

Factors Affecting the Use of Data Capturing Technology and its Effect on Business Efficiency (Case of study DKT Ethiopia)

A Thesis Submitted to School of Jimma University in Partial Fulfillment of the Requirements for the Award of Degree of Master of Business Administration (MBA)

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DECLARATION

I declare that the research Report entitled “Factors Affecting the use of Data Capturing Technology and its Effect on Business Efficiency (case of study DKT Ethiopia)” **submitted** to Research and Postgraduate Studies’ Office of Business and Economics College is original and it has not been submitted previously in part or full to any university.

Date: _____

CERTIFICATE

We certify that the Research Report entitled “Factors Affecting the use of Data Capturing Technology and its Effect on Business Efficiency (case of study DKT Ethiopia)” was done by Miss Tigist G/Georgis for the partial fulfillment of Master’s Degree under our Supervision.

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LIST OF ACRONYMS

AIDS	Acquired immunity deficiency syndrome
DKT/E	DKT Ethiopia
HIV	Human Immunity deficiency Virus
ICT	Information and communication Technology
IS	Information System
MIS	Management Information System
SFA	Sales Force Automation
SPSS	Statistical Package Social Science
TAM	Technology Adoption Model
UNCTAD	United Nations Conference on Trade and Development

ABSTRACT

The aim of this study is factors affecting the use of data capturing (sales force automation) technology and its effect on business efficiency of DKT/E. The study was employed qualitative and quantitative research design. Data analysis was conducted using descriptive and regression statistical methods to measure the factor affecting the use of sales data capturing device and its benefit. The findings of the study suggested that perception to use technology is the most important affecting the use of data capturing technology and its effect on business efficiency in terms of improving workload, sales data quality, communication and coordination and planning and performance monitoring as well as decision making. Level of education and continues follow-up also significantly affect the use of Sales Force Automation device but these factors are less important than perception in determining and predicting the use and benefit of technology. The study does not show employees' work experience and sales skill as important parameters in affecting the use and benefit of sales data capturing technology. Conclusively of this study that an array of information technology tools such as sales data capturing device DKT/E employed, prompts sales force to engage in more thorough planning behaviors, enhance their communication with managers and coworkers, effective planning and performance monitoring. The study recommended that DKT/E continue investing on and support its sales force to fully adopt technology for high level of data accuracy, monitoring and decision making. Particularly building positive perception, level of education and continues follow-up are key factor for realizing the importance of the technology in its organizational efficiency. In addition to this the study will use as a base for further related studies.

Keywords : Data capturing, Sales force Automations (SFA), Business efficiency, Likert scale,

CHAPTER ONE

1. INTRODUCTION

This topic begins with a brief background to the study, which leads to an introduction of the case company, DKT Ethiopia, a statement of the problem of the study, research question and general and specific objective of the study is presented.

1.1 Background of the study

Over the past decade lean methods and tools have helped manufacturing organizations improve their productivity levels significantly by focusing on data, systematic elimination of waste, and improvement of flow. Today many nonmanufacturing organizations are applying the powerful process improvement methods and tools employed with Lean techniques. Organizations in health care, education, government, hospitality, and other services are applying the improvement tools with growing levels of success (Jaideep and Rob, 2014)

Since its inception, technology has revolutionize the day to day life. Companies have been benefiting, become more efficient and competent, improve and sustain their market share, reach more people with services and products. Since the innovation of computers and smartphones, the way we communicate with each other, do business, interact, work, and establish relationships have been highly transformed. Each and every individual on the globe in one way or the other is involved in the business sector. Evidence shows that the launch of ICT and computer systems has led the business into a new era in which the daily activities are interrelated and affected by the world of artificial intelligence (Al-Khouri, 2014).

Thanks to the wide array of technological devices, companies and business managers today are able to gather more and real-time information than ever before. The speed at which information can be gained as well as the sheer amount of data that can be accessed at any point in time has fostered a rapid shift in companies' expectations throughout the buying process. According to analysts at Forrester, a leading independent technology and market research company, today's

business to the business buyer can potentially be anywhere between two-thirds and nine-tenths of the way through their customer process of making a purchase decision before ever reaching out to a vendor (Mark and Greg, 2016). Looking across some of the industries, managers expect significant impact from operations with radically improved use of technology. Business companies estimated a significantly higher impact from improved use of technology compared to traditional way of doing business (Genpact, 2014).

Understanding how technology investments create business value is a research priority in today's technology-intensive business. Sales-force automation (SFA) has offered technological support to sales people and managers since the beginning of the 1990s. SFA is now so widely adopted in business-to-business environments that it is seen as a 'competitive imperative' that offers 'competitive parity' (Morgan A. and Inks, 2001)

Technological progress in developing countries can support and strengthen development by lowering the costs of production, improving business efficiency, creating new economic opportunities and improving quality of services. Such improvements can enable a developing country become more competent and penetrate more demanding consumer and intermediate markets (World Bank 2008).

In an organization engaged in marketing, technology plays a pivotal role in improving efficiency. Its helps to reduce operation cost, creating opportunities to new markets, improving tracking measuring and monitoring performances and sharing lesson learnt. Sales data capturing device is one of the technologies the digital world offers which is employed to improve and sustain efficiency in business organization (Henry & et.al, 2018)

There has been a growing support of from Donors to support developing countries to digitalize their economies and realize sustainable development goals (UNCTAD, 2019). DKT Ethiopia is a Donors funded social marketing organization which sells various brands of life saving products using a social marketing approach. It sells its brands to the exiting commercial channels and has a vision to become a self-sustaining business firm in few years' time. One of its key strategies is to become more efficient in its business activities. For last two decades, DKT employed a

manual method of collecting sales data, tracking business outcomes, reaching new markets, and decision making. This approach was very traditional and characterized by delay in reporting, creating more workload and weak data quality. In 2016, DKT Ethiopia introduced E-Sales, sales data capturing and storing device in 2016 to become more efficient in its business (DKT, 2019).

1.2 Statement of the Problem

Information technology and digital economy creates new opportunities for all sectors of the economy. Today's economy is undergoing fundamental changes as a result of the rapid development of information technology and its use is also very fast (Aferdita, 2015) Under this fast moving economy, companies must be able to keep up with innovation and adapt the situation by making adjustment in their business process. In recent years, the success of any enterprise is directly related to the level and quality of information technologies that are being used in the company and the ability to use that information correctly.

The importance of information systems (IS) has dramatically increased during the past decade as an increasing number of businesses have implemented them. A modern organization could not be imagined without an efficient information system. Subsequent to numerous researches, no doubts were left that implementation of an information system in an organization could bring a lot of benefits in dealing with internal and external factors that a company might face in day-to-day operations and long-term decision making, (Dmitrij and Vida, 2013).

Business process operations have entered a new phase of accelerated transformation, thanks to now-mature, powerful technologies. Mobile applications, sales data capturing and storing technologies, advanced analysis and powerful collaboration tools improves business productivity and profitability. Being in the period of integrating into the global economy, competition has been on rise to take advantage of new opportunities. Companies are striving for ways of gaining competitive advantage against their competitors to sustain and improve their market lead. Under this context business firms, use new technologies such as sales force automation or sales data capturing technology to increase efficiency and competitiveness (Yonas, 2015).

Continuous technologic development not only resulted in increased efficiency of business through reducing the operation cost but also strengthening evidence planning and execution for most businesses. The effect of information technology has captured the attention of several academics, business companies and policy makers (Aidah, 2013). Mark and Greg discussed, information is the fuel that drives the engine in managerial decision making. Sales managers are charged with making decisions and developing plans that impact multifaceted areas of a company such as sales forecasting. Developing sales forecasts is one of the most important uses of information by sales managers and it becomes integral part of an organization's overall planning and strategy development efforts (Mark and Greg, 2016).

In the digital economy, developing countries are experiencing tremendous pressures to catch up the dynamics of the global economy. In order to be competent, their economy needs to be efficient and open to embrace new technologies that improve performance tracking, measuring, analyzing and information sharing (Rumana & Richard, 2018). The development of digital information system is improving business efficiency. Business firms relying on or have a culture of evidence based strategic decision are becoming more competent and efficient. (Investment and digital economy 2017).

As a marketing organization in the hopes of increasing sales efficiency in the different way used to collect sales data using manual approaches which time was taking, exposed to errors, delay in data processing and reporting, created more workload to the sales force (Silvio and et.al, 2014). In Africa few studies has been undertaken to examine the effect of SFA on job satisfaction. In Kenya, a study is conducted to examine the perceived use of sales force automation and sales performance in consumer goods firms (Gerald, 2017). Similar study in Ethiopia was also conducted to assess the impact of sales force automation on job satisfaction in East African Bottling Company (Mihret, 2017).

Sales force automation (SFA) can improve sales effectiveness by freeing salespeople from costly administrative activities in favor of relationship building tasks, which better suit the skills and abilities of the sales force. SFA can enhance communication and increase the overall quality of the sales effort through faster access to relevant and timely information (Murat, 2009). SFA

carries significant potential for sales management and salesperson effectiveness which cannot be ignored by sales organizations such as DKT Ethiopia. Therefore, it represents a phenomenon deserving of strong research attention.

Despite the insightful knowledge the information systems research and sales literature has generated, no studies have thoroughly examined the use of information technology effect on business efficiency in terms of workload, quality and timeliness of sales data, Activity planning and tracking, collaboration and communication and evidence based decision making. Sales force automation (SFA) technologies are commonly used to support customer relationship strategies in firms across industries around the world today. However, research reports mixed results among companies incorporating SFA technologies, and there remains some debate in the literature about the specific benefits provided through these systems.

Therefore, this study seeks to expand researchers' understanding of the relative benefits of SFA usage on business efficiency in relationship to timeliness and quality information, workload, planning and monitoring, collaboration and communication and evidence based managerial decision. The study was conducted in DKT Ethiopia social marketing activities which SFA has been adopted since 2016.

1.3 Research Questions

The following questions guide the overall research process and this study is designed to answer the questions presented below.

- Does level of education affect the use of Data Capturing Technology at DKT Ethiopia?
- Does experience in sales affect use of Data Capturing Technology at DKT Ethiopia?
- How do affect Skill of using SFA device at DKT Ethiopia?
- How does the implication of perception to use SFA device on use of data Capturing Technology at DKT Ethiopia?
- Does the continuous follow up affect to use of Data capturing Technology at DKT Ethiopia?

1.4 Research Objectives

1.4.1 General Objective

The overall objective of the study is to assess factor affecting use of data capturing technology its effect on business efficiency case of DKT Ethiopia's social marketing program.

1.4.2 Specific Objective

Specifically, the study is designed to

- To assess the Level of Education that affect on use of Data Capturing Technology.
- To assess experience in sales that affects the use of Data Capturing Technology.
- To examine the skill of using SFA device at DKT Ethiopia
- To assess the implication of perception to use SFA device on use of data Capturing Technology.
- To examine continuous, follow up that affect use of Data capturing Technology in DKT Ethiopia

1.5 Significance of the Study

The study has the following benefits. The research paper provides an insight to the assessment of factor affecting the use of SFA technology and its effect on organization business efficiency. It provides an input for those organizations which would like to start using Digital data as a management tool to improve their organizations business. The findings of this study provide insights to DKT Ethiopia managements regarding how the investment on sales data capturing technology has effect on organization business. Other organization operating on marketing and related business also benefited from taking lessons from the findings of the research.

1.6 Limitation of the study

Perhaps the single most important limitation of this study is the single – company frame. Unlike other studies, this study was conducted in one business organization with small sample size and

may not be strong in demonstrating the relationship between determinant factors and use and benefit of technology.

Because of finance and technical capability, the study is also limited in dealing with other potential factors in influencing adoption of SFA technology in and investigating its impact on business efficiency.

The study shows findings based on Likers scale measurements. It does not have the power to provide information on impact of technology on business efficiency based econometric or cost benefit analysis.

