondent, prior to adopting GP 2010, the department filled out manual forms by the respective officer. Since the adoption, there has been a significant increase in productivity levels in this department, although there is no actual documentation to confirm it. It has also improved their planning and decision-making. However, this improvement is anticipated. According to Eid and Abbas (2017:5), when an organisation uses an ERP system, enhanced system quality, integration, smoother information flow, faster business processes and better support for decision-making has improved productivity of employees. This is consistent with the experience that the information is easier to access, more up-to-date, more accurate and available in real-time. However, Payne (2011) warns against use of an ERP application that uses a bill of materials (BOM) because it does not properly account for the unique business processes of a bakery to manage them.

The rating on the strength of the IS department is given a 10. This is because the respondent is convinced that this department does an outstanding job in addressing

issues or problems that they may experience in the software they use. The technical support and expertise are exceptional.

If I call them, they respond with fifteen minutes. *They can access and control my desktop from the head office to see what is happening and solve it immediately. However, if the problem we face is a national problem, they notify us that they are working on it. It usually takes a maximum of 1 hour* (Respondent 5).

It is important to have strong technical resources in the IS department because this enables a company to respond promptly to changes in the market, IT environment and adapting to current trends (Nwankpa 2015:337).

The respondent did not obtain formal training when she had to use the GP 2010 system. The predecessor trained the respondent on the use of the system. Shao, Wang, and Feng (2015:591) state that knowledge sharing among employees is helpful in enabling and encouraging employees to use IS. This helps employees to develop a deep understanding of system functionalities. However, Ruivo et al. (2014:170) state the importance of having a training programme so that users can understand the system and navigate their way through it with minimum mistakes. This training enables them to be more familiar with the system. This will increase the system usage rate. Therefore, providing the best level of readiness in applying it. However, the respondent went to the head office to obtain a formal, thorough training on the new GP 2015.

The use of the system has reduced the workload. Although the respondent is unable to provide documentation, she explains that the department used to fill out manual forms regarding the ingredients used by the production department. Sometimes this information would be inaccurate due to the human error. This would also affect the quality of the bread produced. Bhati, Trivedi & Sarangdevot (2016:206) emphasise the strength of an ERP software as being its ability to provide accurate information in less time, both at an abstract level and in a more detailed way.

There has been a high improvement in the level of interdepartmental information integration and collaboration. The respondent said that it is because the GP 2010 is used throughout the entire bakery. The sales department uses it to capture orders,

which are in-turn, accessed by the procurement department in order to determine the amount of ingredients needed to meet the requested orders. The dispatch department uses the same system to determine the final production, ensuring that it meets the demand. Galy and Sauceda (2014:313) explain that the system is stored in a centralised data centre for the whole firm, allowing the user with access right to access all system information, which they have access. This enables collaborations between different departments, instead of them operating in silos.

Internal business processes Perspective

Using this perspective, the company can measure the cross-functional processes, cross-functional integration ability, and improved standard procedure across different locations, reduce input resources, ability to integrate information systems, improved operational efficiency and IT system availability and uptime. These are performance indicators based on the intangible benefits of ERP systems.

The respondent can make decisions about the amount of raw material that needs to be ordered, who the alternative suppliers are, and compare the prices. This is for items that are not procured within the strategic business units of Premier FMCG. It also enables easy prioritising of procurement needs since it is easy to check inventory levels. However, Azevedo et al. (2012:265) state the ERP system automates most functions in an organisation in a way that makes reporting information available for decision-making. Kanellou and Spathis (2013: 20-21) emphasise that the enterprise integrates all other applications. It integrates a complete range of processes and functions to show complete assessment or few from a single information and IT architecture (Chou et al 2014:313)

There is no formal training on the use of the software, however, previous employees share their knowledge and experience with these new entrants by on the job training. There is a current upgrade to GP 2015 that is being implemented in phases. The respondent went to the head office of the bakery to obtain thorough training. The current system has reduced the workload in the department. This is because there has been a move from manual paperwork to automation. This system integrates with the other

departments. It has created a high level of interdepartmental integration. The department can determine the amount of quantities that the production department needs to meet the orders obtained from the sales department. However, the production department does not access the system directly.

When there is an issue with the system, an email is sent to help desk. Then help desk will forward a log number to show that it has received the issue. It will call back to solve the issue and to ensure that the solution is useful. Nwankpa (2015:337) explains that having strong technical resources in IS department is essential because it enables addressing the needs of the users and to adjust to current market trends. However, the feedback is faster for issues reported via telephone.

The system has increased departmental productivity since adopting the system.

Before Premier brands took over the star bakery, everything was hand-written on paper. A lot of time was spent counting the raw materials and sometimes there would be inconsistency for quantities used in production because the procurement department would not be aware that it had run out of some ingredients. This ERP system enables me to ensure that the quantities in the store will meet the next production. I am able when I have reached re-order level (Respondent 5).

The use of this system has improved coordination in that it can work smoothly with other departments to ensure that the demands of the customers are met consistently with high quality products. The automation has not changed the business process but it has quickened them. This applies to the whole bakery. Ordering materials and getting them delivered timeously to prevent shortages and to ensure that production is efficient. This is consistent with Huang and Handfield (2015:4-5) that then the system is aligned with the business processes of the organisation, operational costs are effectively reduced while productivity is improved. Hence, the satisfaction level regarding the business processes ranks at 9 out of 10 by the respondent.

Customer perspective

The perspective measures the increase in customer satisfaction, where there is commitment by the organisation to use an ERP system.
The interviewee finds the GP 2010 user-friendly, rating it a 9 out of 10. Furthermore, the opinion on the overall performance of the system is that it is quick and easy to use. There is an overall satisfaction with the system. This is consistent with TAM, which explains that if a user finds a system useful, and easy to use they will be ready to use it. However, the challenge is the current version that is on the pilot (GP 2015). It is not impressive at all, rating 0 out of 10. This later version is so unfriendly to use that the respondent has stopped using it for over two months to the day the interview was conducted.

It is not uncommon to receive this response because it is consistent with the Perceived Ease of Use (PEU) model, which explains that if the user perceives the system to be easy to use and useful, then this user is most likely to use it. However, if the user perceives that the system is not easy to use and not useful, they will be less likely to use it. However, Mittelstädt, Brauner, Blum and Ziefle (2015:454) state that in order to determine whether the system has simplified the tasks that have to be performed depends on the age, motivation, cognitive abilities of the user. The simplicity of the task will contribute to increased effectivity, efficiency, and satisfaction and which will eventually yield in substantially more productive and competitive companies. When the system is user-friendly, the user is better able to satisfy the needs of the customers. The respondent is 40 years of age and is passionate about her job, which could contribute to the reason for enjoying the simplification of tasks brought by the system.

There is a high rating, 9 out of 10 on top management support in the use of the system, and the support within the organisation. The use of these systems is so complex that it involves substantial adaptation and change within the organisational framework. Therefore, the supportive actions of top management enable relaxing of dominating routines, supporting norms that promote the routine and advanced use of the system which are critical to the success (Shao, Feng and Hu 2016:132). When there is the

routine and advanced use of the system, the user is better able to satisfy the needs of the customers. The immediate customer to the value chain is the production department. This has a ripple effect because the end customer, the consumer of the product, down the value chain will also be satisfied.

Financial Perspective

This perspective aims to determine if the ERP system has reduced operations and administration costs while increasing productivity. Reducing operations because of standardised procedures.

