

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF ART AND BUILT ENVIRONMENT
DEPARTMENT OF BUILDING TECHNOLOGY



TOPIC
DEVELOPMENT OF DECISION SUPPORT SYSTEM FOR ACQUIRING
PROPERTIES UNDER CONSTRUCTION

A Postgraduate proposal submitted to the Department of Building Technology of the Kwame Nkrumah University of Science and Technology in partial fulfillment of the requirements for the award of a Master of Science (MSc.) Honors degree in Procurement Management

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DECLARATION

I, JECHIE KELLY SETH student ID 20371727 hereby declare that this dissertation represent is my own work, except where due acknowledgement if made, and that, it has not been previously included in a thesis, dissertation or report submitted to this University or to any other institution of higher learning for any academic award.

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DEDICATION

This work is dedicated to God Almighty and to my late mother, Alice Akua Sekyebea Jechie Kelly, my father, John Jechie Kelly, my brother Eric Jechie Kelly and my sisters Rosemary Jechie Kelly, Rebecca Jechie Kelly, Elizabeth Jechie Kelly, and Regina Jechie Kelly all who have inspired me. I couldn't have done this without you may the almighty God bless you abundantly.

I also dedicate this work to all those people out there trying to achieve their visions and to make it in one way or the other, may this dedication be a basis of inspiration to you to work through hitches of life positioning God first.

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ABSTRACT

The Decision support system in acquiring property under construction in the Kumasi metropolis is still undergoing a transformation. This paper is informed by a study conducted to decide how the principles of best practices associated with the impacts of using DSS could be improved to fulfill the objective of their greater use in mainstream buying activities. The aim of this paper is to address one of the chief objectives of this study: To improve the conceptual decision support outline to facilitate the acquisition of uncompleted properties. The findings and outcomes derived through a broad literature review and a preliminary study. Moreover, this paper indicates that DSS development is required to deliver eminence outcome in order to support the further development of our economy and to provide a better working environment for individuals taking any buying decision. Although some leading management progressively encouraging learning within and seeking to make use of the phases to gain competitive advantage. Regrettably, diffusion is very slow. The reason is that there is no standardize way of acquiring property as it varies from one end user to the other. Apart from the obstructions to DSS making it challenging, it was found to be deficient and that the DSS concept is not something new and there are actually some good practices of implementation in the local business. After close analysis, some key determinants and obstructions to the implementation of DSS were also identified and evaluated in the research. A questionnaire was designed and administered in a survey. Data collected was analysed using the SPSS 16 software packages. The input of the paper is fixed in defining prospective DSS processes for sustainable development in the purchasing activities. Also, the paper will be beneficial to policy makers and stakeholders involved in working growth process.

Keywords: Decision Support System (DSS); Property under construction; computer base system

CHAPTER ONE

INTRODUCTION

1.1 OVERVIEW

This chapter comprises of the contextual of the study, statement of the problem, aim of research, objectives of this research, parameter of this research, the justification and significance of the research and the research queries, scope of the study and the theoretical structure.

1.2 BACKGROUND

From Etter and Caldwell (1995), although the financial analysis is important, the decision to buy real estate either completed or under constructed is much more important than a financial decision and required a decision supporting systems. Conducting this research is an important phase in deciding what to buy for the reason that the property must be a good real investment if it is purchased. Moreover, physical infrastructure is the country's financial pillar which becomes the channels to support industrious practices by means of permitting services and goods distribution internally and externally of the country, besides it also provide social and welfare benefit as objectives (Ofori, 2000). For example, offering accommodation from the ordinary component, justifies housing as one of the most fundamental needs of an individual and likewise provide individuals with a prospect in improving their standards of living. Hence requires a very critical decision.

During the NFES (2006) it was established “decision making Data driven” in many organization is very important as well the individuals throughout the state when acquiring a property. Because these establishments are so important for the analyzing and data used to reach them must be carefully developed through market analysis (Etter and Caldwell, 1995). To be able to do so, nevertheless, unprocessed information from unrelated background need be retrieved, incorporated, gathered, and the next reacted to convenient data in an appropriate manner. These tasks may possibly be proficient by a precise group of CPU info schemes known as Decision Making System.

A decision making system such as DSS remains a collaborative, elastic, besides easy-going super computer centered data system which employs assessed guidelines, prototypes, then, typical base combined by means of comprehensive structures accessible in various way plus the own understanding of decision makers, serving as precise, executable results to resolve difficulties which cannot be adjusted to organization discipline replicas (Tripathi, 2011). Taking effective decisions with reference to composite structures for example the administration of decision-making, procedures, industrialized processes, otherwise; the ability to use control in the army; or else nuclear power plant control frequently worries our intellectual competences (Druzzdel and Flynn, 2002). But for quality improvement, Decision supporting system has been in existence for a very long time. As it was confirmed by Marin (2008) that, conception within a collaborative system which is computer base that supports creative institutes and to create business improvement.