1.7 Organization of the Study

This thesis paper organized in five chapters. Chapter one discusses the background of the study and the organization, statement of the problem, research questions and objectives, significance of the study and incorporates limitation of the study. Chapter two discusses the review of related literatures which covers theoretical and conceptual framework and empirical findings. Chapter three explains the research design and methodology. Chapter four covers the results and discussions and last chapter is for summery, conclusions and recommendation of the study.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

This section discusses the theoretical framework and empirical research findings related to the effect of sales data capturing technology on business efficiency. The section also presents definition of key terms, concepts and conceptual model with the underlining variables and indicators to be measured. Journals, business and management study materials, web research documents are used as a resource and reference to develop this section.

2.1 The Theoretical framework

In this section of the thesis, the relevant theories, definitions of concepts and terms related to Sales force automation and benefit of using sales data capturing technology for business efficacy discussed.

In 1876, Alexander Graham Bell's invention of the telephone provided the first technological alternative to information exchange by mail or in person. In more recent times, we have access to a dazzling array of online products, mobile devices, and automate services that are changing the way we communicate and, therefore, how customers buy and how sellers sell. However, despite more than a century of technological advancement, we still have sales productivity challenges. (Anneke and Brent, 2009). Digital technologies are spreading throughout the world at a faster pace than previous waves of technological innovation and are re-shaping business models and sectors (Dahlman et al. 2016).

The impact of these new technologies created appropriate span of control and managerial responsibility for the sales manager. Organizations are subject to change their business approach in the future due to the impact of ongoing rapid development in new communication and competition. Information capturing storing and processing technologies helps companies to maximize the sales effort to improve productivity and efficiency. Companies equipped salesperson with an array of technologies for work load and time management and contact visit management, inventory management (Mark and Greg, 2016).

The main benefit of new data capturing digital technology is to enable individuals to work in collaboration towards the achievement of common goals and objectives, enhancement of employee productivity, employee satisfaction and employee retention and improvement of skills, abilities and expertise amongst the human resources. (Radhika, 2018).

2.1.1 Control Systems Model

Control theory focuses on control mechanism which should be imposed at all levels of an organization which includes performance measurement mechanisms that has to be congruent with the objectives and goals of an overall organization discusses the control theory has three types of control systems:

- Under behavior control, employer monitors and evaluates the actions of the employees on a regular basis, as per the standards of the organization and then reward accordingly.
- In the case of output control, the performance of an employee is controlled with rewards or sanctions after evaluating it on the basis of organizational standards.
- Input control system seeks to control the selection and training process of an employee. However, it is important to ensure the availability of required competencies in the employees as desired by the organization for growth and development.

As Shell noted that out of these three systems, organizations can use any type of control system or combination of different models. Selection of the control depending on the structure, norms, and policies and administrative and information needs in an organization¹.

Control theory helps in performance management by evaluating the output of the system for its consistency with pre-defined sets of parameters. In case of any kind of deviation, it has adjusted by the controller in the system. This model helps the managers to control the performance of the employees. Similarly, it also generates faster and better outputs by regular monitoring and feedback. The model stresses, if an organization can execute control and performance more effectively and efficiently, it can easily cope up with the changes in its external environment.

As Eisenhardt discussed, control systems are organizational procedures that influence the activities of the employee to generate a benefit for the organization and ultimately increase the

¹<https://www.projectguru.in>

prosperity of the organization. The goal is to manage the employee in a way that creates value for the organization (Aamer, 2015).

Since the beginning of 21st century, business organizations have successfully adopted technology to automate sales activities such as expense management, appointment scheduling, territory routing, product configuration, and communication and tracking. These technologies have made sales forces more efficient. The automation of time-consuming tasks has enabled salespeople to complete their work faster, leaving more time for high-value-added activities and face-to-face interaction with customers (Andris, Prabhakant and Sally, 2009)

2.1.2 The System Theory

System Theory, first proposed by Ludwig von Bertalanffy has been used for decades as an analytical approach to understand how complex physical, biological, economic and social systems operate. Lomerson, explained that a system is a set of several independent and regularly interacting or interrelating units or subsystems that work together to accomplish a set of pre-determined objectives. There is triangular interdependence of three factors that interplay to achieve efficient functioning of Sales Force Automation system, the SFA software, hardware and users of the SFA. To promote synergy, these variables must be in their right conditions at all times. Sales force should be trained to master the use of SFA application. All needed gadgets for efficient functioning of the SFA system must be readily available in terms of quantity and quality. Appropriate software needs to be installed on the system as well. Failure on any of these subsystems would automatically downplay the efficiency of the SFA system (Henry and et al, 2018).

Companies are adopting information technology to enhance accountability and fact-based decision making. Sales persons can use IT technology to assess their performance and to plan and enhance the sales process and for more effective interaction with customers. Managers and supervisors can use IT to monitor and improve the performance of salespeople and sales effectiveness (Andris, Prabhakant and Sally, 2009)

Marketing and sales professionals in every industry need to adopt technologies to reexamine their markets, reach potential new customers, investigate customers' brand preference. For many

companies with complex sales model where competition has increased and technology advances have changed customer preference, the traditional sales approaches that have yielded success in the past not work for much longer. Technologies address age old challenges that are associated with sales performance which ranges from tracking, measuring, and analyzing sales activities and results, to improving or enabling certain parts of the sales cycle. Given the multitude of challenges facing sales companies today, technology companies are responding with products that can produce increased effectiveness and efficiency (Anneke and Brent, 2009).

2.1.3 What is Sales Force Automation?

In this study the researcher used a term sales data capturing device/technology which is has similar meaning with the term sales force automation (SFA). The researcher use both terms throughout the paper considering that they stand for the same issues.

Sales force automation is a technique of using software to automate the business tasks of sales, including order processing, contact management, information sharing, inventory monitoring and control, order tracking, customer management, sales forecast analysis and employee performance evaluation. Jos´eFilipealso defined Sale Force Automation Systems as information systems that automatically record all the stages in a sales process, and are frequently combined with a marketing information system, in which case they are often called Customer Relationship Management (CRM) systems (Jos´e Filipe, 2009).A number of definitions of Sales Force Automation have been proposed in the academic literature those includes,

- As Morgan and Inks defined, SFA systems utilize computerized hardware and software to provide automated collection assimilation, analysis and distribution of information to improve sales force productivity (Francis and et.al, 2006)
- Parthasarathy and Sohi also considered SFA as a system consists of centralized database that can be accessed through a modem by remote laptop computers using special SFA software. A salesperson can get constantly refreshed information regarding various aspects of the job. (Parthasarathy and Sohi 1997).
- Pulligetal defines SFA involves the application of technology to the selling function (Pullig et al. 2002).

- Speier and Venkatesh define SFA a system that supports the sales process by improving the speed and quality of information flow among the salesperson, customer and organization (Speier and Venkatesh, 2002).

SFA can thus be characterized by, and defined as, the application of information technology to support the sales function. SFA can thus be characterized by, and defined as, the application of information technology to support the sales function. Information technology comprises both hardware and software. Hardware includes, but is not limited to, desktop, laptop and handheld devices. SFA software applications offer a range of functionality (Francis and et.al, 2006).

2.1.4 Type of Data Capturing

Depending upon the procedure of collecting information, the data capture process can be divided into two segments:

- Manual Data Capture:** In manual data capture process, the data is entered manually by an operator using input devices like keyboard, touch screens, mouse etc. for keying in data in the form of figures or text into particular software such as Excel or any other data or word processing program. This method of data collection is labor intensive, time consuming and so businesses find it efficient to migrate to automated methods of data capture. However, the manual method is not totally extinct and still finds application in many business processes.
- Automated Data Capture:** It involves the use of computerized technology to capture data. This method has a high initial cost on account of the initial investment required as for instance, the purchase of technology but as the project proceeds, is found to lower the operating costs significantly on account of low manpower requirement. Further, with the majority of data today existing in electronic forms, the cost of using such automated technology has also reduced. Hence, there has been proliferation of techniques and technology of automated methods of data capturing, each suitable for a particular type data or source of data².

²<https://www.invensis.net/blog/data-processing/10-effective-ways-to-data-capture/>

Fig 1 DKT Ethiopia Automated Electronic Data Capturing Device



2.1.5 Sales Force Automation, how it Affect business efficiency

Business Efficiency is a situation in which an organization maximizes benefit and profit, while minimizing effort and expenditure. For the case of this study, business efficiency is defined in terms of profitability, growth, and cost timeliness quality of sakes data, staff wellbeing, workload, planning, monitoring forecasting, and reporting resource can be made in business functions that turns the minimum amount of input (time and energy) into the maximum possible output(Cummins, 2003).

SFA provides companywide integration among different departments in order to deal fast and business efficiently with customers independently of sales representatives' location, with fast, online offline access, or via mobile devices. Managers can maximize team productivity through the managed data and executives can get advanced accurate information. It's used by companies

around the world to help grow revenues, increase customer satisfaction and reduce expenses (Jos'e Filipe, 2008).

Information helps sales force understand their business efficiency. Most companies provide sales force with a sales report or sales dashboard to help them assess their current performance and figure out how to do better by analysing data on activities, customers, market opportunities and potential, sales, expenses, and profitability. Information can help sales force strengthen the sales process by assisting them with such activities as prospecting, qualifying, identifying customer needs, planning, designing the offering, creating value, tracking, targeting, and maintaining accounts.(Andris, Prabhakant and Sally, 2009).

In addition to this Information can enable salespersons to plan more effective customer visits, have up-to-date customers' profile, records of historical purchases, status of outstanding service inquiries, and descriptions of previous contact with other business firms by using the technology. Over all it enables them to plan ways to strengthen customer relationship, develop a more effective product positioning strategy which increase sales. If sales managers can access the latest performance data for the people they manage in a concise, actionable, and visually friendly format, they become better coaches and better able to help their salespeople be more successful. (Betsy and et.al, 2013)

Sales force automation also improve business effectiveness through offering process standardization. It helps salespeople share the company's sales processes independently of their selling methods and gives managers and executives more control over the company's sales processes and strategy, speeding up decision making and adoption. Companies spend a lot of money investing in information systems, and therefore, expect efficiency improvements to reduce the total cost of ownership and maximize profitable revenue growth. Sales Force Automation systems can reduce operation costs. SFA system provides real-time information improve communication efficiency and salespeople have less need of establishing expensive phone calls. Through strengthening collaborations among sales force, the system improve productivity reduce travel expenses (Jos'e Filipe, 2008).

2.1.6 Understanding the Conceptual Model

After going through literature review, the researcher constructs a conceptual model to illustrate the relationship among variables which analysed to measure the objectives stated in chapter one. The conceptual framework also used as a reference to design data collection instruments and collect the relevant information. It is a simple model consisting of two categories of variables, the independent and the dependent variables. Under this sub section each variable is discussed.

a. Level of education

Individual workloads increase, driven partly by the need to respond to rapidly swelling quantities of real-time data from automation of all kinds' and from greater demands for collaboration. (The Economist Intelligence Unit Limited 2015)

The level of education of salespeople is one of the important elements to have an effective using of SFA in an organization. Salespeople with higher level of education has the ability/ skill to adopt, use and manage new technologies that improve Sales performance. As Morgan and Inks discussed, sales specific IT, which is often called Sales Force Automation (SFA) enables salespeople to store, retrieve, and analyze data and manage important information throughout the sales cycle (Morgan and Inks 2001)

Research shows that there is an important and established relationship between sales force control systems and performance (Piercy et al. 2012; iao and Evans 2012a; Flaherty et al. 2014).The organization to be achieve the goal, as expected the sales department must be manage the sales personnel level of education accordingly. The organization able to control the performance of the sales personnel accordingly and ultimately is able to control the performance of the organization.

The level of education of the sales force also determines the ability of using the SFA information for better planning, forecasting, performance monitoring and tracking. Sales person ability of use of actual amount of sales information contributes to the organization's performance to meet the target sales, monetary goals and the organization desires (Evans et al. 2007).