The interviewee rates the ability of the system to save time at 10 out of 10 for the GP 2010 compared the time-consuming manual work prior to the adoption. The system has had improved performance tremendously. This is because it enables the ability to determine the required amount of raw material, with minimum waste, needed to produce a given quantity of bread. This also affects their source of supplies. This has resulted in producing consistent quality, nationally. This is consistent with Mwangi and Kagiri (2016:12) that ERP eradicates time wastage and helps enhance the efficiency and effectiveness. It also reduces oversupply. This results in cost savings. However, the rating for GP 2015 is zero out of 10. The user finds it very time-consuming which has resulted in a backlog of two months. The implementation of both systems has not affected the staff complement since there has always been one employee, prior to the adoption and currently.

Although Bhati and Trivedi (2016:29) state the ability to forecast trends as one of the advantages of using ERP, the interviewee finds it difficult to forecast due to the nature of the industry. There is a constant change in demand. Therefore, the system has no impact on the forecasting process

5.3.2 Use of ERP system in Production

The respondent has occupied the current position for over fifteen years. He has worked for the organisation for over fifteen years. This means that he worked for the

bakery prior to the acquisition. He does not use an ERP system in his duties. He uses Excel spreadsheets to record information. Other departments email information to the production department in Excel format. This Excel file is stored in Microsoft SharePoint where other colleagues, nationally, can access it. However, information regarding the activities that occur during production is stored in the GP 2010. The value-chain clerk is responsible for updating the information into the GP 2010 and ensuring the reconciliation. The dispatching department then accesses this information. The dispatch department reconciled the information they collect from the system with that obtained from production. The idea is to make sure that there is consistency.

Learning and growth

This perspective considers the speed of updating information in the system. The innovative staff training material and improved training process can serve as performance indicators.

An examination of data to determine effectiveness of the system used in this department shows the use of Excel spreadsheets instead of an ERP system. There is procedure to confirm the accuracy of the data obtained from Excel spreadsheet received from head office. Additionally, there are random times when the production manager performs a head count of the produced goods to confirm that it is consistent with the information on the spreadsheet. However, the respondent has a lot of confidence in the system rating 8 of 10, 10 being the most accurate. The respondent, who is also responsible for submitting reports, is confident of his competency in carrying out this task. This is consistent with the TAM theory (Davis 1989) which shows that when a user perceives that the technology they are using is useful, they are accepting it and ensure maximum benefit from it.

The respondent does not believe that the use of the Excel spreadsheet has had any impact on the productivity level of the department. However, Eid and Abbas (2017:5) observe that when the use of ERP system in an organisation improves employee productivity because of better system quality, integration, smoother information flow, faster business processes, and better support for decision-making. Although the

respondent does not use ERP software, he believes that other departments can have easy access to the spreadsheet because it is stored in Microsoft SharePoint and that this information is up-to-date. Since the spreadsheet is manually updated, the likelihood of getting real-time information is low and therefore there is lead-time. This is because the ERP system that the organisation uses does not integrated SharePoint. In contrast, Sage, E. R. P. (2014:1) provides solutions that guarantee the dependability of crucial business information and affords users real-time and reliable information.

The respondent ranks the strength of the Information Systems (IS) department at 9, stating that they have a technical knowledge. Having a strong technical resource in the IS department is important because if an organisation does not have these resources it fails to respond promptly to changes in the market and in the Information Technology (IT) environment and adapt to current trends (Nwankpa 2015:337). Therefore, it is important for the technical team to provide the best support.

The respondent did not have formal training on the use of Excel. They learn as they worked. However, when an ERP is introduced into this department, it will be essential to train the users. Ruivo et al. (2014:170) explain that it is important to have a training programme so that users can understand the system and navigate their way through it with minimum mistakes. This training will also make them more familiar with the system, resulting in an increase in the usage rate. Therefore, providing the best training will result in the greatest level of readiness in using it. Additionally, Nwankpa and Roumani (2014:225) state that it is important for an organisation to create some learning capabilities that will facilitate organisational learning processes because without an efficient organisational learning capability, firms may not profit from ‘‘learning by using’’ which emerges as users gain an understanding of the strengths and weaknesses of the ERP system. Learning facilitates the behavioural change that arguably fosters capacity absorption and usage leading to improved performance.

The respondent believes that the system that he uses helps him make decisions regarding the quantities he should use in production. ERP might not necessarily help in this regard. However, Payne (2011) does not recommend an ERP application that uses

a bill of material (BOM), which most are because it does not properly account for and manage the unique business process of a bakery.

The respondent sends and receives Excel files to other stakeholders through email. This can increase the probability of having inaccurate information typed in. This is because the software is not integrated. Bhati et al. (2016:206) state that the strength of ERP software is integrated applications, which assist in providing access to accurate information in less time. The user can access information both at an abstract level and in a more detailed way. The system also improves collaboration between different departments, instead of working solo. This is because there is a centralised data centre for the whole firm. This allows a user who has been granted access rights to access all system information for which they have been granted access (Galy and Sauceda 2014:313).

Internal business Perspective

Using this perspective, the company can measure the cross-functional processes, cross-functional integration ability, and improved standard procedure across different locations, reduce input resources, ability to integrate information systems, improved operational efficiency, and IT system availability and uptime. These are performance indicators based on the intangible benefits of ERP systems.

The respondent acknowledges that the system aids his decision-making process in that it enables him to determine the quantities that are needed to meet the demand. The system enables decision regarding the amount that needs to be produced, given the orders from the sales department, and the available resources. There has never been a need for training in this department because there are no employees and there have been no upgrades. The Excel spreadsheet does not affect the workload in this department. It has not affected the business processes of either the department or the whole organisation. Production obtains Excel and PDF files from other departments. The information from production is also emailed to other departments. This is because it does not use the ERP system. The number of orders that are obtained and the amount of raw materials that are used can determine the level of productivity.

However, Azevendo et al. (2012:265) promote the use of ERP systems in an organisation due to the automating nature where it integrates most functions and facilitates reporting and decision-making. Chou et al. (2014:313) explain that it integrates a complete range of processes and functions from a single IT architecture. It provides accurate information in less time (Bhati 2016:206). There will be a high level of integration.

When this system is adopted, the user should be thoroughly trained so that there are minimum mistakes, which will result in minimum waste or rejects. This is because the users will be able to understand the system and navigate their way through it (Ruivo et al 2014:170). The IS department should continue to provide expert support. However, there can be additional ways of hastening the feedback rate from the help desk. This is necessary because implementing the system will result in increased number of users and more functionality. This is consistent with Nwankpa (2015:337) stating that a strong technical resource in the IS department is essential because it enables a company to respond timeously to changes in the environment and adapt to current trends.

Huang and Handfield (2015: 4-5) caution that there will be a need for the system to be aligned with the business processes of the organisation. This will also result in improved productivity and reduced operational costs. Therefore, the production department should collaborate with the IS department to determine the business processes that will be used when the system is adopted.

Customer Perspective

The perspective measures the increase in customer satisfaction, where there is a commitment by the organisation to use an ERP system.

When evaluating this perspective, the study enquires on the user friendliness of this system. Evaluating this is consistent with the Perceive Usability and Perceived Ease of Use theory stating that when the end-user perceives that it is easy to use a software, they will be more ready to use it. The respondent strongly believes that Excel is user-friendly. He also strongly believes that the system helps him to perform his tasks.