The use of Information Communication Technologies (ICT) in construction procurement either an existing properties or under construction properties has been infrequent and

piecemeal (Hore and West, 2005a). In Tripathi (2011) he affirm that, a Problem take place as soon as the structure is not meeting its recognized objectives or else it does not perform as per strategized, consequently, a Decision Support System provides complex decision making and increases its effectiveness. In Addition, solving a problem possibly will likewise take care of recognizing fresh prospects which is the very important action that a commercial institution agrees to and it begins with decision making. Decision support system is known to be as deep-rooted study as well as advanced area (Liu, S., *et al.*, 2010).

Despite the fact that, individual connections among a structure's instructions may possibly stay agreed, forecasting on the manner the structure react to a peripheral guidance for instance, course of action resolution is every so frequently. A considerable volume of pragmatic substantiation of which humanoid inherent decision making and conclusion could be completely from optimum, besides worsens more by means of density and hassle. For the reason that, within various instances excellence of resolutions stays essential, supporting a lack of decision besides making a decision remains the key science emphasis all the way through history. Self-controls for instance data, finances, in addition, procedures enquiries various advanced approaches aimed at providing sensible (Druzdzel and Flynn, 2002).

On the word of *The Law Society of New South Wales*, Procurement of a construction property remains often the biggest commercial decision they will ever make. A roof over one's head has been a source necessities for an individuals. Starting from the existence of human being, begun from trees as shelter and advanced to contemporary cement structure (Santhanam, 1995). Once someone want to acquire a house, he or she has the

option of ready custody apartment and resale houses as well as under construction projects. From the website publication on Under Construction Properties in Mumbai 2013, it was stated that, residential properties under construction developments has been categorized like those that have possibly been considered for a few month completion. The publication further added that, discovery in properties under construction is and always develop tremendously less given the significant online information available.

A paper-based communication process between the purchaser and is characteristically involve in acquiring procedures. Evidence shows that the construction industry is lagging behind other industries globally in adopting new technologies (Kong, Li and Love 2001). As every step in acquiring an under construction is dependent on input from one or more individuals, there are repeatedly problems in the practice.

1.3 PROBLEM STATEMENT

Despite the fact, individual relations in the midst of a structure's variables possibly will remain agreed, fore seeing just how structure going to respond to a peripheral operation for example the course of action on decision are frequently problematic (Druzdzel and Flynn, 2002). The lapses in DSS has been shown by different authors as concluded by Agrahari and Tripathi (2012) that, there is no generally accepted taxonomy of DSS. In Druzdzel and Flynn (2002) it was stated that, that are various categorized, direct items, sponsored advertisements, besides, task post unswervingly from the real estate developers on the main sites nonetheless characteristic problems exist and also restrictions toward the entire wealth. On the other hand, arate of adopting DSS in other business sectors, such as the construction industry has been very slow and piecemeal

(Hore and West, 2005a). This is because various activities are segregated from each other and each starts at the end of the other without adhesive linkage. (Adejim, 2009).

According to Tripathi (2011), the existing DSS has drawbacks. From the comments provided by research participants as well as from the survey data it was affirmed that, immaturity of technology to be single huge inhibiting feature (Gebauer, *et al.*, 1998). Organizations as well as individuals moreover encounter complications to change up-to-date decision Support system that rely extensively on interpersonal communication.

1.4 AIM AND OBJECTIVES

1.4.1. AIM

The main purpose of this study is to develop the Decision Support System that will facilitate the buying decisions on property under construction.

1.4.2. OBJECTIVES

The ideas of the study are:

1. To conduct a detailed literature review on DSS in relation to acquiring construction properties and to develop a clear understanding of how the DSS operates.
2. To determine the underlying constraints of trade exchanges confronting sellers and buyers in the underconstruction property trade.
3. To explore the underpinning decision factors/drivers/determinants of sellers and buying decisions under uncompleted property trade.
4. To improve the conceptual decision support framework to facilitate the acquisition of uncompleted properties.

1.5 SCOPE OF THE STUDY

1.5.1 Subject Scope

The study covered the impact of Decision support system on acquiring properties under construction and study is limited to building agent, construction companies, individuals, estate developers, social group, SOE's, private institutions in the Kumasi metropolis buying properties under construction. This was for the reason that, the researcher acknowledges effect of low or no Decision support systems in properties acquisition.

1.5.2 Geographical Scope

The Kumasi metropolis is chosen in terms of the geographical scope of this study for the reason to be able to close to the research, in addition, these would accordingly enhance economic sufferings which the study encounters with regards to the collection of data, the retrieval of questionnaire with easiness will be further make. The region covers a total land area of 24,389km² which is roughly 10% of the entire landscape within Ghana, besides, it has it regional capital Kumasi. The Ashanti Regional capital Kumasi is situated centrally in the Region, creating a significant means of transport plus marketable grounds, aimed a tin cooperation local then worldwide traffic. Moreover, Residential property as of 2010 compared with the number of household showed critical congestion in many homes. On a mean, around 7.4 individual occupying most houses in Ghana. This phenomenon will make it easier for the location of numerous and active actors for the study. The scope will encompass every person or group that has one way or other been involved in buying any existing properties or properties under construction and data is gathered from knowledgeable bases to give the study needed validity, consistency plus integrity.