In the framework, the researcher believes, the level of education of sales force has an impact of level of use, management of SFA technology. Salespeople in today's competitive environment

face a great deal of data that includes real time information about what they are selling, competitive markets, distributors, dealers, retailers and, ultimately, customers. In addition to this, salespeople need to keep track of competitor's activities and product market situations. Sales forces that have higher level of education can analyze and interpret sales data, customer data which increase their efficiency (Sergio and Rocio, 2015).

In organizations, mostly employees are normally recruited on the basis of their educational qualifications, knowledge, and abilities. Training is essential for new technology to be introduced to an organization. Employees go through rigorous training provides them information regarding digital workplace, organization vision and business mission, use and management of new technologies, communication and marketing skill.

RadhikaKapur discussed, training and development are regarded as imperative areas in the case of human resource management. In every organization, they are given utmost significance. They are connected to the business objectives and performance, they are an essential part of the organization, they are focused on setting tangible objectives for the employees and they are an integral part of the organization policy. The main focus of these aspects is to improve the knowledge and skills of the employees that is necessary in the achievement of organizational goals as well as personal goals. To make provision of the supply of managerial talent, which meet the anticipated needs of the future development of the organization in terms of environmental changes and development. In order to bring about changes and transformations within the working environmental conditions, it is necessary for the managers and employees to possess adequate knowledge (Radhika, 2018).

In the digital economy, a very competitive market and a fast-changing work environment, training is very important to build the ability and skill of the workforce to properly manage and use technologies that improve efficiency.

b. Experience in Sales

Sales experience has a direct effect on Salesperson's ability of sales presentation, using sales adaptive techniques, customer handing, understanding sales channels, approaches, information, the easy way to deliver and meet targets. It also influences the ability to use technologies targeting improving business efficiency. Research also shows, experienced salespeople might be

less responsive to supervisory involvement and follow-up when compared to inexperienced salespeople. It also has impact on sales force to easily adopt technologies with their sales skills. This in turn could influence how sales force control systems affect the performance of salespersons with varying experience (Bruce, 2004)

Technology tools can be considered as job resources, available to salespeople, that can make them more efficient, both in how they allocate and use their time. More specifically, technology can reduce the time salespeople spend on support and selling tasks. . (Sergio and Rocio, 2015)

c. Skill of Using SFA Device

Salesperson's professional skills easily to using SFA device and add value in business relationships with customer. Sales process is an organized flow of all the activities that need to be accomplished so that a company can successfully do business with a customer. Experience on using technology similar to SFA device contribute to performances. Sales force with better experience of using SFA device have better chance to easily manage application, software, hardware, easily collect, process and use data on sales activities, order processing, customer management, sales forecasting and analysis, sales force management, and information sharing. It also leads to speed access to needed information, promotes sales tracking, creates a customer database, improves sales reporting, and improves sales productivity and quality service delivery.

The usage of SFA application requires experience and improves order processing, provides up-to-date customer data, improves communication and collaboration between sales managers and sales force on field, reduce the time salespeople spend on non-selling tasks and thus give salespeople more time to sell, promotes efficient supervision among sales force, promotes auto generation of sales reports and improves scheduling and monitoring (Henry et al.2018).

d. Perception to Use

The Technology Acceptance Model attempts to explain the determinants of technology use across a broad range of end-user which explains an individual's acceptance of technology based on two specific beliefs: perceived usefulness (i.e. the degree to which a person thinks that using a system enhance his/her performance) and perceived ease of use (i.e. the extent to which an individual believes that using the technology require little effort). The model theorizes that both

beliefs determine acceptance behavior directly. The theory also suggests that perceived ease of use influences perceived usefulness, because, *ceteris paribus*, technologies that are easy to use can be more useful (Fred, 1985).

e. Continuous Follow Up

Application of new technology requires regular training and continuous follow up. When work environment is changing and there has been a transformation in use of digital technology, employee's needs to be skill full and have the required capacity to handle and use newly adopted technology, process and analyze the information obtained from the technology. Organization should set up a team who are responsible to provide regular support to sales forces that are using the technology. Continuous follow up and support improves sales force ability to easily handle, use and manage SFA devices. Information on this regard be gathered and analyzed to explore how continuous follow up is important to effective use of SFA device and its impact of business efficiency (Hemant and Regina, 2007).

2.2 Empirical Findings

A number of critical issues have been identified in reinventing the sales organization, including the following: (1) building long-term relationships with customers, which involves assessing customer value and prioritizing customers; (2) creating sales organizational structures that are more nimble and adaptable to the needs of different customer groups; (3) gaining greater job ownership and commitment from salespeople by removing functional barriers within the organization and leveraging the team experience; (4) shifting sales management style from commanding to coaching; (5) leveraging available technology for sales success; and (6) better integrating salesperson performance evaluation to incorporate the full range of activities and outcomes relevant within sales jobs today (Mark and Marshall 2016). In the broadest perspective, these new-age issues in sales management represent three key themes: (1) innovation—willingness to think outside the box, do things differently, and embrace change; (2) technology—the broad spectrum of technological tools now available to sales managers and sales organizations; and (3) leadership—the capability to make things happen for the benefit of the sales organization and its customers (Thomas and et'al, 2014).

Following the introduction of digital technology, in the 1980s, sales force automation applications have been used and offered technological support to salespeople and managers. Since 1990s, SFA gradually gained attention with introduction of software and hardware aimed at selling to various customers and to manage customer relationships effectively. Organizations are adopting SFA applications to automate sales tasks, including sales activities, order processing, customer management, sales forecasting and analysis, sales force management, and information sharing. SFA systems could be integrated into the selling function completely or partially (Henry, 2018). In India, the Banking sector was the first to adopt such technology to automate their banking activities. HDFC and ICICI banks adopted a technology to manage customer relationship which resulted a remarkable growth in customer loyalty, reduction in customer complaints, customer interaction and use of information for strategic decision making (Jayanthi&Sandeep, 2011).

Coca-Cola knows that it is no longer the larger companies that out-compete the smaller companies. It is now the faster companies that out-compete the slower companies. So to make sure that the most recognizable brand in the world doesn't lose a step in the disruptive age of technology; Coca-Cola relies on Sales force to keep their sales and distribution operations running smoothly. Ulrik Nehammer, CEO, Coca-Cola Germany says

“The most dangerous place to make a decision is in the office. You need to make the decision where the customer is.”³

A research conducted to evaluate the benefit of using SFA in palatine commercial bank indicates, sales managers' have a greater efficiency in managing customer relationships with additional control over sales activities. Sales managers' responses on whether SFA technology leads to less administrative work and provides with more accurate and timely information (Mohammad, 2012).

According to Mheret research finding, sales people using SFA have shown significant level of sales volume performance, information provided by the sales representatives, the sales manager

³<https://a.sfdcstatic.com/content/dam/www/ocms/assets/pdf/misc/The-Salesforce-Advantage.pdf>

can also control their sales, tracking the stock flow, it is easy forecast the sales, improved efficiency for better sales management, higher sales force productivity and improved communication between manager and sales person. (Mheret, 2017)

Research conducted in companies in USA and Europe indicates that, senior sales and marketing managers perceived sales force automation brought increased effectiveness through better customer targeting, time management, and call planning. These managers also felt such technologies improved internal and field communication, information flow, reduced paper flow and administrative time, which contributed to better sales force performance (Robert, 2000).

Similar research conducted on the effect of SFA on quality of service delivery in Kumasi, Ghana revealed, that there is a statistically significant moderate positive correlation between the use of SFA and quality service delivery. It has also been established that the use of SFA applications significantly and positively predict variance in sales reporting in the selling function of Micro Small Scale Enterprises in Kumasi Metropolis (Henry and at.al 2018)

According to Robert study results of adapting SFA system obligation on the workers the major obstacle proven and successful. The successful implications clear for the organization that are sales people, gain more experience in sales, develop their skills and the sales (Robert et la, 2004)

2.3 Conceptual Framework

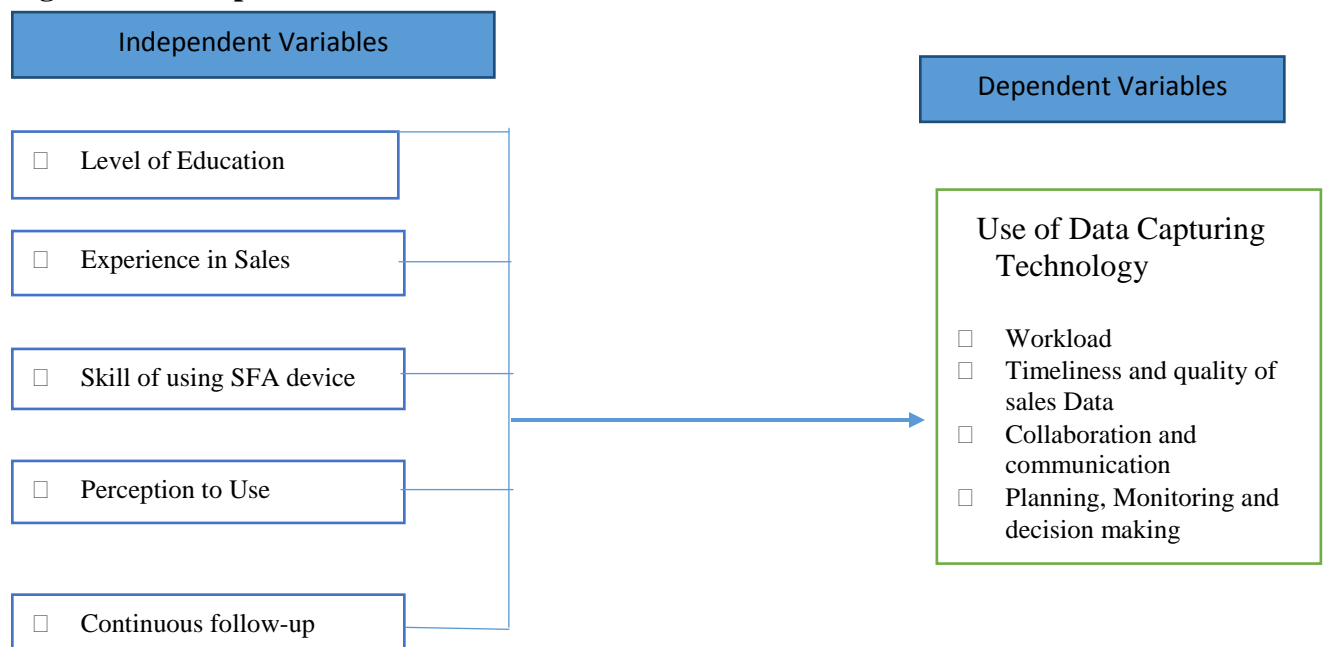
A sale is a boundary-spanning function with a more or less explicit role to produce value in business relationships with customers. Selling function is executed by sales force. Such value is delivered through sales processes. Sales process is an organized flow of all the activities that need to be accomplished so that a company can successfully do business with a customer continued that those activities should be a systematic chain of events that is measurable, repeatable and sustainable.

Sales force represents an employee group whose performance has a direct impact on company results. Specialized salespeople are more effective than generalists. Sales force is the users of SFA applications in selling activities. SFA leads to speed access to needed information promotes

sales tracking, creates a customer database, improves sales reporting, improves sales productivity and quality service delivery, facilitates the conversion of manual sales activities into electronic processes, improves sales efficiency, and excellent customer support services, improves sales closing rates, decreases sales administrative cost, improves customer relationship management leads to the automation and standardization of selling and administrative activities It also helps eliminate the issue of out-of-stuck, decreases markdowns/returns, leads to faster feedback marketing and has positive impact on customer satisfaction.