However, he does not believe that the system has any impact on the simplicity of the tasks that he performs. To determine whether the system has simplified the tasks performed depend on the age, motivation, cognitive abilities of the user in order to determine whether tasks performance has been simplified. The simplicity of the task will result in contributing to increased effectivity, efficiency, and satisfaction and which will eventually yield in substantially more productive and competitive companies (Mittelstädt et al. 2015:454). Additionally, the respondent enjoys the support of top management and the organisation. It is essential to have this support in place when using enterprise systems due to their complexity. The use of this system is so complex that it involves substantial adaptation and change within the organisational framework. Therefore, the supportive actions of top management enable relaxing of dominating routines, supporting norms that promote the routine and advanced use of the system, which is critical to the success (Shao et al. 2016:132).

The respondent is generally satisfied with the software used in production. He finds it easy to use. He feels that it meets his needs. He is also able to satisfy the needs of the customers by delivering bread within the expected time at the expected quality. This encourages the respondent to use the application daily. This is consistent with the PEU theory which states that if a user finds software easy to use and useful they are inclined to use it more often.

Sometimes there is a lack of consistency in the bread that is baked. Sometimes the bread weighs more than 700g or the dimensions are different from the required. This becomes a waste in production because the batch will be discarded. This results in wasted time and resources (Respondent 1).

Financial Perspective

The organisation aims to determine if the ERP system has reduced operations and administration costs while increasing productivity. Reducing operations because of standardised procedures that are set when configuring the ERP system due to reviewed

business processes. This perspective measures the ability of the organisation to achieve this goal.

The respondent believes that the software that is being used does not reduce time, rating it at 4/10. The reason could be that the department does not use an ERP system. Huang and Handfield (2015:4-5) state that ERP systems have been seen to reduce manufacturing lead times and providing a better on-time delivery measures. Using the software has not had an impact on the amount of staff compliments. There has always been one end-user since the respondent has been in the department. There has never been a change or an upgrade in the system that is used. The respondent, therefore, has not experienced any change management activities.

The baking industry faces a challenge of constant change in the demand for products. The demand changes daily, and at the time it can change in less than a day. This makes forecasting almost impossible. Generally, planning depends on the orders received from the sales department and some variation will be made based on that. (Respondent 1)

The software used in production is not integrated into the ERP system of the organisation. The sales department must export information for the system they use in Excel format and then email it to the production department. According to Şahin and Topal (2016:401), it is important to have a forecasting/demand management system, in addition to an ERP system, because it has a positive effect on the cost and financial performance of the organisation.

The respondent believes that the software used does not have any impact on the productivity level. However, Huang and Handfield (2015:4-5) purport that using an ERP system improves productivity. The fact that they can provide real-time transaction information enables them to reduce inventory and working capital.

5.3.3 Use of ERP system in distribution

The respondent is in the distribution department of the supply chain. She has occupied this position for two years. However, she has worked in the bakery for four years. She also uses GP 2010. She obtains information from the production department. Her responsibility is to ensure that there is consistency between the information obtained from the production department and that on her side of the system. She has to involve the slicing manager. If the figures fail to reconcile, she investigates the cause of the difference. The differences are usually a result of waste (bread that was not well produced) or other issues. She and the slicing manager should agree with the information on hand. She also has to ensure that the information in her system meets the orders that have been received in the store's department. She then ascertains that production is marked for the correct route for delivery. When the product is loaded onto the delivery truck, the driver is invoiced for the products to be distributed. This invoice is printed from the software. She has to print a physical invoice, hand it to the driver, and ensures that the driver signs for it. The driver will then leave the invoice with the client upon delivering the bread. This invoice is delivered to ensure that the client pays.

All these departments meeting each morning before the start of business, to plan the production for the day, although due to the fluctuating demand, it is often a challenge to plan. They also conduct reconciliation at the end of each shift to ensure the collected information accurately.

Learning and Growth Perspective

This perspective considers the speed at which information is updated, the innovative staff training material and improved training processes can serve as performance indicators.

The respondent reconciles the information that is obtained from the GP 2010 system that is used in the distribution and compares it against the information recorded on the spreadsheet of the production department. In addition, with the assistance of the slicing manager, they perform a head count to ensure that the information is consistent. If discrepancies are identified, then an investigation is conducted. The common causes of the discrepancy are damaged products that result in wastage that may be erroneously omitted by the production department. Furthermore, the respondent is 100%

comfortable in relying on the information obtained from the system and has 100% confidence in the competence of taking care of the reporting function and reporting requirements. This is because the system gives a more detailed up-to-date information that is used in the department. Bhati et al. (2016:206) emphasise the strength of an ERP software as being its ability to provide accurate information in less time, both at an abstract level and in a more detailed way. The activities are recorded as they occur and therefore the user is able to access real-time information. All these findings are consistent with the TAM model that states that a user is more likely to use a software when they find it easy to use and useful in performing their task.

There was no formal training given to the respondent when she joined the department. The predecessor shared the knowledge and skills. Shao et al (2015:591) support knowledge sharing among employees in the use of IS because it enables users to have a deeper understanding of the system. However, Ruivo et al (2014:170) promote a training programme that will allow users to be able to understand the system and be able to navigate their way through it with minimum mistakes. This training will result in increased usage rate, which will provide the best level of usage. The quality and effectiveness of the training programmes affect employees' ability to not only use the system but also modify the certain process. This will also enable them to find more innovative ways of using the system and help create an opportunity for further research and development projects in the use of the system. There has not been an upgrade; therefore, there has been no need for training. However, this perspective measures the process innovation capability and to adopt new innovative processes in an effort to upgrade, the system in order to deploy new IS functionality,

The respondent rates the strength of the IS department at 10 out of 10. The technical expertise and their ability to respond timeously when contacted are impressive. They can access the desktop of the user to be able to have a clearer understanding of the issue(s) faced. They can communicate timeously with all users if there is a common issue nationally. They usually manage to solve the problem within an hour. May, Dhillon and Caldeira (2013:105) state that technical support enables an organisation to achieve the most organisational IT competence and system use. Therefore, if the is poor

technical support, there is less possibility of the system being used because it will take longer to resolve any technical issues that the user experiences. Conversely, if there is technical support, the use of the system will improve system process effectiveness. Additionally, Nwankpa (2015:337) emphasises the importance of having a strong technical resource in the IS department, stating that it enables the organisation to promptly respond to the changes in the market and the IT environment and adapt to current trends.

Since occupying the position, the respondent has not undergone formal training. Ruivo et al. (2014:170) explain that it is important to have a training programme so that users are able to understand the system and navigate their way through it with minimum mistakes. This training will also make them more familiar with the system, resulting in an increase in the rate of use. Therefore, providing the best training will result in the greatest level of readiness in using it.

Internal business processes Perspective

Using this perspective, the company can measure the cross-functional processes, cross-functional integration ability, and improved standard procedure across different locations, reduce input resources, ability to integrate information systems, improved operational efficiency and IT system availability and uptime.

The system enables the respondent to match the orders against production. It also assists in deciding which routes the delivery vehicles will take. It identifies any malpractice such as theft because it is easy to track the movement of bread from production to the final customer. It is also possible to determine notice wastage that may occur in the process. This is because the software automates most functions and provides information that facilitates decision-making (Azevedo 2012:265).

The respondent agrees that the system has reduced the workload.

I was not part of this company when the system was implemented. The previous employee told me that he had to fill out forms to receive the bread for delivery. The invoices were handwritten in a book. Sometimes the book would go missing, which would delay the delivery. Sometimes the bread would taste differently from the previous

batch. It would be much heavier. At times, the customer would return a batch because they are not satisfied. Sometimes, they would find bread that has not been delivered much later, when it is already spoiled. This is because it was difficult to check all the stock and reconcile within the department and with other departments, with limited time. It takes a maximum 10 minutes to reconcile the figures. (Respondent 4).