1.5.3 Time scope

The study covered the period at which the individual's, public or private institutions has been using a particular, Decision Support system.

1.6 METHODOLOGY

This method adopted for this study consisted of the serious of the serious review of pertinent literature applicable to DSS. This helped the identification of the previous work done, input, imitations, current findings and its applications. This research type intended used in the study was descriptive. A simulation quantitative approach was used because the research involved in the erection of an non-natural surroundings in the interior of which appropriate info as well as statistics was produced, which was subjected to arduous quantitative analysis in a formal fashion. Because this thesis combined hypothetical aspects with practical data that may have an impact upon the interpretation of the theories with regards to how they are understood and functions in practices. The general research philosophy adapted was epistemology since the period of analysis is significant towards interpretivism (Cavaye, 1996) and to a minor extent, critical theory (Hirschheim, 1992) base of the literature review. The number of actors shall be determined by using the register of registered real estate developers at the Registrar General's department at the Kumasi metropolis and institutional data.

The actors such as the real estate developers, agents to house rents, private construction companies and state own construction enterprises will be used to assist collect data. The literature review culminated into the advancement in an important inquiry form or questionnaire that is revolved about objectives in addition to aims of the research in order to gather facts. Moreover, interviews, observation and document review will also be the main data collection tools.

The sample size for the study will be determined using snow ball. The tools for assessing the data collected is also made up of descriptive statistics and Relative Important Index (RII) for ranking the number of phenomena identified. The analysis was completed using SPSS for Windows 10.0. There is a detailed discussion of the research methodology in chapter three.

1.7 JUSTIFICATION

Tripathi (2011) stated that, DSS is an apparatus in creating a better resolutions within any organization. Grounded upon current, analysis in prevailing expert (Botia, *et al.*, 2012; Soyguder and Alli, 2009), DSSs supporting such functionality can be equally termed as ***Knowledge Management System*** (Burstein and Carlsson, 2008). According to Gebauer (1998), considerable amount has been written and said about the prospective of the internet to transfer the way business are done. But, the prominence in numerous programmable machine base device such as databases, planning software, and spreadsheets significant in making decision is not easy to over emphasize, again, research piece concentrations predominantly with Decision Support System basis, the portion which unswervingly holds demonstrating resolution difficulties as well as demonstrates paramount alternates.

For instance, the requirements of the contractor are misinterpreted by the supplier, a docket goes missing, transcription errors occur, the invoice is not correct, the goods are not all delivered at the same time, the delivery docket does not match the order, payment is held pending matching of documents problems can add significant delay and cost to the process (Hore and West, 2005b). With the intention of improving upon the Decision Support System presentation to mitigate its barriers study has remained keenly

performed in order to assimilate supporting system in making decision (Liu *et al.*, 2010). However, earlier studies discovered that the internet within tradition difficult resolution, Decision Support System gives the impression of diminishing during the 1990's for the reason that several fresh barriers arose in lieu of secluded separate DSS.

In Sharma (2015) cited Cushman and Wakefield recommendation that the state should undertake very initiatives to reinforce authority and recommends how to incorporate info and communication technology (ICT) into all sectors and processes to abridge processes, raise ease of use and accountability of services and ease monitoring procedures. DSS is changing virtually all functional aspects of a modern business in development world particularly in industries such selling. Through the continued development of the Internet, DSS offers unequalled prospects in lieu of productions to get superior proficiencies in business based commercial events (Hore and West 2005a).

Even though, some convention of information technology (IT) in acquiring and Electronic System data by the state agencies and government, particularly, furthestmost information handling and communiqué about procuring are still based on telephone and paper. The education in the effects that the deployment of Decision Support System and application even now had on some organization, we foresee even a lot essential alterations to business activities and organization structure over the next year as electronic buying solution and organizational structures over the next year as electronic commerce solution become more mature and more widespread (Gebauer, 1998).

1.8 LIMITATIONS OF STUDY

Comparing with further studies, the latitude as well as routine of which the research is conducted and will encounter limitation. It may possibly comprise attaining admittance of facts on or after designated respondent(s), dimension error in addition to the significance on data collection, investigation as well as inference analysis then deductions. These are ascribed as a result of inadequate period obtainable aiming at this research as well as commercial restraints impacts. The above constraint are on the other hand anticipated to be the grounds for endorsements attained on forthcoming study.

1.9 STRUCTURE OF STUDY

The study is organized keen on five key sections. The first chapter is transact on the introductory that is made up of the back ground of the research, the statement of problem, purpose of the research (Aim) and objectives or ideas, assumption, latitude, approach to the research, rationalization, limitations or restrictions as well as the research structure; The second chapter thinks through the assessed some interrelated literature to the research. The third chapter at this point scrutinizes the facts of all research methodology; The forth chapter attention on the assessment and debate on the collection of data for the research. Finally, the fifth chapter which talks about the summary, deduction as well as recommendation for the research. The structure underneath establishes the workflow of the research.