The usage of SFA application improves business efficiency which includes order processing, provides up-to-date customer data, improves communication and collaboration between sales managers and sales force on field reduce the time salespeople spend on non-selling tasks and thus give salespeople more time to sell, promotes efficient supervision among sales force, promotes auto generation of sales reports and improves scheduling and monitoring. It is under this context the study is designed to investigate the effect of DKT Ethiopia’s SFA device on the organization business efficiency focusing on Quality, depth and timeliness of data, Collaboration and communication between managers and sales persons, Productivity of sales persons and Monitoring, reporting and forecasting efficiency

Fig 2 The Conceptual Framework



Source: -Author, 2019. And Adopted from Technology Acceptance Model

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1 Research Design

A research design is a blueprint its arrangement of conditions for collection, analysis, and measurement of data to fulfilling the research objectives and answering research questions that combine relevance to the research purpose with economy in procedure. (Kotarri, 2004).

The research methodology is the design of a logical sequence that links empirical data to research questions and ultimately, to its conclusion. Thus, when choosing a methodology, great consideration should be dedicated to how the phenomena under investigation evaluated by picking the right instruments for data collection. Since having a methodology is a critical factor in having a valid study, this chapter is dedicated to elaborating the methods and techniques used to collect all data needed for answering the research's questions.

The study used descriptive research method, which contained quantitative approach that was chosen to retrieve objective, measurable and quantifiable data to explain the particular phenomenon and questions surrounding the relationship between adaption of SFA usage and business efficiency based on selected indicator.

3.2 Background of the Organization

DKT Ethiopia is the leading contraceptive social marketing organization which employs a commercial business model to sell and promote family planning and reproductive health brands. It has 28 years' experience in terms of selling its contraceptive brands to tens of thousands of commercial partners and promotes the brands using various promotional platforms (DKT, 2019)

The study is conducted mainly to investigate the effect of sales data capturing technology on DKT Ethiopia's Social Marketing efficiency. Ethiopia is DKT International's first country program, started in 1990; the year after DKT was founded. Since then, Ethiopia has made

remarkable progress towards improving access to and use of contraceptives and reproductive health product and reduction in HIV/AIDS transmission, maternal and child health.

3.3 Study Area

The study is conducted in all regional sales operation centres (area offices) and the head office. The regional sales operation centres are areas where the major sales activities take place by salespersons. Each regional office has a regional manager who does managerial duties and supervises the overall sales operation in their respective territories. Each regional operation centres has defined territories and sales forces. The distribution of sales forces by regional offices is presented below.

Table 1 Distribution of study population by area of the study

<i>Study Area</i>	<i>Study Population</i>			
	Sales Force	Project Staffs	Management	Others
<i>Addis Ababa</i>	26	0	0	1
<i>Central</i>	21	0	0	1
<i>North Eastern</i>	11	0	0	1
<i>North Western</i>	11	0	0	1
<i>Northern</i>	8	0	0	0
<i>Eastern</i>	8	0	0	0
<i>Southern</i>	15	0	0	0
<i>Western</i>	14	0	0	0
<i>Head Office</i>	1	4	3	4
<i>Total</i>	115	4	3	8
<i>Study Population Total</i>				130

Source: - Own Study

3.4 Sampling Techniques and Study Population

DKT Ethiopia implements its social marketing programs in using eight centralized regional offices and sales force of 130 (115 salespersons and coordinators, 4 project officer 3 managers and 8 head office staff) who routinely reach 9,000 clinical and 7,000 pharmaceutical outlets in

2,000 urban and rural towns. Regional Offices have area managers who are responsible for managing the overall social marketing operation and salespersons activities. DKT Ethiopia's head office also has three manager's four project officer, three MIS experts, and two researches and monitoring and evaluation three department officers heads who regularly use sales data for planning, analyze the sales information for decision making.

The salespersons use the SFA devices to capture and sync real-time sales information, the regional sales managers, national sales managers, MIS experts, and monitoring and evaluation officers' process, analyze the sales information for decision making.

Since the relevant population for this research is limited, this research methodology applied a census method which studies all 130 employees of DKT Ethiopia who use SFA technology for capturing, storing, analyzing, and using sales information on regular basis. The researcher trained area managers on data collection instruments through telephone and used the area managers of DKT's area offices to collect the relevant information from themselves and regional sales forces. Data from DKT's head office and Addis Ababa area office were collected by the researcher.

3.5 Data Collection Instruments

To collect the required information and answer the research question, the study employed a structured questionnaire. The questionnaire was developed in English and later translated into Amharic. The translated tool was then pretested in head office to make sure that each question included in the questionnaire is easily communicated to the study population. Five employees from head office who have experience of sale and well aware of the SFA device was selected and interviewed during the pilot testing. After the pilot testing, the questionnaire was revised and includes all the feedback collected during pilot testing. Most of the feedback was related to word appropriateness, missing information, formatting of the questionnaire and skip patterns to be followed for some items.

The research questions, objectives and conceptual framework were used as a guideline to construct the questionnaire. Questions related to the factors associated with the use and

management of SFA device, benefits, and perception of using SFA devices was included and reorganized in the questionnaire-based subsections. All relevant questions that was analysed to answer the research questions and answer the objectives of the study was included.

3.6 Source and Type Data Used

The study collected quantitative data using primary data source through structure questionnaire respectively. Secondary data from DKT data based were used to support the findings obtained from primary data. These included the nature and type of SFA devices used, the amount invested on the device, respondent background, information on regional operation centers and other relevant and supporting information be collected from the secondary source i.e. DKT Ethiopia MIS and program documents.

3.7 Data Collection Procedures

The researcher went to all regional sales operation centres and approaches the salespeople, coordinators and area managers using the questionnaire to be used for this study. Salespersons who were not physically reached because of business duties were contacted using the telephone. The researcher hired one supporting expert who has experience in quantitative data collection using a structured questionnaire and qualitative data collection using key informant interview. The researcher collected the information at the end of a month when all the regional sales forces were at offices for monthly reporting and performance reviews. In case this does not work, the research interviewed the sales forces using the telephone during the right time when they are comfortable to be interviewed. Data collection also taken place at the head office where the researcher is working. After data collection in regional sales offices was finalized, the researcher approached the identified study population from the head office which included national sales managers, MIS, and M&E experts.

3.8 Ethical Consideration

The respondent's identity was not included in the reports. Information collected from each respondent kept confidentially. Each respondent was given a unique ID and the names and

identity of the respondent was collected. The individual response was not analyzed and presented. All the information collected was processed, analyzed and presented based on objectives stated in the study.

3.9 Validity and Reliability

Pre-testing of the study instruments was conducted on six selected individuals who had experience in sales and data capturing, management and analysis. Those respondents selected for the pilot testing were not part of the main study. The reasons behind conducting the pretesting of the study instruments is to make sure that the contents in the questionnaire were not vague and coherent to the respondents which improved the validity and reliability of the instruments.

In order to ensure data quality, actions were taken. First, a highly experienced expert on data collection was recruited. Orientation on the purpose of the study was given to this study population to make them aware of the importance of the study and motivate them to provide the correct information. As far as possible, face to face data collection approach was employed to create a comfortable environment for the respondents and the questionnaires filled each day was checked every day for completeness and consistency. Data entry and cleaning was done by qualified statisticians who closely support the researcher. Questionnaire IDs was included in the original questionnaires and in the dataset in order to carry out audit trails to manage possible data entry errors.

3.10 Data Method, Presentation Analysis and Instrument

A data entry template was prepared. The first-in-first-out arrangement of data collection and delivery of completed questionnaires helped to start data entry as early as possible before waiting for the completion of data analysis. All the data collected were entered on statistical package social science software (SPSS Version 20) for data management and analysis. Following the completion of data entry, data cleaning was carried out. Descriptive statistical analysis was employed to analyse background characteristics of respondents using frequency distribution,

percentage distribution, mean comparisons with graphs and tables to describe the key results of the survey.

To measure the effect of SFA device on business efficiency based on the identified parameters, regression was employed. An explanatory method was used to see how the use of SFA device reduce workload, improve quality and timeliness of data, improve planning, monitoring and evidence-based decision making, collaboration and communication among sales force. Comparative analysis was made between effect of manual and SFA device on dependent/outcome variables presented on the conceptual framework.

CHAPTER FOUR

1. RESULTS AND DISCUSSIONS

This section begins with the background of the company that the study is based on and continues to present the findings and discussion of the study in achieving the objectives aimed to address. It has two main parts. The first part is devoted for exploring the data related to factors affecting the use of data capturing technology on effect on business efficiency and making descriptive analysis. The second part presents how these factors affect organizational culture of data management and use for decision.

1.1 Background of the Organization

Since 1990, DKT/E has distributed nearly 1.4 billion condoms, over 68 million cycles of oral, 46 million vials of injectable, 4 million long-acting reversible (IUDs and Implants) and 23 million cycles of emergency contraceptives to fight HIV/AIDS and promote family planning in Ethiopia.

Following the relaxation of the abortion law in 2005, DKT/E has made 84,000 manual vacuum aspiration (MVA), 3.2 million medical abortion (MA) kits and 5 million tablets of misoprostol (for PPH) available to eligible health facilities. The supply of safe abortion products and misoprostol contributed to the reduction pregnancy related maternal deaths and morbidity in Ethiopia.

DKT/E accounts for 31% of all FP/RH commodities needs in Ethiopia and employs a commercial business model. It sells its FP/RH brands to tens of thousands of commercial partners and promotes its products using various promotional platforms (DKT, 2019). In an organization engaged in marketing, technology plays a pivotal role in improving efficiency. It helps to reduce operation cost, creating opportunities to new markets, improving tracking measuring and monitoring performances and sharing lesson learnt (Henry & et.al, 2018).

DKT Ethiopia measures its social marketing program performance based on volume of commodities sold, coverage and penetration. Across Ethiopia, DKT Ethiopia has established eight regional sales operation centers. Each operation center has sales forces composed of Sales employees, Sales coordinators, Drivers and Area managers (DKT, 2019).

Table 2 Organization performance over the years, Different Sales Data Capturing Methods

Data Capturing Methods (DCM)	Year	# of Salespers on Who Issued Invoices	# of Invoices Issued to Customers	# of Customers Where DKT sold its Brands with Invoice	Volume of Products Sold to Customers	# of Invoices Issued to Customers per Salesperson	# of Invoices Issued/ Salesperson/ DCM
Manual Method	2011	43	29,111	8,492	774,645	677	612
	2012	59	39,871	12,109	1,211,856	676	
	2013	74	44,318	11,949	1,363,297	599	
	2014	79	47,040	13,320	2,244,765	595	
	2015	81	45,205	10,946	1,869,344	558	
SFA Method	2016	62	41,306	9,402	2,044,263	666	713
	2017	53	38,658	9,266	2,269,463	729	
	2018	50	36,689	8,753	2,332,130	734	
	2019	46	33,712	8,566	2,385,843	733	

Source: - DKT/E management and information system,

Currently, DKT/E has a total of 201 employees and 1 expatriate who are working in various positions including sales/distribution, demand creation, targeted BCC projects, logistic, MIS, research monitoring and evaluation, management, administration and finance activities. Of the total employees 36% are female employees.

1.2 Background characteristics of study population

This study collects data on the basic characteristics of the study population. All the selected respondents were covered in the study and the response rate is found to be 100%. The findings show that the number of years of experience of population ranges from 1 year to 27 years. The mean year of work experience of the Study population in DKT Ethiopia is about 7 years. 83 % of the study population has a work experience of four to ten years.

Since sales which involves challenging and routine processes including stock handling, replenish, order collection, distribution, monotonous travel, is dominated by male, particularly in developing countries. Of the total employees who are selected for this study, 72% are male. Of the sales force which is composed sales persons, sales coordinators and area managers and contacted for this study, the majority (76%) are male.

The majority of the study population (88%) are in the age group 25-45 years while only 3% are under 25 years of age. Study population age over 45 years, represented less than 10 % of the sample.

The vast majority of study population (91%) had completed schooling and graduated with certificate and above. 25% of them have diploma, and 64% of them have at least first degree, indicate, managing technology supported system like SFA is not hard for them.

Purposely, the researcher selected the majority of the respondents from sales and sales related functional units. 88% of the study population are engaged in directly in sales activities. Individuals who are at managerial level but uses sales data in their routine managerial activities are also studied. Based on regional workforce distribution, the majority of the study population (60%) are selected from four operation centres, Addis Ababa, Central, Southern and Western area offices.