The system has increased the level of interdepartmental information integration and productivity. It has become much easier to access the needed information and to perform daily reconciliations. It has improved coordination between the different departments within the organisation. The business processes have become faster to perform, rating 9 out of 10.

Customer Perspective

The perspective measures the increase in customer satisfaction, where there is a commitment by the organisation to use an ERP system.
The respondent is thoroughly impressed with the user friendliness of the system and rates it at 10. The experience regarding the overall performance of the system is that it is easy and enables her to perform the required tasks and produce the desired results. This is consistent with the PEU model, which explains that if the user perceives the system to be easy to use and useful, then this user is most likely to use it. However, Mittelstädt et al. (2015:454) state that in order to determine whether the system has simplified the performed tasks depends on the age, motivation, cognitive abilities of the user. The simplicity of the task will contribute to increased effectivity, efficiency, and satisfaction and which will eventually yield in substantially more productive and competitive companies. When the system is user-friendly, the user is better able to satisfy the needs of the customers. The respondent is 27 years of age, and is young, full of energy and has an additional suggestion on improving the system in a way that cuts costs and improves revenue collection.

There is a high rating, 10 out of 10 on top management support in the use of the system, and the support within the organisation. The respondent notes that top management supports the use of the system and encourage innovation. The use of the

systems is complex. It involves substantial adaptation and change within the organisational framework. Therefore, when there are supportive actions of top management, relaxing of dominating routines are relaxed, supporting norms that promote the routine and advanced use of the system which is critical to the success (Shao, Feng and Hu 2016:132). When there is the routine and advanced use of the system, the user is better able to satisfy the needs of the customers. This department benefits in that, it is able to deliver the correct products timeously, especially since fresh delivery is paramount, at lower costs. However, the respondent believes that the system can improve. She suggests incorporating gadgets that will reduce the use of delivery notes.

*Instead of giving the driver printed invoices that have to forward to the customer, we could have a soft copy of the invoice and delivery note on a tablet, which stores information from our system. When the driver arrives at the customer, they let the customer sign on the tablet. The client will receive an emailed copy. This will then update the system. This eliminates the common problem we have of lost invoices, which delays payments. It also reduces costs because it will result in using less paper and toner. The customer will save. (*Respondent 4*).*

Financial Perspective

The organisation aims to determine if the ERP system has reduced operations and administration costs while increasing productivity, reduced operations because of standardised procedures.

The respondent rates the time-saving benefits of the system at 10 out of 10. This is an improvement from manual work done prior to adopting the system. The previous warehouse control would manually fill out control sheets, which would take a lot of time, sometimes have many mistakes. This also delayed the deliveries, which affected the quality delivered to the customer. Kagiri (2016:12) who found that ERP eradicates time wastage and helps enhance the efficiency and effectiveness. One officer has only done the tasks that she performs, therefore, adopting the system did not affect the amount of staff in this department. This is the first time the software is getting an upgrade.

However, no changed management activities are done. The bakery just got an email from the head office notifying of the changes.

Although Bhati and Trivedi (2016:29) state the ability to forecast trends as one of the advantages of using ERP, the interviewee finds it difficult to forecast due to rapid change in demand. There is a constant change in demand. Therefore, the system has no impact on the forecasting process. The respondent believes that the software has improved productivity level. This is consistent with Huang and Handfield (2015:4-5) who observe that using an ERP system improves productivity. The fact that they are able to provide real-time transaction information enables them to reduce inventory

5.4 ERP SYSTEM AT SASKO BAKERY

Sasko bakery is a strategic business unit of Pioneer Foods. The production and distribution function of the bakery is at Bristo house in Sidwell, while the administration activities are in Deal Party, Swartkops, in Port Elizabeth. The headquarters are in Paarl, Western Cape. The premises are large and access is restricted. On arrival at the entrance of the premises, there is heavy security. Entry to the security control area requires one to press a bell for attention and to have the rotating gate opened. This is a very busy area, especially at the beginning and end of shifts. Upon arrival at the security control room, a visitor has to report to the security and explain why they are there and whom they would like to meet. The security officers will then call the requested personnel by calling the extension. This can take up to an hour or even longer. They then call the speed dial, which goes directly to mobile. The requested officer is likely to ignore the call, which translates into further waiting. However, if the call is answered, the requested officer can request the security officer to allow the visitor into the premises or they will come to meet the visitor at the entrance. When allowed to come into the premises, the visitor will then register their name and details on a register and be escorted or shown the direction to where they will meet. For the purpose of the study, the focus is on the departments contacted are procurement (which it refers to as stores), production and distribution (dispatch). These departments use SAP software.

Their system is not integrated. They share their information by exporting their data to Excel format and email it to the respective departments.

5.4.1 Use of ERP in Procurement and distribution.

The researcher approached the management of the bakery after continued efforts (seven visits and twenty phone calls over a period of two months) to communicate with the users in the procurement (stores) department. The management requested that the human resources office should be next point of contact to facilitate the meeting and interview. There was a constant effort (four times daily over a period of five working days) to contact the human resources office. Unfortunately, the office informed the researcher that it is impossible for the officials in both the stores and distribution departments to participate because the bakery is introducing a new system. These officers were key to the implementation and training of this system and would therefore not be able to participate in the study. However, the researcher was able to obtain a respondent from production.

5.4.2 Use of ERP in Production

After five visits (only as far as the security control room), ten phone calls and two emails to the production manager at Sasko bakery a meeting was finally set. The interview was conducted in the boardroom of the bakery. The respondent has held the current position since October 2016 although they have been with the bakery for over three years. The department uses a manual control sheet to record all the activities that occur within a given shift. An employee appointed during that shift manually fills the control sheets. These sheets are filled multiple times in an effort to ensure controls and consistency. In addition to the control sheets, the department has an ERP system (SAP) and another software EES. The SAP is used for recording information that is on the control sheet. This software is used for storage purposes and not for transacting. Sometimes the information is only captured a week after an activity has occurred. EES is another system that the department uses. It is not an ERP system but a software that monitors

production. It determines the quality of the product and gives feedback on adjustments than are needed during production.

Learning and Growth Perspective

An examination of data collected revealed that the department determines the accuracy of the data by comparing the system report to the manual control sheets filled during each shift. Unfortunately, the department does not use the ERP as regularly as the manual control sheets. However, the respondent rates the comfort in using the information from the system at 7 out of 10. He feels that his qualifications and experience enable him to be competent in taking care of the reporting requirements, however, due to the work pressure; he is unable to obtain updated reports from the system. The ERP system is seen to be a distraction to the tasks that are performed and has not had an impact on the productivity of the department. This is consistent with the TAM theory that a user is less likely to use a system if they do not perceive as useful in performing their tasks.

The system is a hindrance. It is for data storage or archiving and not for transacting. It increases my workload. It duplicates the tasks because I have to punch in the information that is already on the control sheet. It gets worse after a weekend because we have to capture a backlog of at least two days. It gets very busy on the weekends. It also takes up my time because instead of being on the flow and handling technical and administrative issues I have to punch in this information (Respondent 2).

The TAM model explains that when a user of a system does not find it useful in improving the performance of their tasks they are less likely to use it. Therefore, it is not surprising that the respondent does not use it as actively. This results in the information being out of date. It is not possible to obtain required information because there is a lag between capturing information on the control sheets, and in the ERP system. However, Eid and Abbas (2017:5) observe that when an ERP system is used in an organisation, it improves employee productivity because of better system quality, integration, smoother information flow, faster business process and better support for decision-making. Since

the department finds the use of the ERP system as a distraction, it fails to enjoy the presented benefits of its use.