The structure of study will be divided into five (5) chapters as they have been grouped below

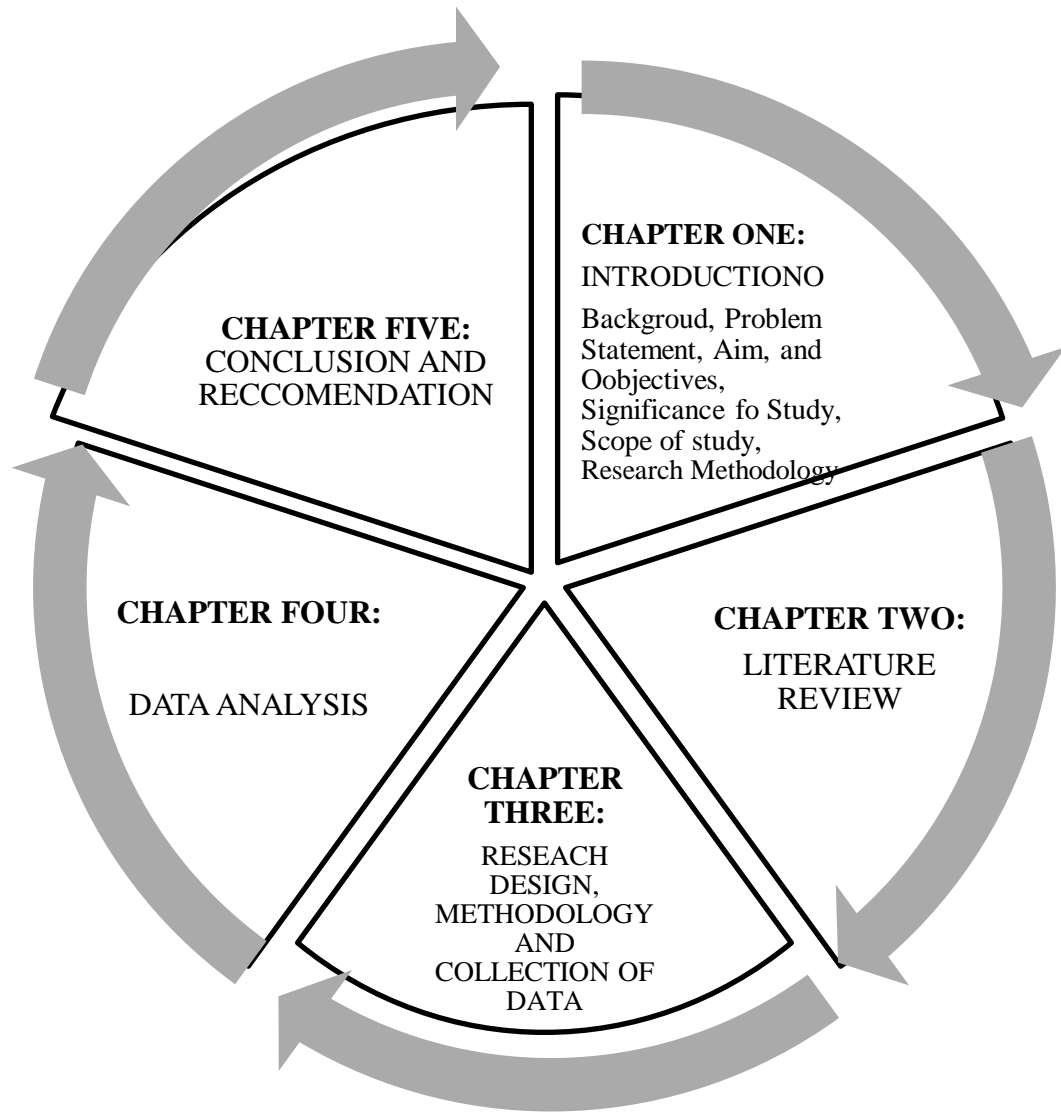


Figure 1.9.1.1 structure of the study

CHAPTER TWO

LITERATURE REVIEW

2.1. INTRODUCTION

Findings by preceding authors were look over in this chapter under the general heading of the decision supporting system in acquiring properties under construction, the researchers through different descriptive analysis came up with various analysis and conclusion. This chapter will be a way of documentary analysis of data which will provide the basis of the study.

2.2. OVERVIEW OF DSS

According to Power (2008) cited from Sprague Jr. (1980) assessment, the ordinary evolutionary improvement of info knowledge as well as how it is used in an administrative perspective which has directed starting from Automated Statistical Procedures to Organization Data Structure to the contemporary DSS drive. As DSS possibly is defined in several ways (NFES, 2006). DSS remain processor centered tools which support management processes in which management makes decision by way of offering another numerous current possibilities and by way of exhausting accelerative intellectual as well as understanding procedures (Wang, 2006). The situation also remains precise by way of structure which can use the knowledge of an individual to capture in within the computer to resolve difficulties that in general call for individual proficiency (Agrahari and Tripathi, 2012). In this opinion, the DSS picks up where MIS leave off. A contrary observation interprets Decision Support system by way of an significant detachment possessed by MISs and have been (Sprague Jr., 1980). There still

alternative view to be on familiar terms with a category of structure which has remained growing for a quiet time.