Table 3: Distribution of study population by Background Characteristics (N=130)

Study population Characteristics		Number of Cases	Percentage (%) Distribution
Gender of the Respondent	Male	94	72%
	Female	36	28%
Age of the Respondent	Under 25 Years	4	3%
	b/n 26-35 Years	57	44%
	b/n 36-45 Years	57	44%
	b/n 46-55 Years	11	8%
	above 55 years	1	1%
Current level of Respondent's education	Twelve Completed	9	7%
	Certificate	17	13%
	Diploma	32	25%
	Degree	51	39%
	Masters	19	15%
Job Category	Others	2	2%
	Sales Force	115	88%
	Project	4	3%
	Management	3	2%
Regional Operation Centre	Others	8	6%
	Addis Ababa	27	21%
	Central	22	17%
	North Eastern	12	9%
	North Western	12	9%
	Northern	8	6%
	Eastern	8	6%
	Southern	15	12%
	Western	14	11%
Head Office	12	9%	
Total Study Population		130	100%

Source, Researcher's Own Source

1.3 Factors affecting the Use of SFA device

The survey tried to collect the possible factors affecting DKT/E sales force to use sales data capturing device. These included levels of education, work experience, skill of using SFA related device, perception to use, continuous follow up (technical support). This section discussed the

relationship between these factors and DKT/E's sales force agreement on using SFA device based on Likert scales measurement.

Education

Education is one of the possible factors affecting the ability of managing and using SFA device such as DKT/E's sales data capturing device. All study population (N-130) were asked the following questions to understand what they think about the relationship between the level of education and the use and management of SFA device. Data were collected based on responses given in Likert scale from scale 1-5.

Scale 1 represents for those said "I strongly disagree", scale 2 stands for those reported "I disagree", scale 3 is given for those reported "I am not interested/neutral", scale 4 is for those responded "I agree" and scale 5 represents for those say "I strongly agree" on the specific statement given. For all the statements relate to education, the mean score is higher than 3.7 indicated that, they agree on the effect of education on use of SFA device.

They think the level of education matters on how to collect information using SFA, using the device as basic tool for better sales performance, confidence to manage and use the technology. All the four statements on the relationship between education and use of SFA device added up and converted to single variable using SPSS.

This is important to create a variable that can used in measuring the effect on independent variables (such as education) and dependent variable (impact of SFA device on workload, timeliness of data, coordination, planning end decision making). Overall, the mean score of education on the table below indicates, respondents agree the level of education a sales staff completed is some sort of association with use and management of SFA device for better sales performances.

Table 4 Mean score of responses on Statements related to education and use SFA device

Proposed Statements	Number of Respondents	Mean Score of Likert Scales	Std. Deviation (SD)
With any education I can easily collect and sync any information by using SFA technology	130	3.7308	1.2059
As a salesperson, your level of education prefers to use this technology as basic tool in sales	130	3.9154	1.0195
You think that the level of education about and use of SFA technology is a condition for better sales performance	130	4.1077	0.8914
I am very confident in my level of education abilities to use SFA technology	130	4.1308	0.8661
Mean score of education (Independent variable)	130	3.9712	0.5478

Source, Researcher's Own Source

Work Experience

Work experience is a key parameter for any individual to accomplish a task. To understand relationship between year of work experience and use and management of a SFA technology, data were collected. A total of 130 employees of DKT/E were given statements related to association between sales work experience and use of technology.

Three statements related to this variable were formulated in the questionnaire and information was collected. The statements represented, individual's experience in sales, experience in using similar technology, and use of computers. All study population (N-130) were asked these questions to understand what they think about the relationship between the work experience and the use and management of SFA device. Data were collected based on responses given in Likert scale from scale 1-5. Scale 1 represents for those said "I strongly disagree", scale 2 stands for those reported "I disagree", scale 3 is given for those reported "I am not interested/neutral", scale 4 is for those responded "I agree" and scale 5 represents for those say "I strongly agree" on the specific statement given.

The mean score for first statement "Without any experience in sales it is difficult to use SFA device" is found to be 3.4 with SD of 1.13 indicate that to some extent this statement is not as much important as the other two statements to have an association with use of SFA device. The mean score of the statement related to experience in using SFA device to collect and sync sales

data and this led to better sales performance is 4.2 suggests, the majority of the respondents agreed on the proposed statement. Experience in working with computers has also less association with the second statement with mean score of 3.5.

All the three statements on the relationship between work experience and use of SFA device added up and converted to single variable using SPSS generate an independent variable that can be used in measuring the effect on work experience on use SFA device towards improving workload, timeliness of data, coordination, planning and decision making). Overall, the mean score of this variable on the table below is 3.7 indicates, respondents agree less on work experience as compared to the level of education of sales staff in relation to having some sort of association with use and management of SFA device for better sales performances.

Table 5 Mean score of responses on Statements on work experience & use SFA device

Proposed Statements	Number of Respondents	Mean Score of Likert Scales	Std. Deviation (SD)
Without any experience in sales it is difficult to use SFA device	130	3.4462	1.13480
In your experience the use of SFA technology you can easily collect and sync any information and achieved better performance	130	4.1846	.97872
You have a little or no experience in use of computer software for work related purpose for negatively influencing in your work environment.	130	3.4846	1.21512
Mean score of work experience (Independent variable)	130	3.7051	.76827

Source, Researcher's Own Source

Skill

Information on Skill of using SFA device and the importance of skill training was also collected during the study. Series of six statements were proposed and all the ample population were interviewed about how they feel about each statement. Having the required skill is a one of the important element for any individual to accomplish the assigned jobs.

The system theory proposed that sales managers choose which (structural) features of a sales force automation system to use based, in part, on their degree of knowledge and experience with the technology. As organizations spend more time training and using their sales force automation systems, they should become more proficient with them, understanding the benefits and pitfalls of the system. Therefore, sales force that are more experienced with SFA should be more skilful with its use which should result in more positive task outcomes i.e., greater efficiency and higher quality.

To understand relationship between year of skill of using SFA and benefit of using a SFA technology, data based on six related statements were collected. A total of 130 employees of DKT/E were asked about their argument on each statement related to association between skill and use and benefit of SFA technology. The statements represented, individual's knowledge and ability to use SFA device (sales data capturing device), the need to have training and continuous follow up, and the benefit of having the ability to use SFA device.

All study population (N-130) were asked these questions to understand what they think about the relationship between the skill of using SFA device and the use and benefit of device. Data were collected based on responses given in Likert scale from scale 1-5. Scale 1 represents for those said "I strongly disagree", scale 2 stands for those reported "I disagree", scale 3 is given for those reported "I am not interested/neutral", scale 4 is for those responded "I agree" and scale 5 represents for those say "I strongly agree" on the specific statement given.

Table 6 shows, the mean score for first statement "You think that the knowledge about and use of SFA technology is a condition for better sales performance" is found to be 4.1 with SD of 0.7 indicate that to almost the majority of the respondents agreed on this statement. Without knowing how to use SFA device, reporting better sales performance is challenging. Similarly, the mean scores of the second, fifth and six statements are over 4.3 with SD of less than 1.0 this suggests, the majority of the respondents approved the proposed statements which are related to having the skill of using SFA device is key for efficient and effective quality sales data collection, processing and analysis, while working the routine sales process. More respondents

also agreed that, having the skill of using SFA device improved communication with other salespersons.

Surprisingly the mean score and standard deviation of the third statement (MS 3.4 and SD 1.2) indicates that, the need to have skill training is less important than the other statements in using SFA device. This might be related to the fact that, most of the employees can manage smart phones, it might not be difficult to manage the SFA device they are currently using which has similar features of recent smart phones. The need to have skill training, and contours follow up might not be necessary under this condition.

Table 6 Mean score of responses on Statements related to Skill&use SFA device

Proposed Statements	Number of Respondents	Mean Score of Likert Scales	Std. Deviation (SD)
You think that the knowledge about and use of SFA technology is a condition for better sales performance	130	4.1308	0.7302
Through the using of SFA technology, you can process sales data and retrieve sales information more effectively and efficiency	130	4.4385	0.7044
Without skill training and continuous follow-up, it is difficult to use SFA device.	130	3.3923	1.2231
Skill of using SFA technology you are now able to contact and communicate with other salespersons more effectively	130	3.9231	0.8317
Skill of using SFA increase your productivity by allowing you more time for managing and analysing daily sales	130	4.3615	0.7044
Skill of using SFA minimizes work routines, less rework, save time and provide quality of sales data while managing sale processes	130	4.4846	0.6959
Mean score of skill (Independent variable)	130	4.1218	0.4191

Source, Researcher’s Own Source

All the six statements on the relationship between skill and use and benefit of SFA device added up and converted to single variable using SPSS to generate an independent variable that can used in measuring the effect on skill of using SFA on benefit of SFA device towards improving workload, timeliness of data, coordination, planning end decision making). Overall, the mean

score of this variable on the table below is 4.1 with SD of 0.4 indicates, respondents agree more on ability to use SFA device than employees' level of education and work experience in relation to having some sort of association with use and management of SFA device for better sales performance indicators.

Perception to Use Technology

The Technology Acceptance Model attempts to explain the determinants of technology use across a broad range of end-user which explains an individual's acceptance of technology based on two specific beliefs: perceived usefulness (i.e. the degree to which a person thinks that using a system enhance his/her performance) and perceived ease of use (i.e. the extent to which an individual believes that using the technology require little effort). The model theorizes that both beliefs determine acceptance behavior directly. The theory also suggests that perceived ease of use influences perceived usefulness, because *ceteris paribus*, technologies that are easy to use can be more useful (Fred, 1985).

To understand relationship between year of perception to use SFA and benefit of using a SFA technology, information was collected using six related statements. A total of 130 employees of DKT/E were asked about their perception on each statement related to association between perception and use and benefit of SFA technology. The statements focussed on individual's perception on use and benefit of SFA device (sales data capturing device) which include but not limited to simplicity of using SFA, the benefit of using SFA on daily sales activities, the contribution of the SFA on monitoring and tracking performances as compared to manual method and planning.

All study population (N-130) were asked five perception related questions to understand how the study population think about the relationship between the perception on SFA device and the use and benefit of device. Data were collected based on responses given in Likert scale from scale 1-5. Scale 1 represents for those said "I strongly disagree", scale 2 stands for those reported "I disagree", scale 3 is given for those reported "I am not interested/neutral", scale 4 is for those responded "I agree" and scale 5 represents for those say "I strongly agree" on the specific statement given.

User perceptions of new technologies may ultimately affect their acceptance of that technology. Recent research has identified a clear connection between user perceptions of Sales Force Automation and their acceptance of Sales Force Automation technologies. User acceptance, which is critical to the success of the SFA system, has been found to be influenced by user perceptions of the SFA system (Morgan and Inks, 2001).

Three fourth of the respondent reported, they agree on the statement “using SFA technology is very easy”. Table 7 also supports this finding with the mean score 3.8. This result also proves the finding on table 6 “skill training and continuous follow-up might not be key for using SFA device DKT/E currently employed. 85% of the respondents also agreed on the second statement *“As compared to manual methods, it has been very rare for me to collect and report missed, wrong information”*. The mean score for this statement is found to be 4.6 with SD 0.7, indicating the majority of the study population reported their agreement on the statement. SFA device DKT/E currently using helped employees collect sales data with less errors and missing.

Nine of the ten respondent (90%) say, they agreed on the statement *“as compared to manual method, the SFA Device I am currently using helped me easily monitor and track my performance on daily basis”*. The mean score of this statement is 4.3 with SD 0.6 suggesting that the majority of the population studied have approved the statement. Similarly 45% agree and the respondents and 40% of the study population strongly agree on the fourth statement *“as compared to manual method, the SFA Device I am currently using also helped plan what I should do on daily basis”* with mean score of 4.2 and SD of 0.8.