Other departments are not able to have direct access to the information from the system. Production department emails any needed information to the relevant departments, in PDF or Excel format. This is contrary to what an ERP is designed to do. A system that integrates a complete range of processes and functions of a business to show the complete assessment or view from a single information and IT architecture (Chou, Chang, Lin & Chou 2014:268).

The respondent rates the strength of the IS department a 9 out of 10. This department is very competent in supporting all the various systems that used within the organisation. This IS department has a specialised division for the various software used within the organisation to ensure that each user is thoroughly supported. Nwankpa (2015:337) explains that it is important for an organisation to have strong technical resources in the IS department because this will enable prompt response to changes in the market and the IT environment and to current trends.

The organisation provides training for the users of the software. They are taken to a training centre to ensure thorough training. Ruivo et al. (2014:170) emphasise the importance of this training programme in enabling the user to understand the system and navigate their way through it with minimum mistakes. Furthermore, familiarity with the system increases the rate at which it is used. This results in the greatest level of readiness in using it.

Internal business processes Perspective

Although the information is not up-to-date, the respondent believes that it guides the department on how to achieve set targets, in production, distribution and sales departments. The system allows for better decision-making. However, the system has increased the workload in that, instead of focusing on the actual production, technical and managerial issues, the respondent has to check the manual control sheet against the report from the system and reconcile the two. The users are able to decide

autonomously with less need for seeking management authorisation. Therefore, the hierarchical structures flatten.

The help desk provides good technical support. Comparing the response rate between telephonic support and logged emails, the respondent states that the latter is less efficient. To reduce the need to train new employees, the department ensures that it recruits individuals with basic knowledge on the use of ERP systems. They will then identify a training need to ensure that the new entrant is able to use that of the department. Although the respondent trained on upgrades in the previous position held, there has not been an upgrade in the current turn.

The various departments within the bakery share information to facilitate planning and decision-making. For example, the production department needs to obtain the orders from sales to plan the total production quantities and variety. The accounts department needs information on the sales revenues and production costs. Unfortunately, these departments communicate this information through email. The bakery does not use an integrated system that would enable them easy access to such shared information. Additionally, the challenge is that there is little coordination between the different departments in the organisation. This also makes it difficult to determine the impact of the system on the group productivity and because the records are not regularly updated and monitored. The system has not affected the business processes because the system is not used in the way it is designed to, rating at 2 out of 10. Instead, the system delays the process of the whole organisation

Customer Perspective

The used system is user-friendly, rated 9 out of 10. Expressing an opinion on the overall performance of the system, the respondent believes that it is under-utilised; some functions of the system can be explored. Failure to do this has rendered the system inefficient and ineffective. Instead of the system simplifying the tasks of the end-user, it duplicates. The opinion of the respondent is that the software does not add value in daily operation, just used for storing information because the transactions are captured

after they have occurred, and not as they occur. This results in an increased workload. The department enjoys the support of top management, rating it at 9 out of 10. However, the challenge is that the end-user of the organisation is resistant to change. The respondent rates the support within the organisation at 3 out of 10.

Financial Perspective

Due to the amount of time that is needed to capture information from the control sheets into the ERP, the respondent rates it 2 out of 10 when measuring the time saved when using the system. However, the use of the system has resulted in a decline in the number of staff that work within the department, although the respondent could not provide actual figures. Although the department has not had an upgrade, the respondent states that there is usually a changed management team, made up of agents from various departments that sensitise the relevant departments about the eminent software that will be implemented or upgraded.

The department is unable to forecast production due to the constantly changing demand for bread. The delay in capturing the information also makes it difficult to use the system to forecast. It has not improved the performance of the department.

5.5 ERP SYSTEMS AT ALBANY BAKERIES

Tiger brand owns the Albany bakery. The production facilities of this bakery are in Bellville while the administration is in Maitland (Western Cape). The head office of the bakery is Bryanston in Gauteng. Due to the distance between the Bellville and Port Elizabeth, the researcher contacted the bakery through the telephone. Initially, the researcher contacted the human resource manager to request assistance with conducting the study. The questionnaire was emailed. This would enable her to forward it to the relevant people. When a follow-up was made to the Human Resources officer, she had taken annual leave and advised that other potential respondents were also on leave. Later, the researcher made three calls over a period of three days and requested to talk to the bakery manager. Upon explaining the purpose of the call, the researcher was forwarded to the operations manager who availed himself three days later to

conduct the interview. The appointment was further postponed by one hour. The researcher conducted the interview through the telephone. This interview was recorded to ensure accurate transcribing. The bakery uses Oracle as the overall ERP system throughout the organisation. The bakery has a modular approach when implementing this system. This means that, instead of implementing all the modules to the respective departments, it introduces a module to a department that needs a specific function when it needs it. After conducting the interview, the researcher requested to contact the officer in the procurement and distribution department.

5.5.1 Use of ERP in production

The respondent who is also heading the production department is the operations manager. He has held this position for over nine (9) years. The department uses three different systems. It uses Oracle, mosaic and pragma. The production department uses Oracle for inventory management system.

Learning and Growth Perspective

The respondent compares the report obtained from the ERP system to the data acquired from the modules that are used in other departments. This is a weekly activity. Any identified discrepancies are investigated. The respondent rates the reliability of the information at 5 out of 10 due to the frequently found discrepancies. A team takes care of the reporting requirement. The competency of the team is rated 6 out of 10.

Although the software that is used has not improved productivity, it has enabled the department to be able to identify errors that were previously experienced and take proactive measure to prevent further mistakes. The system provides real-time up-to-date information, which is easily accessible to other departments.

It is important to have a strong IS department with strong technical know-how. Unfortunately, the respondent states that the problems of the system are too complex for the department. They have limited abilities in giving support. Although there is a

training program on the use of software, it is too broad and ineffective because it is not user specific.

Internal business processes Perspective

The system accelerates decision-making, which benefits other departments. Helpdesk assists when a call is logged. The response to the log is not as prompt as preferred. New employees do not undergo thorough training on the systems they are directly involved with. The fact that the training is not user specific, it is expensive to the company. The company does not have regular upgrades but implements the software in modules. Training is conducted with each an upgrade. The use of the systems has increased the workload of the department by duplicating effort. This is because all information that is fed into the system has to be double checked. The system has improved interdepartmental information integration and coordinating between departments. This has resulted in more accurate information and better flexibility in sharing information. This system has also increased the business processes but it has not changed them. The respondent appreciates them and rates the at 8 out of 10, where 10 is the maximum rate of satisfaction. However, this process has not resulted in any change in organisational processes.

Customer Perspective

The user friendliness of the system rates 6 out of 10. The respondent is not impressed with the slowness of the system. Furthermore, the user has to click through too many windows in order to complete a transaction, consuming too much time. The overall performance of the system is worse during peak times, usually weekends and public holidays. It is complicated, making it difficult to work with. PEU model states that if the user of technology perceives that it is not easy to use and is not useful, they are less likely to use it. Although the user finds it complicated, they find it somewhat useful to perform tasks.

There is great support from the organisation and top management, rated 9 out of 10. This is essential because the system is complex. Shao et al. (2016:132) emphasise the

need for supportive actions of top management that enables the relaxing of dominating routines, supporting norms that promote the routing and advanced use of the system.

However, the respondent believes that there are better systems in the market, stating SAP, and is therefore not impressed by the current system.