According Marakas (2003) which stated that, when firms needon the way to success as well as overtake on it business they have a need for an info structure which will be able to offer pertinent decision support info to decision makers. Likewise, a DSS supports every single stage of the decision making procedure and be able to assimilate the decision maker's own understanding in decision support data (Turban *et al.*, 2005). People and groups and involved in decision making come from all walks of life and include citizens as well as Government officials and other institute representatives (Santhanam, 1995). The main idea of DSS is to assist actors to identify various problem that they might encounter when acquiring a property. Groups of individual from all walks of life including citizen and officials from Government and other institute representatives involves in decision making (Santhanam, 1995). The main idea of DSS is to assist actors to identify various problem that they might encounter when acquiring a property.

Unluckily, even though the term "Decision Support" give the impression rather which is intuitive and simple, it is in fact very loosely defined (Bohanec, 2001). It means different thing to different people and in different contexts. Beside the challenges of DSS, NFES (2006) Concluded that, with the private and public sector organizations around the world, even though they remain still not understood by means of those deprived of higher technical training, these valued structure stay used.

2.2.1. Types of DSS

As different authors propose different classification there is no common conventional grouping of DSS (Zhengmeng and Xingling, 2012). With the use of connection by way of a user by means of principle, Haettenschweiler (1999) distinguishes inactive (passive), lively (actively) and cooperate DSS. Inactive (Passive) DSS is a structure that supports the procedure making decision, on the other hand, that will not carry out recognizable resolution proposed otherwise answered; Active Decision support system will carry out a recommendations as such; Cooperate DSS permits the makers of decision or the advisors in transforming, completing, otherwise developing of resolution proposals delivered by means of a structure, then it is sent back to the structure or system in lieu of confirmation. A range of overlapping terms such as online analytical processing were used by means of different researchers (Codd *et al.*, 1993), executive information system EIS (Mohammad *et al.*, 2012) group DSS (Yao *et al.*, 2010), knowledge discovery systems (Ho *et al.*, 2000) as well as commercial intellect (CI) (Atre, 2008) designed for structure that is proficient in assisting administrators decision making in place of a substitute. The emergence of other new marketable terms affirms the less use of Decision Support System label in trade journals and vendors website (Mohamad *et al.*, 2010).

A DSS possibly will show an info in a diagram as well as may possibly take account of a skilled structure of an artificial intelligent (AI) besides that might remain directed on executives o business else certain different class of intellectual workers.

According to Power (2002) there are various categories of Decision Support Systems and they classified keen on 5 kinds: the main aim are to assist organize meeting, or

elsefor handlers to cooperate with each other and the ordinary know how required to set out the support system in decision making a client an web server such as diagram and instantaneous communication system, on-line cooperation as well as Net Meeting systems; DSS of for data driven are directed on administrators, workforce also produce or supplied services then used to find out the record on facts silo seek definite answers for specific purpose deployingby way of using a mainframe structure, customer observer via net such as mainframe data bases which take a request structure on to assessed together with an integration in statistics in order to add importance toward prevailing files; DSS as Document Driven is the most common ,directed on general grounds of handler kinds in searching for web page then discover document on a particular conventional fundamental principles in searching for terms; for DSS in Knowledge Driven Base, 'knowledge base' deals with a comprehensive array of system casing operators of organization setting it up, on the other hand may possibly take account of others relating with the institute such as consumers and it is in essence and It is in essence in offering organizations with an instruction in choosing a service or a product; Lastly, the DSS in Model Driven are compound structure which helps assess resolutions concerning diverse possibilities.

2.2.2. DSS Project Members

A complex DSS made by means of a prototyping approach call for a group growth methodology. As soon as the structure is established the team may possibly require to maintain the system. Certain huge scale DSS remain made by means of a teams of 2 to 3 individuals otherwise by a greater member of ten group of 10 otherwise additional. DSS team Participants be drained from many areas in an organization, including the Info

Systems group (Power, 2002). A mix of corresponding skills requires any DSS improvement plan (Mallach, 2000). Typically, the needed expertise is not found in one individual. Consequently, it is not significant to assemble the right mix of contribution for a DSS project team in most circumstances (Power, 2002). The main DSS improvement responsibilities acknowledged in O'Neil *et al.*, (1997) in addition, it is enumerated underneath in a direction of growing the technical expertise. Also, more than one role possibly will be allocated to an individual. A given individual may be allocated more than one role Campbell and Wu (2011)

2.2.3. Benefits of DSS

With all the administrative problem for instance the optimization of travel times in airlines or train companies, DSS have been a huge basis of assistance (Agrahari and Tripathi, 2012). And DSS incorporates info structures built on linkage of computer technology. Decision Support System take account of Knowledge Base Systems that strengthen an institutional decision making practices. The management of an institution is supported by DSS. Those decisions do not specify in advance and might be changing rapidly. Management and organization at large has many benefits of using DSS. The profits comprises of:

Supports in time saving: study has confirmed that decision cycle time is reduced by DSS on behalf of an organization to deliver judicious data, that will be then used in making decision besides bring about a developed member efficiency. In Newbury (2010) it was affirmed that, DSS is obtainable in a manner that supports making many well-organized as well as operational business decision by the user. Again, Oz (2008) stated that, to save time and effort in their decision making, knowledge staffs use several types of

Decision support application. A perception purchaser as well as supplier will be able to propose numerous alternatives and DSS authorities those making decision to assess and examine info rapidly more than before (Santhanam, 1995).