All the five statements on the relationship between perception on technology and use and benefit of SFA device added up and converted to single variable to create an independent variable that can used in measuring its effect on benefit of SFA device related to improving workload, timeliness of data, coordination, planning end decision making. Overall, the mean score of combined statements is 4.2 with SD of 0.5 indicates, the majority of the respondents perceived to use SFA device is easy and has positive effect on collecting quality sale information, planning, monitoring tracking performances. This supports the control system theory and findings of

similar researches conducted. Automating many of routine information flows involved in sales processes is the hallmark of employing SFA technology (BenMoussa, 2006). In terms of time and quality, SFA is assumed to have positive inputs regarding communication, presentation, customer information management, price quotes and order processing and tracking, analysis and reporting, promoting products according to customers' specifications, and online access to inventories (Boujena et al., 2009; Wang et al., 2008). Henson (2008) also points out that non-selling activities, such as processing paperwork and attending meetings, account for 60% of a salesperson time; thus, the demand for automating sales functions and tasks has introduced SFA technology not only as a necessary tool for salespersons but also as a required scene of contemporary sales cycles.

Table 7 Mean score of responses on Statements on Perception & use SFA device

Proposed Statements	Number of Respondents	Mean Score of Likert Scales	Std. Deviation (SD)
Using SFA technology is very easy	130	3.7923	1.105
SFA device can ease sales forces day to day activities	130	4.3538	0.669
Compared to manual methods, it has been very rare for me to collect and report missed, wrong information using SFA device	130	4.1231	0.924
Compared to manual method, the SFA Device I am currently using helped me easily monitor and track my performance on daily basis	130	4.2769	0.635
Compared to manual method, the SFA Device I am currently using helped me plan what I should do on daily basis	130	4.2077	0.832
Mean score of perception of salesforces on SFA (Independent variable)	130	4.1508	0.546

Source, Researcher's Own Source

Continuous follow-up

Application of new technology requires regular training and continuous follow up. When work environment is changing and there has been a transformation in use of digital technology, employee's needs to be skill full and have the required capacity to handle and use newly adopted technology, process and analyze the information obtained from the technology.

To examine the effect of continuous follow-up on use and management of SFA, the researcher collected information using three related but distinct queries. The queries were presented to all 130 respondents in the form of simple statements. The statements focussed on respondents' experience in facing problems and receiving continuous follow-up while adopting SFA device.

All study population (N-130) were asked three follow up related questions to understand the need to have continuous follow-up in effectively and efficiently using SFA for better sales performance. Similarly, data were collected based on responses given in Likert scale from scale 1-5. Scale 1 represents for those said "I strongly disagree", scale 2 stands for those reported "I disagree", scale 3 is given for those reported " I am not interested/neutral", scale 4 is for those responded "I agree" and scale 5 represents for those say "I strongly agree" on the specific statement given.

Table 8 presents the descriptive statistics of the study on these statements. Eight out of ten respondent report, they come to term with the first statement "*SFA is applicable and valid for sales whenever it's available*". The mean score for this statement is 3.99 which is similar to scale given for a response "agree". 77% of respondents and 74% of the study population agreed on the second and the third statements respectively with mean score of 3.8.

The researcher purposely combined and merged the three statements created a single variable "continuous follow up". This to estimate the effect of each variable on benefit of SFA which be discussed on later section. Overall, the mean score of the combined statements is 3.85 with SD 0.64. This suggests, as compared to level of education, skill and perception to use, continuous follow-up is less important for the respondents. But is relatively more important as compared to the level of work experience the employee reported in influencing how to use and benefit of SFA.

Table 8 Mean score of responses on Statements on follow-up use SFA device

Proposed Statements	Number of Respondents	Mean Score of Likert Scales	Std. Deviation (SD)
SFA is applicable and valid for sales whenever and wherever its available	130	3.9692	0.76694
You encounter problems and obstacles while using SFA technology	130	3.8154	0.79519
Without any follow up you can easily download and update you need any information by using SFA technology.	130	3.7769	1.12935
Mean score of continues follow-up (Independent variable)	130	3.8538	0.63896

Source, Researcher's Own Source

1.4 Measuring the effect of factors on use of Data Capturing Device

This section presents data analysis using correlation analysis and linear regression model. The correlation analysis is used to understand how variables related each other and identify the variables to be used in the linear regression analysis. Since data were collected based on likers scale using scale from 1-5 and they are not dichotomous, the researcher decided to use Linear than logistic regression model.

Before employing the correlation and linear regression analysis, the researcher generated both independent and dependent variables based on data collected using number of specific questions. The questions were given to the respondents in the form of statement with Likert scale. The responses of respondents for each statement were gathered and scores of related but not similar statement were computed and used to generate single variables. For instance, the variable “level of education” is generated based on mean scores of four related questions presented below.

- Without any education I can easily collect and sync any information by using SFA technology
- As a salesperson, my level of education prefers to use this technology as basic tool in sales
- I think that the level of education and use of SFA technology is a condition for better sales performance
- I am very confident in my level of education abilities to use SFA technology

All the other variables are also created using the same approach. Based on the objectives of the research and conceptual framework, the researcher formed five independent variables and one outcome (dependent variable). The independent variables are, respondents' level of education, respondents work experience, skill of using computers and sales, perception to use SFA, Continuous follow-up. Benefit of SFA in terms of improving workload, timeliness of data, coordination and collaboration among staffs, and planning, performance monitoring and decision making is taken as outcome variable.

Data for each separate variables of the dependent variable were collected using number of Likert scale statements. Improving workload was one of the variables generated using score of two related variables, similar approaches were applied for other dependent variables (see annexed questionnaire). The mean scores of each dependent variable were computed using SPSS to create one variable "benefit of SFA" that can be used for the analysis.

The linear regression is employed involves identifying the relationship between a dependent variable measured on continuous scale and one or more independent variables. A model of the relationship is hypothesized and estimates of the parameter values are used to develop an estimated regression equation. Various tests are then employed to determine if the model is satisfactory. If the model is deemed satisfactory, the estimated regression equation can be used to predict the value of the dependent variable given values for the independent variables.

4.4.1 Correlation Analysis

Correlation and regression analysis are related in the sense that both deal with relationships among variables. The correlation coefficient is a measure of linear association between two variables. Values of the correlation coefficient are always between -1 and +1. A correlation coefficient of +1 indicates that two variables are perfectly related in a positive linear sense; a correlation coefficient of -1 indicates that two variables are perfectly related in a negative linear sense, and a correlation coefficient of 0 indicates that there is no linear relationship between the two variables.

Table 9 Pearson correlation of variables used in the study

Variables	Level of Education	Work experience	Skill on Computers and Sales	Perception to use SFA	Continues follow-up	SFA benefits***
Level of Education	1.000					
Work experience	0.224*	1.000				
Skill on Computers and Sales	0.590**	0.229**	1.000			
Perception to use SFA	0.250**	0.288**	0.403**	1.000		
Continues follow-up	0.185*	0.159	0.294**	0.438**	1.000	
SFA benefits***	0.430**	0.287**	0.335**	0.628**	0.441**	1.000

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

*** Improving workload, timeliness of data, communication, planning monitoring and decision making

Source, Researcher's Own Source

The result of the simple correlation test between the dependent variable benefit of SFA (in this case benefit of using DKT/E sales data capturing device as a measure of improving workload, data timeliness, communication, and planning and decision making) and the independent variable level of education to use SFA is found to be 0.430 correlation coefficient with significant level of 0.01. It indicates that benefit of using SFA reported by respondents and their level of education as a factor to use SFA device have a positive linear relationship. Of the five independent variables, perception to use technology including SFA is highly positively associated with the dependent variable (benefit of SFA) with correlation coefficient of 0.63 which is also significant at 0.01 level.

During the inception of the SFA, DKT/E provided continuous follow up and technical supports to its sales force. During data collection the sales force selected for the study were given number of questions related to how the support given helped them use sales data capturing device (SFA) and benefit of device. The correlation metric shows, both variables are positively collated with 0.44 correlation coefficient. As compared to the level of education, skill and work experience, the independent variable “continuous follow-up has relatively strong positive association with the

outcome variable. Of the five independent variables, work experience of sales force has weaker positive correlation with the dependent variables.

Correlation among the independent variables is weak except correlation between level of education and skill of using computers and sales. This is best for employing all the variables in the linear regression analysis.

4.4.2. Liner Regression Analysis

Assumption used

The study was conducted using number of statements formed based on Likert scale. The Likert scale ranges from 1 (strongly disagree) to 5 (strongly agree). The response of each statement was recorded in scale. Related but not similar statements were re-categorized to form a variable. The mean scores of the scales given for related responses were computed and given for variable formed. The researcher believes that the mean scores of the responses are more of continuous values than dichotomous. That is why, the study prefers to use linear than other regression model

Before attempting to use all the variables in the linear regression model, a correlation matrix is built to figure out which independent variables are similar associations and to check if the dataset encounter problem of multicollinearity. Variables which has strong association are left in the fitting the model. For this purpose, a stepwise linear regression is employed. The researcher choose stepwise linear regression due to the fact that it is a method of regressing multiple variables while simultaneously removing those that aren't important (such as variables with higher multi collinearity effect). Stepwise linear regression is employed essentially to make multiple regression a number of times, and removing the weakest correlated variable each time when the fitting the model.

The purpose of the study is to assess factors affecting use of data capturing technology its effect on business efficiency case of DKT Ethiopia's social marketing program. In this regard, the researcher, use benefit of SFA instead of business efficiency. The study tried to redefine business efficiency based on improvement on workload, timeliness of sales data, communication

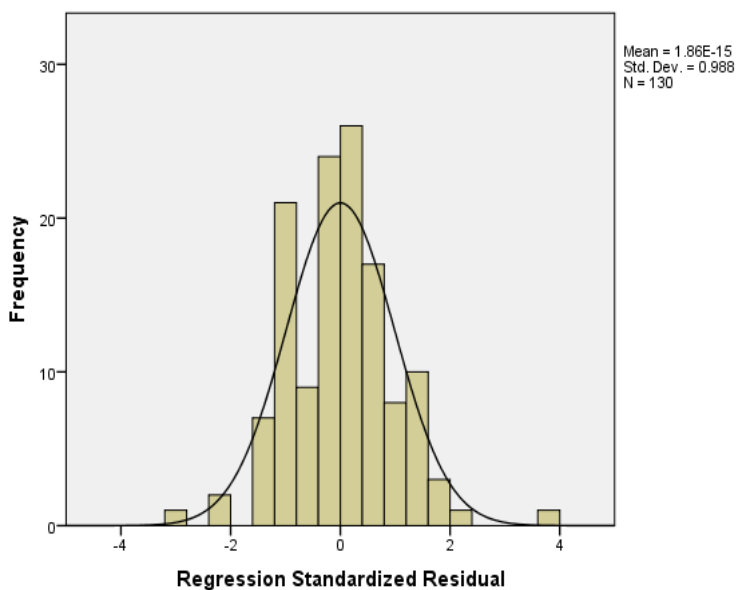
and coordination among sales force, planning, monitoring and decision making which are redefined as benefit of SFA.

Of the five proposed independent variables, only three predictors are selected. This is based on the result of the correlation matrix and to avoid multicollinearity effect. For instance, level of education and skill have strong positive correlations. But level of education has stronger positive correlation with dependent variable than skill of using computers or sale. The model selects level of education to be used as a predictor. Similarly, the association between the variable “work experience” and the dependent variable “benefit of SFA” is weak, hence the model does not consider the variable as a potential predictor.