Financial Perspective

The respondent rates time-saving at 7 out of 10. This is consistent with the identified benefits of implementing and ERP system. These include improved business productivity, such as shortened lead-time, lower cost and effective communication among functional boundaries (Nwankpa, 2015:336). The adoption and use of the system have not affected the number of staff members in the department.
The bakery uses a modular approach when adopting software. When adopting these modules, a change management team leads the implementation. This is an effective cross-functional team that ensures these modules run effectively. The system does not assist the department with forecasting but it enables quicker access to information needed for planning. The respondent does not believe the system has improved the performance in the production department.

5.6 SUMMARY

This chapter provided an analysis of the empirical data that was collected. It was both demographic analysis and information collected based on the four perspectives of the balanced scorecard. Data was collected from five respondents who are currently employed in the three bakeries.

The analysed demographic profiles of the respondents show that the highest qualification for 80% of the respondents was matric, while only 20% held a bachelor's degree. 60% the respondents held managerial positions with more than five years working experience in the post.

The findings across the interview schedules shared among the bakeries suggest that the business practices that are undertaken do not promote the effectiveness of the ERP systems that are used in the procurement, production and distribution activities of the supply chain. Some of the departments do not use the ERP system while others have it, but do not use it regularly. Only 20% of the bakeries take their employees for formal training on the specific software that is used while most provide on-the-job training.

Furthermore, the findings suggest that the knowledge and growth, financial, customer and internal process of the bakeries do not make for an effective system. However, examination of the data sets from the interview schedules revealed that even though a bakery can adopt an ERP system, if the internal processes and training are not aligned with its use, there will be ineffectiveness. Over 60% of the respondents were satisfied with the information they obtained from the system, the ease and speed of accessing information. All the respondents were happy with the technical knowledge and support they obtained from the Information Systems Helpdesk office, giving ratings seven and above on a scale of 1 to 10. There was an equal response on the impact of the software they used in the work, either increase of decrease while 20% felt no impact. An increase in productivity was experienced by 60% of the respondents. All respondents found their software user-friendly, rating it 6 and above. Only 40% felt that the use of their software simplified their tasks. All the respondents felt that top management were supportive of the use of software in their operations, rating it seven and above. However, none of the respondents felt that the system had an impact on forecasting.

In the final chapter of this research, there is a discussion of the ideas that have emerged because of the interview schedules as well as the implications for the bakeries and research field. Recommendations for further research in this area of study follow.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

The study investigated the use of Enterprise Resource Planning (ERP) in bakeries focusing on the procurement, production, and distribution activities of the supply chain. It aimed at identifying any ineffectiveness in the use of this system. It used the balanced scorecard to measure the performance of the system that the bakeries use. A qualitative study using content analysis of the website and interview schedules methodology sought to answer the following question:

- Are there ineffective business practices in the use of ERP systems among the three leading bakers being investigated?

To answer this question, data were collected from three bakeries. It was comprised of content from the website and conducted interviews. Pronouns were used instead of the names of the respondents to ensure that the identities of the respondents were protected. All data collected was transcribed and summarised into tables for inductive analysis with intention focused on the themes outline in the balanced scorecard framework used for the study.

This final chapter will unite the full details of the lessons learned from this study. The remaining sections of this chapter encapsulate the findings of the study, address the consequences for the participants of the study, the baking industry, the bakeries and propose a discussion emerging from the findings.

6.2 SUMMARY OF FINDINGS

6.2.1 Findings on the Content Analysis of the website contents

The websites of the three bakeries were content analysed. The themes that were identified were the background of the bakeries, the quality, and freshness that is

emphasised in the products and the use of technology. However, these websites did not find information on their supply chain activities and the use of ERP system. The research was not able to answer the research questions using the contents of the website. The reason for not disclosing such information could be because the industry had a case with the Competition Commission of South Africa.

6.2.2 Finding on demographic analysis

Age group analysis: There were two respondents who were between the ages of 26 and 36 years while the other three were between 46 and 65 years. This shows that the officers in the procurement, production and distribution departments of the supply chain of bakeries come from diverse age groups.

Qualification of respondents: 60% of the respondents hold a matric certificate as their highest qualification. This indicates that bakeries do not need a specialised qualification for employees in the procurement, production and distribution departments.

6.2.3 Summary of findings in the research questions

Findings from the scheduled interview suggest that although most of the departments in the bakeries have adopted an ERP system, the business process does not make these systems effective. The finding also suggests that the use of ERP systems has been very important yet very complex. Furthermore, the four perspectives that are used to evaluate the performance of the system (customer, financial, training and innovation, internal processes) can assist in ensuring that the business operations of the bakeries ensure maximum benefit in the use of the system. Sasko and Albany bakeries have an ERP system in their departments while Blue Ribbon Bakeries uses Excel software. Findings show a lack of learning and growth opportunities to the users through use of formal training programmes. Furthermore, the use of the system is not aligned with the business process in a way that enables the efficiency of the system.

The research revealed that it is formal training is crucial in the use of ERP. It should also be active in ensuring the system is used by the department. It should engage staff when acquiring the system so that they appreciate the benefits that they can derive if used effectively. This can be done by using an active and effective change management team. It is also important to adopt a user-friendly system that also simplifies the tasks of the end-users.

6.2.3.1 How effective is the ERP system in the Procurement Department?

The empirical results showed that the ERP system in the procurement department is effective. The procurement department at Blue Ribbon bakery ranks the reliability of the information obtained from the system at 10 on a scale of 1 to 10 (where 1 one is not reliable and 10 is completely reliable). The respondent is competent in producing reports from the system, rating her competency level at 10 (extremely competent). The Information Systems (IS) department provides technical assistance in a way that enables the department to use the software effectively and efficiently. The system is easy to use and has reduced the workload. Formal training was provided for the department, which has made the system easier to use.

The system gives information that is up-to-date and in real-time. Since the information is easy to access, in has improved the level of interdepartmental information integration and collaboration. This enables decision-making. The department also enjoys support from management, which addresses queries timeously. The system saves time and helps the respondent improve productivity and overall performance of the department. The department has not had an upgrade of the current version but it has implemented other modules of the system. However, the system does not help the department with forecasting. However, it can be concluded the ERP system is effective in the procurement department.

It is therefore important for management to continue supporting the use of ERP systems in the procurement department by ensuring that the system is user-friendly and helps reduce the workload. It is also important to continue having a supportive IS department

that provides prompt assistance to the end-users. Since the bakery is currently in the process of implementing a new version and has provided training, it should allow the end-users to give input on the configuration of the system. When the users find the software user-friendly and easy to use, which is consistent with the Technology Acceptance Model (TAM).

6.2.3.2 How effective is the use of ERP in the Production Department?

The empirical results show that Blue Ribbon bakeries do not use the ERP system in the production department. This department uses spreadsheets that are placed on Microsoft SharePoint that is easily accessible for all. However, because the spreadsheet is not integrated into the ERP system of the bakery, other departments capture information from the spreadsheet into the ERP system that is used by the rest of the bakery.

Management should try and have change management activities that encourage the use of ERP systems in this department, especially with the introduction of the upgrade. This should be done in a way that discourages the use of SharePoint. The production department is given thorough training of the ERP system and shown, how user-friendly the system is and how it will reduce the workload. If this is done, it will make interdepartmental information integration possible, which will increase productivity.

The other two bakeries that use the ERP systems have different responses regarding its effectiveness. SASKO bakeries say that the system is not useful to the department because they use manual control sheets and only capture information later, a few days later. This means that the information in their ERP system is not up-to-date and does not provide real-time information. The respondent states that although the department has obtained training on the system, get outstanding support from the IS department and top management, the system has not improved the performance of the department. The system has decreased the productivity of the department because it has duplicated the tasks of the department, which makes the system time-consuming. There is no interdepartmental information integration, the production department sends and

receives emails from other departments when information is shared. The system does not assist the department in forecasting production requirements.