Improves efficiency: in order to demonstrate structure's competence as well

As applied presentation, knowledge-based decision support structure stayed constructed (Wang, 2006). Berner (2007) suggested that the principal necessity otherwise difficulty as well as the markpart of care for which the CDS is being considered is to improve overall efficiency and however, be able to likewise possibly lesser expenses, develop competence.

Boost up cooperative communication: DSS usage within an institution assist in advancing relational communiqué in the middle of two similar class of

Work forces also among administration as well as workers.

Offers competitive benefit: the use of DSS in an institution provides offers a competitive benefits to handler over other who are not using DSS.

For instance, Info structures conventionally has remained principally considered. Ives and learmonth (1984) suggested that, an establishment will be able to turn out to remain competitive within zero points in its client care connections by means of info structure knowledge. As far back in 60's Notowidigdo demonstrated Information System as a Weapon to Gain a Competitive edge. This can be accredited to general factors, together with a drop in the cost of supporting information technologies; structural variations the economy cost by universal rivalry; besides perhaps most prominently, the deregulation of many financial services.

Helps in reducing cost. Although, cost reduction is not always a goal of building Decision Support System.

Studies then case studies disclose the use of DSS in an organization supports in making faster resolutions as well as decrease price. Healthy constructed and sound structured DSS can provide management with the knowledge it desires to reduce operating costs and increase profits (Rajalakshmi *et al.*, 2011). The Decision Support is made on ground of that, the statistics that are derived by means of techniques of mining data as well as active in decreasing all incurred cost to avert adversarial medicinal procedures as well as developing value of maintenance (Reddy *et al.*, 2009).

In Antunes *et al.* (2007) it was affirmed that, a DSS can assist several accommodation market to create an improved resolutions. DSS makes an acquisition process as well as activities uniform as it was affirmed by Tullous, R. and Utecht, (1994) that, one area of particular interest has been the integration of the procurement activities of the actors. DSS is constructed to be used directly by administrators and specialists. There is no data processing intermediary between you and your data. You simply access the system and issue guileless commands that inform the computer what you want it to do. The resulting DSS simulates effectively the generic exchange of product by a buyer (Costantino, 2009)

2.2.4. Key Enabler of DSS

Even supposing the evidence of Decision Support Systems (DSSs) improving performance and purchasing outcomes is convincing, the failure rate in introducing DSS in clinical practices is still over 50 percent (Trivedi, *et al.*, 2002). Previous studies have acknowledged several determinants for implementation DSS system, such as Technical Fit, Infrastructure (Khanh, 2015). There various critical success factors to DSS as Averweg and Erwin (1999) also discovered available discoveries of recognized critical

success factors for putting DSS into practice in developed countries. This study emphasises on factors related to current status of Managers' understanding about their own business and above management field, Technician team's understanding about business and system, Technician team skills. A DSS implementation accomplished when there is:

2.2.4.1. Top Management Support

According Ifinedo (2008) it was affirmed that top administrative support remains as resources prepared obtainable towards the acquisitions group, within coordination in the middle of a numerous administration as well as service area, then to conclude on the documentation on the entire buying process. A continuous support from a top management in a multi projects brings about success, originating from the implementation resolution in anticipation of the achievement of entire purposes of the development (Wickramasinghe and Gunawardena, 2010). The higher the top management support is, the more the staff admits the new system (Khanh, 2015). In the same way, lack of top management support is every so often seen as one of the causes of failures observed in companies.

2.2.4.2. Managers' understanding about objectives and management

There are some evident that managers cannot make a right decision if they are deficiency of knowledge in management field such as Financial or Human Resource (Khanh, 2015). This time and again happens with first line managers. As a result, manages need not only strong skills in their business but also skills in management.

2.2.4.3. Positive attitude of DSS user. Introducing a DSS seems nervous with obstacles among which low ease of system use (Varonen *et al.*, 2008), negative end-user

approaches towards the system and negative impact on buying workflows (Trivedi, *et al.*, 2002). On the other hand studies that evaluate DSS implementation continue to provide understanding into these and other factors influencing reception of DSSs. By way of systematically go through the present circumstances on what is known on factors contributing to DSS acceptance this study aims to contribute to a wider understanding of issues surrounding DSS implementations and in doing so demonstrate the gaps in current research on DSS acceptance (Kilsdonk *et al.*, 2011).

Earlier research literature obtained, writers seek out in the direction of establishing if these identical determinants occur within developing country such as Ghana precisely and to explore certain untechnical subjects aimed at organizations get on the implementation of plug-in (Averweg and Erwin, 1999). The determinants of DSS remain a main part things are done right. As Zopounidis and Doumpos (2003) cited from Thierauf 1982) states, condition the consequences within the parts not remain appropriate, an administration's energies aimed at time which is below anticipated. Consequently, Decision support System determinants remain parts of action which need to obtain unceasing besides cautious responsiveness from organization (Ali *et al.*, 2009).