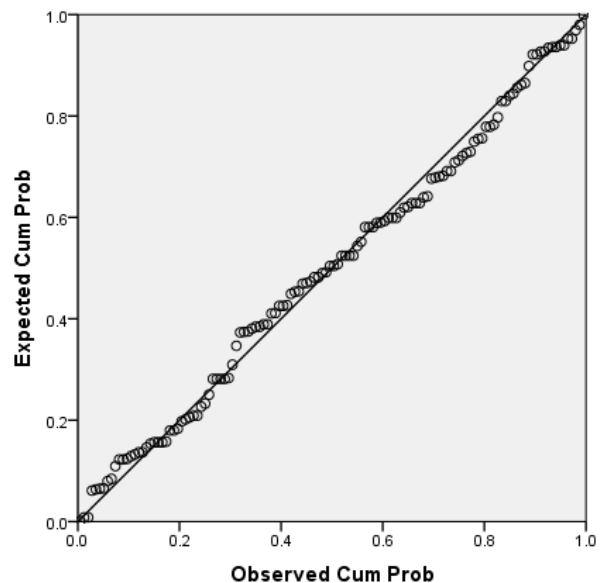
Normality and linearity test

The **linearity** assumption can best be tested with scatter plots. The **linear regression** analysis requires all variables to be multivariate normal. This assumption can best be checked with a histogram or a Q-Q-Plot. Using this procedure, all the variables used in they are found to have a symmetric distribution at their level forms. Thus, it is not important to transform them into other forms to ensure their normality.

Histogram showing the relationship between predictors and dependent variables



P-P Plot showing the relationship between predictors and dependent variables



Multicollinearity Test

To check if the dataset encounter problem of multicollinearity, the researcher did multicollinearity test using SPSS. Multicollinearity can detect with the help of tolerance and its reciprocal, called variance inflation factor (VIF). If the value of tolerance is less than 0.2 or 0.1 and, simultaneously, the value of VIF 10 and above, then the multicollinearity is problematic. The result of the tests revealed that for all predictor variables the level of tolerance is above 0.2 and VIF is less than 10 indicating that the data has no serious problem of multicollinearity and fit to be used in regression analysis.

Excluded Variables ^a

Model		Beta	t	Sig.	Partial Correlation	Collinearity Statistics	
						Tolerance	VIF
1	Level of Education	.291 ^b	4.372	.000	.362	0.937	1.067
	Work experience	.116 ^b	1.623	.107	.143	0.917	1.090
	Skill in Sales	.097 ^b	1.291	.199	.114	0.837	1.194
	Continuous Follow-up	.205 ^b	2.754	.007	.237	0.808	1.238
2	Work experience	.070 ^c	1.022	.309	.091	0.881	1.120
	Skill in Sales	-.105 ^c	-1.244	.216	-.110	0.583	1.716
	Continuous Follow-up	.180 ^c	2.553	.012	.222	0.778	1.247
3	Work experience	.065 ^d	.982	.328	.087	0.742	1.121
	Skill in Sales	-.130 ^d	-1.577	.117	-.140	0.575	1.739

- a. Dependent Variable: SFA benefits Improving workload, timeliness of data, communication, planning monitoring and decision making (dependent variable)
- b. b. Predictors in the Model: (Constant), Perception to use SFA (Independent variable)
- c. c. Predictors in the Model: (Constant), Perception to use SFA (Independent variable), Level of Education (Independent variable)
- d. d. Predictors in the Model: (Constant), Perception to use SFA (Independent variable), Level of Education (Independent variable), Continuous Follow-up (Independent variable)

Linear Regression Model Equation

Using the linear regression model, the study tries to answer the objectives and verify the conceptual model proposed during the inception period.

To find out the linear relation of one dependent variable with more than one independent variables, linear multiple regressions is used. To develop the regression line formula the dependent and the independent variables are denoted as Y = mean of Likert score of benefit of sales data capturing X_1 = Mean of Likert score for perception of sale force on use technology, X_2 = Mean of Likert score for effect of sale force 's level of education on use of sales data capturing device, X_3 = Mean of Likert score for effect of continuous follow-up the sale force think on use of sales data capturing device, X_4 = Mean of Likert score for effect of sales related skill of sale force on use of sales data capturing device, X_5 = Mean of Likert score for effect of sale force's work experience on use of sales data capturing device, b = is the coefficient which determine the degree of relationship between the dependent and independent variables, a = Constant value or an intercept of the relationship between the dependent variable (Y) and independent variables (X_1, X_2, X_3, X_4, X_5). Based on this relationship, the researcher constructed the following model equation.

$$Y = b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + a$$

The mean of Likert score of benefit of using sales data capturing device is the function of the mean of Likert scores of effect of perception on use of technology, effect of level of education on use of technology, mean of Likert score of effect of continuous follow-up on use of technology, mean of Likert score of effect of work experience on use of technology and mean of Likert score of effect of sales and computer related skill on use of technology,

On the process of developing the equation of linear regression, the researcher considered assumptions that have to be fulfilled before testing linear regression which are presented in the above section. Model summary of the regression result standardized and unstandardized β coefficients are also presented to find out all the necessary relationships between the dependent variables and independent variables.

Table 10 Model Summary of the linear regression model based on Stepwise method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.628 ^a	.395	.390	.34642
2	.689 ^b	.474	.466	.32424
3	.707 ^c	.500	.488	.31741

a. Predictors: (Constant), Perception to use SFA (Independent variable)

b. Predictors: (Constant), Perception to use SFA (Independent variable), Level of Education (Independent variable)

c. Predictors: (Constant), Perception to use SFA (Independent variable), Level of Education (Independent variable), Continuous Follow-up (Independent variable)

Source, Researcher's Own Source

Table 10 shows, the model summary of linear regression model in three different scenarios. First scenario is when the model only use single predictor (perception to use SFA). Based this model, the adjusted R square is 0.39 indicating that the single predictor “perception to use SFA” has the power of explaining 39% of the variability in the outcome/dependent variable “benefit of using SFA. The second model is based on two predictors (perception to use SFA and Level of education). This model has a power of 47% (0.466) to predict the variability in the dependent variable. The third model is predicting the changeability in values of dependent variable based on three independent variables or predictors (perception to use SFA, level of education and continuous follow-up. Based on the third model, 49% of the variability with respect to the mean score in the dependent variable (benefit of SFA) can be predicted.

it is entirely expected that that R-squared values is low in most fields that attempts to predict human behaviour, such as perception, practice, attitude. Typically, in such cases the R-squared values lower than 50%. Humans are simply harder to predict than, say, physical processes. It is also important to see if the R-squared value is low but have statistically significant predictors, it can still be used draw important conclusions about how changes in the predictor (independent variables) values are associated with changes in the response value (dependent variable). Regardless of the R-squared, the significant coefficients still represent the mean change in the response for one unit of change in the predictor while holding other predictors in the model constant. Obviously, this type of information can be extremely valuable. Based on this, the model used in this study is relatively powerful to predict the change the dependent variable.

The researcher further constructed a model to see how the change in predictors (independent variables) statistically affect the unit change in the dependent variable and how it is significant. The result and discussion is presented on table 11

All the independent variables used to fit the model has the power of predicting nearly 50% of the change to happen in the values of outcome variable (benefit of SFA). The study use variable benefit of SFA to indicate simple association between the independent variables (factors affecting and the dependent variable, the benefit of using sales data capturing device in terms of improving

- Workload of the salesforce
- Data quality (minimum errors and timeliness)
- Communication and collaboration among sales forces
- Planning, performance monitoring and decision making

The mean Likert scores of these components of the dependent variable were summarized and aggregated to each respondent to generate a single variable i.e. benefit of SFA. The study answers the specific objectives based on the findings of the linear regression model presented on table 11.

Perception on Use of SFA alone has more predictive power than the other three. In model one on table 11, as vales of mean score of the variable “perception to use SFA” changes by 0.63 (63%), there is a likelihood of one-unit change in the mean score of dependent variables “benefit of SFA”. This is also statistically significant at 0.00 level. This indicates, perception to use SFA or any technology has significant implication on the benefit of the SFA. The system adoption theory has also proved this model. For any technology to be introduced and integrated to an organization system, the benefit of the technology lies on the degree of employees’ and managers’ perception and approval.

Table 11 Values of Linear Regression Model based on Stepwise Method.

Coefficients ^a							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	2.229	.234		9.536	.000	1.767	2.692
1 Perception to use SFA (Independent variable)	.510	.056	.628	9.141	.000	.400	.621
2 (Constant)	1.540	.270		5.710	.000	1.006	2.074
2 Perception to use SFA (Independent variable)	.451	.054	.556	8.360	.000	.345	.558
2 Level of Education (Independent variable)	.235	.054	.291	4.372	.000	.129	.342
3 (Constant)	1.359	.273		4.972	.000	.818	1.900
3 Perception to use SFA (Independent variable)	.390	.058	.481	6.730	.000	.276	.505
3 Level of Education (Independent variable)	.224	.053	.276	4.227	.000	.119	.328
3 Continuous Follow-up (Independent variable)	.125	.049	.180	2.553	.012	.028	.221

a. Dependent Variable: SFA benefits Improving workload, timeliness of data, communication, planning monitoring and decision making (dependent variable)

Source: - Researcher's own source

Model two in table 11 employs both perceptions to use SFA and level of education of sales force in determining the likelihood of the unit change in the mean score of the dependent variable (benefit of using SFA). In this model, perception to use SFA has contributed 56% (0.556) of the unit change in the mean score of dependent variables. But the level of education has lower predictive power than perception to use. Only when the change in the mean score of education changes by 0.29 (29%), a unit change in the dependent variable occurs and it is statistically significant at 0.00. Even though it is weaker than perception to use SFA, the level of education is also important variable to determine the likelihood of changes happen in mean score of dependent variable (benefit of SFA).

Model three shows cause-effect relationship all the selected three variables and the dependent variable. Perception to use SFA, level of education and Continuous follow-up are fit in the model to see how each variable interact with the dependent variable. Under this scenario, the perception to use SFA has more predictive values (48%) than level of education (28%) and continuous follow-up (18%) in determining the unit change in the values of dependent variable. All are

statistically significant at less than 0.05. All the three variables are important in predicting the probability of changes occur in the dependent variable with varying degree.

Skill and work experience of employees has less predictive values and are not statistically significant in determining the changes in the values of dependent variable.

Overall, the study finding proves that, perception to use SFA is the most important factor in adoption and determining the benefit of SFA. Individual (either salesperson or manager) perception matters a lot to decide to use SFA system and getting the benefit of the system in terms of improving workload, generating timely sales data, using the system for planning, monitoring performance and decision making. Level of education of sales force is also important in the adoption of SFA. Such system require at least knowledge of using and managing contemporary communication and data capturing tools like smart phone and understanding the software, command of application. Education in this regard matters a lot. That is why, level of education of the respondents also reported as one of the significant factor of determining the adoption and benefit of SFA. Individuals may have positive perception on use of technology, have the required level of educational competence, but these only may not be enough to full adoption and SFA and getting the potential benefit of the system. Individuals needs to be trained and received continuous follow-up (technical support) on the technology they are employing. Even though not important as perception to use SFA and level of education of employees, the finding of this study also shows, continuous follow-up is also needed to improve the functionality and benefit of SFA.

CHAPTER FIVE

2. SUMMARY, CONCLUSION AND RECOMMENDATION

2.1 Summary

The findings of study provides the justification on the assessment of factors affecting the use of data capturing technology and its effect on business efficiency in terms of Improving workload, timeliness of sales data, communication-coordination among staffs and planning monitoring and decision making in the case of study DKT Ethiopia the study tried to answer the research question and objectives based on identifying the key factors which might have affected the use of sales data capturing technology DKT/E launched in 2016. Such factors include the level of education of the employee, work experience of employees, skill of employees, perception on technology and continuous follow up. The study further measured the effect of these factors on the benefit of using the device on organizational efficiency.

Data on such indicators (factors) were collected using structured questionnaire based on Likert scale. All the data were collected from 130 DKT/E' employees including sales force (sales persons, area managers, sales coordinators), program managers and decision makers. The study used quantitative approach to collect the required data. Qualitative information was also collected from decision makers using open ended questions. For each factor, series of questions using Likert scale were provided and the values of Likert scale were analyzed and presented using descriptive and regression methods.