It is important for management to encourage the use of the ERP system in the production department by emphasising its effectiveness and benefits when used correctly. This can be done by discouraging the use of manual sheets, which also consume time and increase the risk of error. There could be a policy or 'punishment' that discourages manual tasks. Since management is supportive of the use of the ERP system, it can provide refresher training to the users and identify ways in which the business process in this department can be aligned with those of the system in a way that ensures that it is used as tasks are performed. When this is done, the workload of the department will be reduced and information will be quicker and easier to share with other departments.

Albany bakeries are satisfied with the ERP system that is used. The department finds the system useful, but they do not find it user-friendly. It is also found that training is not end-user specific and that the system has increased the workload. It is therefore important for management to provide training for the specific tasks that are to be performed by the end-user for the system to be used effectively. It is also important to use a user-friendly system. The respondent believed that more user-friendly systems are available in the market, which would be more useful and reduce the workload of the department while increasing its productivity. Alternatively, the current system can be re-configured in a way that makes the system user-friendly. If the reconfiguration is done, management should also understand activities that contribute to the increase in the workload because of using the system. These should be included when reconfiguring the system.

6.2.2.3 How effective is the use of ERP in the Distribution Department?

The empirical results show that the use of the ERP system in the dispatch department at Blue Ribbon bakeries is effective. The system provides accurate, up-to-date information in real-time. The information can be accessed by various departments. It enables decision-making. Although the user got on-the-job training, they feel competent

in the use of the system. The user has innovative ideas on other ways that the ERP system can be used more effectively. This department also relies on information that the production department puts on SharePoint, which, at times, delays the work of this department

It is important for management to provide formal training for the users so that they can enjoy maximum benefit from the system. Although the respondent feels that there are innovative ideas that management could consider, it is possible that the respondent could be re-inventing the wheel. This is because, if there had been formal training, the respondent would have long discovered the functionality that seems like an innovative idea. Management should also ensure that the production department uses the ERP system so that there is interdepartmental information integration, which will benefit the dispatch department.

6.3. RESEARCH CONTRIBUTION

Many bakeries invest in ERP systems in an effort to improve the efficiency of their supply chain functions. However, these bakeries have experienced challenges when using these systems. This has resulted in the ineffectiveness of the system. This study has enabled the researcher to harvest the problems that these bakeries experienced. It has also identified and proposed practices which, when adopted, can make the system effective in the supply chain. These practices can also be used in the ICT industry, being the supplier of the system, to better support their clients in ensuring that they systems they supply are effective. This will result in deeper trust in the effectiveness of the system and in the supplier.

6.4 LIMITATIONS OF STUDY

Limitations of this study refer to the weakness or deficiency in the research study (Collis & Hussy 2014:342). It acknowledges potential issues and gives an opportunity to discuss recommendations for future research. The discussion about limitations follows:

- Sample size: the interviews were conducted with five respondents out of 27 potential respondents. This is a low response rate (18.5%) and therefore a limitation. However, the completed interview constitutes a representative of the sample from the target population. The main aim of a qualitative study is to obtain responses that cover most, even all the issues being investigated. It does not have set rules on the sample size but aims to gain a rich in-depth response. The low response rate was due to the nature of the industry. It is very busy and demanding. The sample was extremely homogeneous (60% managers). This degree of similarity among respondents limits generalisation of the study results to other population. However, the results are still essential because of this population in the procurement, production and distribution departments of the three bakeries.

- The scope of study: the supply chain is not limited to procurement, production and distribution activities. Additionally, there are numerous bakeries in South Africa. Therefore, the outstanding limitation is that it focuses on the three bakeries in South Africa and the procurement, production, and distribution department in the supply chain of the bakeries. It also focuses on the use of ERP systems instead of other possible software used in bakeries.

- Lack of resources: The researcher did not have enough resources to have a face-to-face interview with one of the respondents due to geographical location. Therefore, the interview was conducted by telephone.

- Time-frame: this was a cross-sectional design rather than longitudinal. This design does not allow the researcher to make causal statements about the findings.
- The novelty of research: There are limited studies done on bakeries and in the use of ERP systems. Most of the studies are on the implementation of ERP. It was difficult to find sufficient and substantial literature.

- The impact of the price fixing case by the Competition Commission on the baking industry: An attempt to contact the South African Chamber of Bakeries to obtain additional information was unsuccessful, stating the same issue of the Competition Commission.
- Insufficient information from the websites or additional websites for conducting a content analysis of the content of the websites forced the researcher to conduct scheduled interviews through the use of questionnaires.

6.5 SUGGESTIONS FOR FUTURE RESEARCH

Considering the limitations identified in the previous section, the following are suggestions for a similar topic.

- More research is needed into the use of ERP systems, generally and in the supply chain of bakeries.
- A longitudinal study will assist in increasing the validity of the study.
- The study was limited to SASKO, Blue Ribbon and Albany bakeries. It is proposed that future studies should include retail bakeries, emerging bakeries, and independent bakeries in addition to the current sample. This will improve the validity of the study. The study should also consider other software that bakeries use and other departments in the supply chain.

6.6 RECOMMENDATIONS

Bakeries continue to find ways of reducing costs while maximising long-term profit without compromising freshness, quality and timely delivery. It is important to invest in advancing technology that enables them to achieve that. ERP is an integrated software that supports this. To benefit fully from this software, the business practices of the bakery should support the system. Here are some recommendations that can play an essential part in having an effective ERP system:

- Blue Ribbon management should afford formal training on the use of the system, instead of on-the-job training. Formal training enables the end-user to know the software thoroughly and maximises use. It can also enable the user to be innovative in using in a way that will reduce the workload and increase department performance.
- SASKO management should enforce the use of the system for daily activities. It should not only be used when it is convenient for the department. To encourage the use, it can request a regular report from the system. If the system is used as designed, it enables interdepartmental information sharing, improves information accessibility and reduces the workload.
- When upgrades are done, management should engage a changed management team that will address staff requests during the configuration. This will result in greater organisational support.
- Albany management should ensure that the software that is chosen is user-friendly and is useful to the department. This will encourage usage.

6.7 CONCLUSION

Bakeries invest in ERP systems with the aim of making their supply chain more efficient. The aim of this study was to compare the business practices of the three bakers to determine how they contribute to the ineffectiveness of the ERP system in the procurement, production and distribution functions of the supply chain. The focus was on the procurement, production and distribution department of the supply chain.

A qualitative study using content analysis of the content of the websites of the three bakeries was conducted. Additionally, interview schedules were conducted using open-ended questionnaires on a sample of five officials in the procurement, production and distribution departments of the three bakeries

The main findings were that not all the bakeries used the ERP system in the specific supply chain function. SASKO bakery did not use the system in the way it is designed, which results in increased workload and delayed information updates and sharing. Blue Ribbon bakery does not provide formal training to the user, mostly on-the-job training. It

should also minimise the use of Excel and encourage the production department to use GP 2010. Albany provided general training in various software that are not to the specific needs of the department. It did not find the software user-friendly.

The recommendations are that management at SASKO bakeries should enforce the use of the system. It should also engage a change management team that will support the configuration of the system during an upgrade. Blue Ribbon should provide formal training for the user. Albany bakery should provide end-user specific training. It should also ensure that the system is user-friendly and get input from users on alternative software that can be more effective.