2.2.5. DSS General Process

The integration of result produced at phases of process with computer defines decision making, human logic as well as integration of previous advanced model. Agraharias well as Tripathi (2012) join together and unites the deductions from knowledge grounded then statistical procedures and the relations of DSS end users with the use of computer system through a cooperative plus diagram handler edge. An expert system is defined as

a computer program designed to model the problem solving ability of a human expert (Durkin, 1994).

2.2.6. Short Coming in the Use of DSS

In as much as DSS is very useful in acquiring a property it also possess certain challenges such as incommensurability. Moreover, some remained perceived in lieu of building solely for merit appraisal dedications besides the procedures remain neither largely revealed nor used through professionals as well as customers at large. (Antunes *et al.*, 2007). Therefore, developing an e- purchases via DSS is a big challenge for many organization including government agencies (Wang, 2006). DSS application to farm management involves a range of chances and tasks, (Agrahari and Tripathi, 2012). Several challenges such as, prices associated toward both software and hardware, but then again additional expenditures on top hypothetically together with restructuring the establishment's statistical design, fluctuating facts assembly processes, as well as improvement of structure sanctuary(NFES, 2006).

Moreover, absence in the designated determinants, a frequently point out barrier to carrying out has been little knowledge in computer technology(Trivedi *et al.*, 2009). One of the up-to-date organized assessments on a literature demonstrated that, obstructions towards instruction devotion and a lack of attentiveness, arrangement, or else supposed self-efficacy to adjustment (cabana et al., 2003). However, early and continuing participant exercise as well as maintenance possibly will similarly be necessary.

Comparable authority plus enactment barriers, practiced by means of others planning as well as carrying out purchasing Information Technology IT then Purchasing Decision

Support Structures (PDSS). Notwithstanding the diverse disparity in primary description has remained recommended, DSS as a system supported by technology in which the ability to offer resolutions results for unstructured encounter is an acceptable understanding (Mohemad, et al., 2010). Study correspondingly recommends that, the catastrophe of an organization to bring into line an infostructure can result in lost opportunities (Bush, 2009). Several researches also recognized all the technical hitches purchase practices receiving as well as the usage of PDSS involvements, and difficulties in integrating PDSS involvement in workflow (Fieschi, 2003; Sittig, 2008; Moxey, 2010).

Consequently, many decision makers in the purchasing department could get be difficult to attain a consistent as well as independent facts, there is a need to get better understanding DSS then resolve on the manner it would be used very efficiently at procurement departments. In addition, the structures of the DSS is related to achievement otherwise disappointment remain defined below par, as a consequence causing difficulty structure scheme as well as carrying out for improvement (Mollon *et al.*, 2009).

For the reason of design and improvement difficulties, certain extremely advanced and possibly advantageous Decision support system have been disappointments and the difficult, frequently, of the reason being that the decision support systems are created and developed from the standpoint systems analyst and developers more willingly than the manager and the end user (Berner, 2007). Orders of directives or icons may be apparent to the programmer, nevertheless might remain entirely unidentified then confusing.

2.3. ACQUISITION OF PROPERTIES AND DSS

The function of computer when acquiring when using DSS is always at certain degree minimal in comparison to other corporate areas and considerably of computing skill remained under control of the Department of Accounting (Newman, 1994). Computer presentation has spread in the direction of other area of firm as time passed by, hitherto, for some reason, buying has been still at “the tail of line” with regard to applications then the countenance of computing ability carried round by means of spectacular improvement in microcomputer proposition on an prospect used for acquiring skilled closed the opening then perform a number of submissions, unswervingly connected to probable price investments (Newman, 1994). In Ghana, though there are a lot of innovation in the decision taken activities, Hore and West (2005a) concluded that, still Purchasing decision, processes usually consist of a paper base communication process between the buyer and supplier. The decision to acquire is important (Etter and Caldwell, 1995).

According to Economic Planning Unit (EPU) 2014, acquisition means every business deal relating thru as well as unintended handover of possessions title from an individual to the other. Purchasing procedures normally involve a paper-based communication process between the purchaser and provider (Hore and West, 2005a). Before making any buying decision buying decision, one should be abreast with his or financial information, one of the three parts process in acquiring property which could be better be done with the use of IT. Because in Etter and Caldwell (1995) it shows that buying decision is a three-part process: the market analysis, the financial analysis and other considerations.

On the word Thomasson *et al.* and Schuetze (2001) the core purpose of commercial info is to offer a grounds for making decisions. Resolutions prepared by way of using commercial gen disturb a very extensive sort of intercompany areas for instance asset resolutions, assembly assessments as well as valuing (Thomasson *et al.*, 2010). Beside, Decision Support System is one and only approach to achieve that (Andersson and sandlund, 2010)

2.3.1. Acquisition Processes

FDOT (2007) suggested that, as the owner of property needed for a project and furthermore explains your rights and options during the acquisition practice. Acquisition has become the single perceptible portion but of more complex resolution process created by means of purchaser acquiring decision made. This subsection emphasis on customer acquiring resolution process and the steps which makes the purchaser to buy the produce. The acquisition process influence the behavior of consumers (Filip and Voinea, 2012) and the processes are as follows, ***Need or Problem recognition***: Bose (2012) claimed that, the first and greatest important stages in buying processes is the necessity acknowledgement. Condition that there is no want and need there will be no buying. Because acquisitions are prepared owing to the recognition of needs.