Of the five key indicators (factors) mentioned in the research questions and specific objectives, perception to use technology is found to be most important key factors in determining the use of sales data capturing device among sales force of DKT/E. as the technology acceptance model (TAM) suggest perceived usefulness and easiness is key factor for adopting new technology. The TAM suggests, using an information system is directly determined by the behavioral intention to use it, which is in turn influenced by the users' attitudes toward using the system. Attitude and perceived usefulness are also affected by the perceived ease of use. The Attitude-Behavioral Intention relationship represented in TAM implies that, all else being equal, people form intentions to perform behaviors toward which they have positive affect (David, 1989). The mean score of the result on this

factor (4.1508) indicates that majority of the respondents perceived the sales data capturing device DKT/E introduced improve their daily sales activities, minimize sales data errors, improve monitoring and tracking performances, support planning activities. The result of the regression model also supports that perception to use technology is most important factor in determining the benefit of Sales data capturing device. With the beta value of 0.63n and significance level of 0.0, this variable is stronger in determining the likelihood of getting the benefit of SFA.

Education is key indicator in influencing individuals to adopt new behaviors, improve performances and adopt technology. The level of educations determine the ability to handle and manage new technologies introduced for improving organizational efficiency. This study also gathered information of this factor to assess how the level of education of DKT/E sales forces affect the use of sales data capturing technology and its benefit. Similar approach were employed to analyze and interpret the data. The mean score of the variable is 3.97 indicated, sales forces covered by this study believes the level of education is also important in determining the use of SFA device and its benefit. They believe those who are in higher level of education easily adopt and manage SFA device and can benefit the technology better than those who have lower academic qualification.

The liner regression model also shows, the level of education is the second most important factor in determining the use and benefit of SFA device among sales forces of DKT/E. The liner regression result indicates level of education is the second key factors in determining the use of SFA device and predicting the benefit of the technology. Many prior studies find that highly educated workers tend to adopt new technologies faster than those with less education. Such positive correlations between the level of education and the rate of technology adoption, however, do not necessarily reflect the true causal effect of education on technology adoption. The role of education in technology use and adoption: evidence from the Canadian workplace and employee survey finds that education increases the probability of using computers in the job and the estimates are consistent with the view that formal education increases the use of technologies that require or enable workers to carry out higher order tasks (W.Riddell and Xueda 2012).

Application of new technology requires regular training and continuous follow up. When work environment is dynamic like business organization, adopting new technology is important. Under this circumstances, employee's needs to be skill full and have the required capacity to handle

and use newly adopted technology, process and analyze the information obtained from the technology. When DKT/E launched its sales data capturing devices in 2016, training on the nature of the devices, how the device perform, how to manage and handle and communicate with device was provided to sales forces. Since then periodical follow-up and technical supports were also delivered. This study also tried to assess how these continuous follow-up affect the sales force of DKT/E in using sales data capturing device and the benefit of using the technology. Under this factor, number of question in Likert scale were forwarded to the study population.

The mean score of the Likert scale is found to be 3.85 suggesting that, larger proportion of the study population agreed, continuous follow up also important in affecting the use of SFA technology in times when sales forces face challenges and understanding new commands when downloading and sync new updates and sales information. The regression model result also supports this mean sore descriptive results. However, this factor is less important than the perception to use and level of education in determining the use of sales data capturing device and prediction the likelihood of getting the perceived benefit of the technology.

Other factors the study tried to assess, analyze and measure are the work experience and sales and computer related skills of sales force. Unlike perception, education and continuous follow up, these two factors are less important in affecting the use of sales data capturing technology and predicting the benefit of using the technology. The mean score of Likert scale for the factor “work experience is 3.705 and its correlation coefficient with dependent variable is 0.287 indicating that sales force work experience is not strong. Even though, larger proportion of the study population agreed that sales and computer related skills is also important in affecting the use and benefit of using SFA device, the correlation result (0.33) shows it has weaker association with dependent variable. In measuring the effect of the variables in use and benefit of the technology, the regression model does not select these variables as important determinant factors. The result is weaker and was not statistically significant.

2.2 Conclusion

The major purpose of this paper is to the assessment of factors affecting the use of data capturing technology on effect on business efficiency in the case of study DKT Ethiopia (DKT/E). The study employed descriptive statistics, correlation matrix and linear regression model to measure determinant factors affecting use and benefit of SFA in the organization. Factors such as perception to use technology, level of education, and continuous follow-up are more important than other variables (work experience and sales and computer related skill) in affecting the use of sales force automation like DKT/E's sales data capturing device. This study is suggestive of the statistically significant and positive relationship between perception on technology, level of education and continuous follow up with use and benefit of SFA technology.

This study provides a conclusive explanation of the relationship between factors and adoption of technology. Perception, level of education and continuous follow up are very important in adoption of technology and getting the benefit of using the technology. In addition, the finding of the study supports both control and system theories in understanding the importance information technology in business. Technology like DKT/E's sales data capturing device improves efficiency in terms of reducing work load of sales force, improving data quality (both content and timeliness), communication among sales force, performance monitoring and planning and decision making. Respondents with strong positive perception on use of technology, who believes education and continuous follow up have important factors in adoption of technology reported they have witnessed the benefit of using the technology.

It seems that relying on an array of information technology tools such as sales data capturing device, prompts salesforce to engage in more thorough planning behaviors, enhance their communication with managers and coworkers, effective planning and performance monitoring.

2.3 Recommendation

Understanding how technology influences business efficiency and effectiveness should be a research priority in today's technology-intensive world. Such an understanding can help organizations gain the competitive advantage they seek through their technology investments.

- Based on the findings of this study brings about an importance of three factors in affecting the use of sales data capturing device and benefit of technology on business efficiency. Thus it is recommended that the DKT/E continue on investing on and support its sales force to fully adopt technology for high level of data accuracy, monitoring and decision making. Particularly building positive perception is key factor for realizing the importance of the technology in its organizational efficiency. Analyzing the contribution of the sales data capturing device it adopted in 2016 and informing all sales force will bring the required positive perception.
- The results indicates that the sales force with higher level of education, and believe the impact of continuous follow-up reported positive association with use and benefit of sales force device. Thus it is recommended that DKT/E should invest more on providing its sales people with the needed level of education, provide periodic technical support to its employee which will benefit both the sales force and the organization in realizing the effect on the technology it introduced four year ago.

2.4Future Research

In business where dynamism is unique characteristics, organizations are eager to adopt new technology to improve efficiency. But investigation and implication of the enabling factors is crucial. Hence future research should focus on full scale evaluation of all potential factors that can determine the use and benefit of adoption of new technology including return of investment (what is invested and what is gained), challenges of adopting new technology, and future prospect. It will be better if comparative assessment is done between the traditional (manual approach) and modern (technology oriented). Future research needs to consider undertaking similar assessment with larger sample size, in more organizations.

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Annex 1- Questionnaire

The purpose of this study is to assessment of factor affecting using data capturing technology its effect on business efficiency, the case study DKT Ethiopia. This questionnaire is organized in three sections to collect the required information from study population. The first section cover measurement of independent variable, the second section coverdependent variable and the last section collect information from national sales managers, MIS and M&E experts on Checklist for Key Informant Interviews.

Please be aware the below table numbers represent as follows. (1)Strongly Disagree , (2) Disagree , (3) Neutral, (4) Agree , (5) Strongly Agree and put a tick mark☑ in the boxes which perfectly fit to your answer and try to explain in detail your opinion for the remaining questions.

1. Gender? Male [] Female []

2. Age?

Under 25 years [] Between 26-35 years [] Between 36-45 years [] Between 46-55 years [] Above 55 years []

3. What is the current level of your education? Twelve complete [] Certificate [] Diploma [] Degree [] Masters [] Other Specify _____

4. Job Position _____

5. Service year on the above job position _____

6. What are the factor affecting use SFA/ data capturing technology at DKT Ethiopia?

Section No. 1Independent Questionnaire

	No.1 Measurement Level of education	1	2	3	4	5
1.1	Without any education I can easily collect and sync any information by using SFA technology					
1.2	As a salesperson, your level of education prefer to use this technology as basic tool in sales					
1.3	You think that the level of education about and use of SFA technology is a condition for better sales performance					
1.4	I am very confident in my level of education abilities to use SFA technology					

	No. 2 Measurement Experience In Sales					
2.1	Without any experience in sales it is difficult to use SFA device					
2.2	In your experience the use of SFA technology you can easily collect and sync any information and achieved better performance					
2.3	You have a little or no experience in use of computer software for work related purpose for negatively influencing in your work environment.					
	No.3 Measurement Skill of Using SFA Device					
3.1	You think that the knowledge about and use of SFA technology is an condition for better sales performance					
3.2	Through the using of SFA technology, you are able to process sales data and retrieve sales information more effectively and efficiency					
3.3	Without skill training and continuous follow-up, it is difficult to use SFA device.					
3.4	Skill of using SFA technology you are now able to contact and communicate with other salespersons more effectively					
3.5	Skill of using SFA increase your productivity by allowing you more time for managing and analyzing daily sales					
3.6	Skill of using SFA minimizes work routines, less rework, save time and provide quality of sales data while managing sale processes					
3.7	Skill of using SFA increase your productivity by allowing you more time for managing and analyzing daily sales					
	No.4 Perception to Use the technology sales persons					
4.1	Using SFA technology is very easy					
4.2	SFA device can ease sales forces day to day activities					
4.3	As compared to manual methods, it has been very rare for me to collect and report missed, wrong information					
4.4	6 as compared to manual method, the SFA Device I am currently using helped me easily monitor and track my performance on daily basis not happen to Manual method					
4.5	as compared to manual method, the SFA Device I am currently using also helped plan what I should do on daily basis					
	No.5 Perception to use SFA device -Managers and Monitoring and Evaluation Experts					

5.1	Using SFA Technology improved my capacity to more productive in sales.					
5.2	as compared to the manual method, the SFA Device increased my managerial capacity to track, monitor my region’s social marketing performances on Daily, weekly and monthly basis					
5.3	SFA technology enables you managing sales forces more efficiently and effectively					
5.4	The process of monitoring salespersons to sale product becomes easier by using of SFA technology					
5.5	SFA technology results in better coordination and communication with the other departments in the company (e.g. the marketing and MIS					
	No.6 Continues Follow up					
6.1	SFA is applicable and valid for sales whenever and wherever its available					
6.2	You encounter problems and obstacles while using SFA technology					
6.3	Without any follow up you can easily download and update you need any information by using SFA technology.					

Section No. 2 Dependent Questionnaire

	Measurement of Work load					
1.1	Using of SFA device can minimized workload					
1.2	Using SFA device facilitate our social marketing activities and improve our performance					
	Measurement of Timeliness and quality of sales Data					
2.1	Whenever I collect and sync the information on what to the server using SFA Device, within a minute my manager/supervisor can easily see and monitor my performance, this could not happen to Manual method					
2.2	Using of SFA device can improving the timeliness and quality of sales data					
2.3	As compared to the manual method, the SFA Technology we are using improved my capacity to plan, forecast our sales Activity based on quality of sales data					
	Communication and Collaboration					
3.1	as compared to manual method, the SFA Device I am					

	currently using also helped me have easy and transparent communication and collaboration with my manger/supervisor					
3.2	Using of SFA device can improving communication and collaboration among sales person					
	Planning, Monitoring and decision making					
4.1	as compared to manual method, the SFA Device I am currently using also helped my manager/ supervisor to monitor and support me based on objective evaluation					
4.2	as compared to manual method, using of SFA Device to help plan what I should do on daily basis					
4.3	The SFA device we are currently using improved our capacity to have better performance in terms of quality of reporting, planning ,monitoringand decision making					

Section No. 3 Checklist for Key Informant Interviews

1 What is the factor affection of use of Data capturing technology in your organization?

2 What were the key process you organization has passed through during the using of SFA Technology?

3 What were the major factors that made you organization decide to use SFA Technology?

4 How much investment you organization allocated to use SFA Technology and does your organization meet the reason behind using the device?

5 Overall, as compared to manual methods your organization had employed for many years, what benefit have you got from employing using SFA devices?

6 What type of challenges are you facing currently when you are using SFA device for day to day sales operation?

Thank you for your time and cooperation!