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Appendix 1: QUESTIONNAIRE

Section 1: Biological Information

1.1. Gender: Male Female

1.2 Age:

1.3 What is your highest qualification?

1.4 What computer programs do you use?

Microsoft Word, Excel, Purchasing/ordering software; (Materials Requirement Planning (MRP), Payments, Bills of Materials (BOMs), Creditors, Debtors, Report writing software, Stores/Warehousing, transport, other _____

1.5 Which department do you currently work in?

1.6 What position do you currently hold in the company?

1.7 For how long have you held this position in the company?

1.8 What is the name your computer software(s) system Oracle?

1.9 For how long has the company been using the current system?

Section 2: Use of the Balanced Scored Card for the IT use to check effective use of integrated systems.

Perspective # 1: Innovation and Learning

2.1.1: How do you determine the accuracy of the data used?

2.1.2: How comfortable (on a scale of 1 to 10, where ten is very comfortable) are you to rely on the information from the system information?

2.1.3: Please rate the competency of the person taking care of the reporting function into taking care of your reporting requirements (1-10)

2.1.4: What changes has the software System brought to your productivity level?

2.1.5: Are you getting up-to-date information from the System?

2.1.6: Are you getting the required information from the System in real-time?

2.1.7: Is the information, which was only available via other departments previously, now more accessible from the system?

2.1.8: Do you have a strong Information Systems (IS) Department? (scale of 1 to 10)

2.1.9: Do they have a strong technical know-how of the system that you are using?

2.1.10: Do you have training programmes on the system software?

2.1.11: Did you already have a reliable IT infrastructure in place prior to using the ERP system?

Perspective # 2: Internal business perspective:

2.2.1: How does the software system aid your decision-making process? If gives sufficient information promptly.

2.2.2: Are you getting good Technical Support from your Helpdesk or employee support centre?

2.2.3: Are the new employees trained during their orientation/ induction time phase?

2.2.4 Do employees get trained on new system upgrades or changes on a regular basis or not?

2.2.5: How does the use of the System affect your workload?

2.2.6: How does the information provided by the system assist in decision-making?

2.2.7: How is the level of interdepartmental information integration?

2.2.8: How has the overall group / departmental productivity been affected by using the system?

2.2.9: How has the system affected the coordination between the different departments in the organisation?

2.2.10: How has the use of the system affected the business processes?

2.2.11: What is the overall level of satisfaction with business processes? (scale of 1 to 10)

2.2.12: How has the use of the system affected the organisational processes as a whole?

Perspective # 3: Customer perspective:

2.3.1: Please rate the user friendliness of the system (Rating 1 to 10)

2.3.2: What is your opinion about the overall performance of the System?

2.3.3: In what way does the system impact on the simplicity of the tasks of the end-user?

2.3.4: How do you rate top management support? (Rate 1 to 10)

2.3.5: How do you rate the support within the organisation?

2.3.6: What is your opinion about software selected?

Perspective # 4: Financial perspective

2.4.1: The system helps in saving end-user time (Rate 1 to 10)

2.4.2: What impact did the implementation of the system have on the number of staff members?

2.4.3: Is there change management whenever upgrades are to be done?
If there is, how effective is it?

2.4.4: What is the impact of the system on the forecasting process?

2.4.5: Has the system improved your performance?

Thank you for participating in the study

Annexure 2: Declaration of Proof Reader

31 July 2017

Declaration NMMU

Declaration by Language Practitioner

I Elize Pretorius declare that by nature of qualifications and experience I am competent to check the language usage in a treatise document.

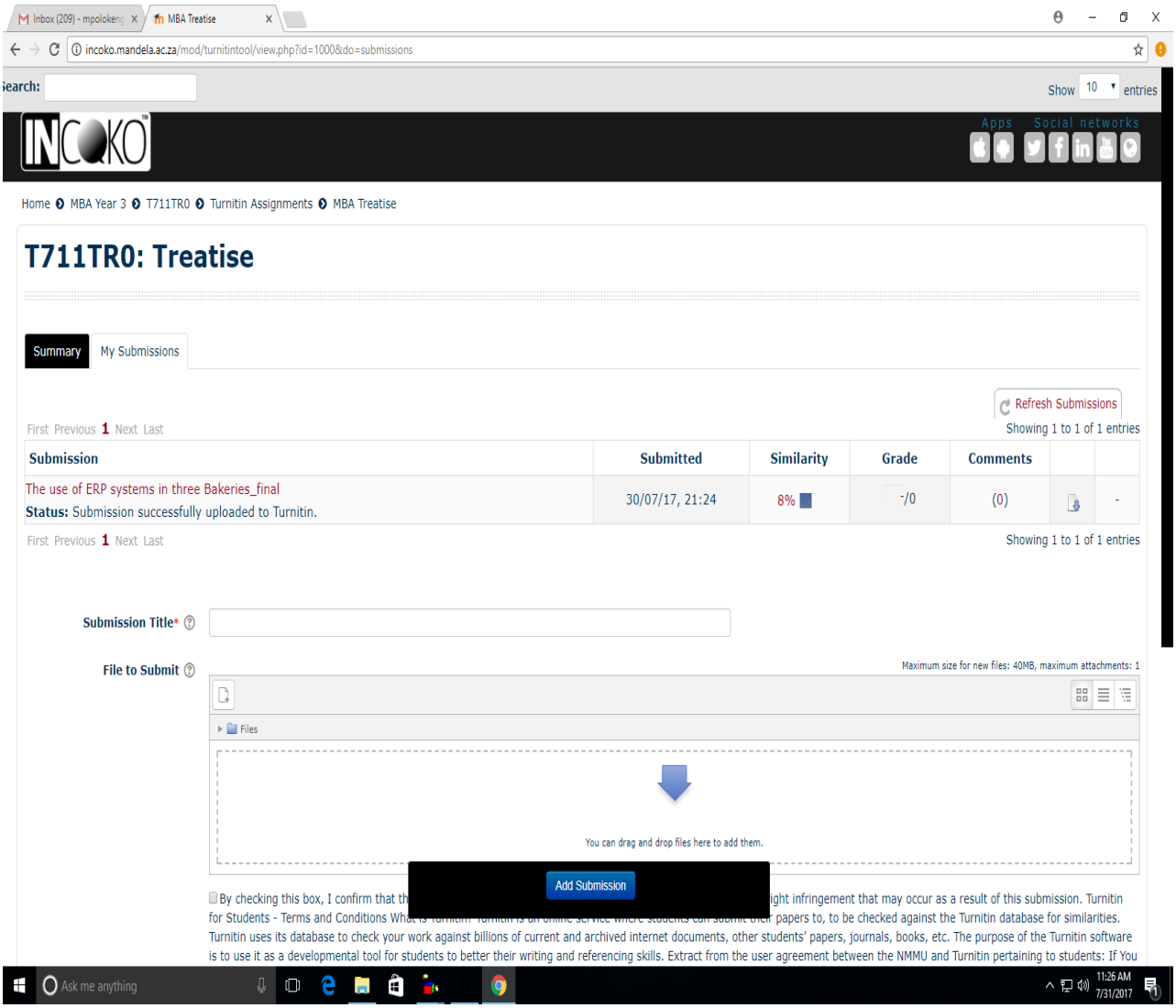
I certify that I have checked the Treatise prepared by Mpolokeng Mokuena.

I certify that the language usage and structure of the document comply with accepted sound, English language usage and with scholarly writing norms. I am not liable for any language and structural changes the student made to the document.

Regards.

Elize Pretorius

Annexure 3: Turnitin Report



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