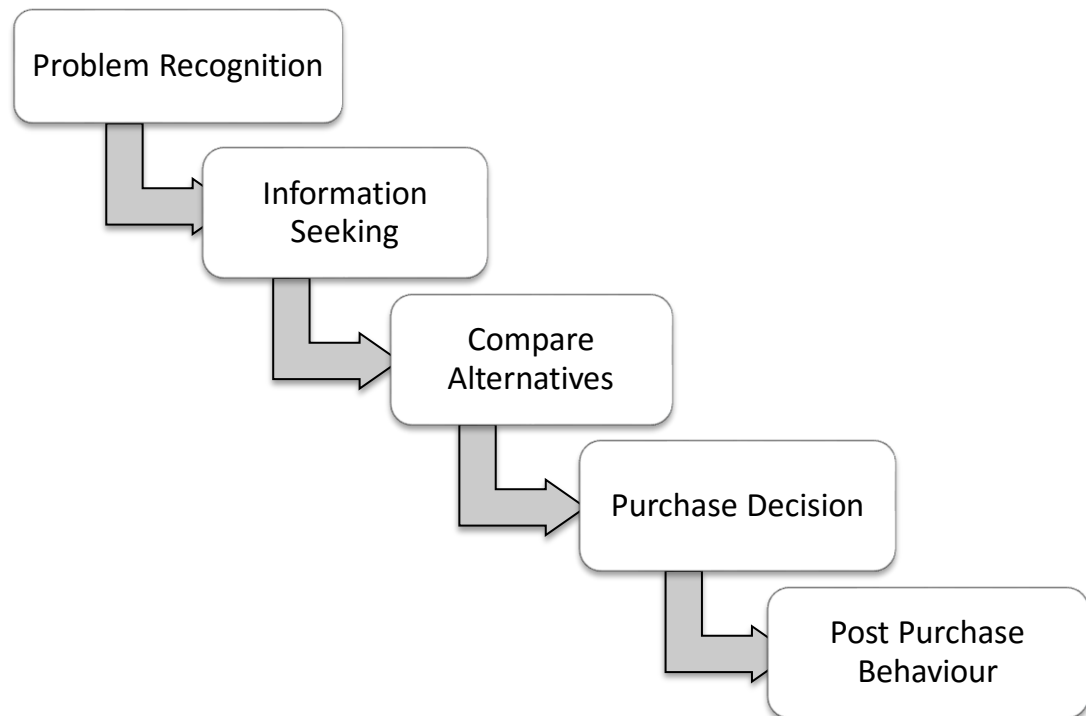
Seeking info: this is the stage where user pursues information about the possible solution to the problems immediately it need is identify (Gitlow and Wheatley, 2015). The handler possibly will pursuit further otherwise a smaller amount of info, depending on the difficulty of the type of selections made nevertheless the strength of participation in facts examining call for the use of DSS. On the other hand,

Compare alternatives: In Chen-Shu *et al.*, (2015) stated that DSS assist purchases to rank and make selection from alternatives. As soon as the data is gathered, the purchaser must assess the various alternatives that is offer to the purchaser.

Purchase decision: The purchaser has assessed the different solutions (Chamberlain *et al.*, 2012) available for respond to his need the various sources of DSS, he will be able to select the item in need or variety that appears utmost suitable to the desires. Then and there, continue toward the real acquisition.

Post-purchase behavior: As soon as the property is acquired then used, the purchaser have to assess the suitability per the required necessities that is to say the initiator purchasing performance. Besides whether it's the right selection in acquiring that property of not. If not, a dissatisfaction condition the assets has failed significantly. This could be done easily asPappas *et al.*, (2015) suggested the satisfaction and post-purchase intentions with service recovery of online

Figure 1: The diagram below illuminates the consumer buying decision process as a consumers go through several stages before purchasing a product.



2.3.2. Acquiring property under construction

A property is said to be under construction if that property is in the midst of being built and is not yet ready for use. A built piece is under construction when its unusual form is actively taking shape, when an accumulation belonging to it is being built, or when construction work has been paused. However, the construction phase begins when foundation work begins and ends with the purpose's completion (Bennet, 2007). The first physical fundamentals belonging to the structure must be put in place when this status takes effect, for that reason excavation and site cleanup do not normally signal the beginning of construction (Municode, 2000).

When an object's elementary form is completed it is considered to be topped out. The topped-out stage of construction covers the phase concerning completion of a structure's structural framework and the final finishing point of the structure, as soon as it is ready for usage and no major construction remains. This status shows that the structure has achieved its maximum anticipated dimensions, and any remaining work consists of filling in the framework and cladding the exterior.

Laurie (2010) affirmed that, topping out is one of the construction industry's ancient traditions and represents a defining point in the building process that represents the last piece of structural steel is in place and as soon as construction is complete then the process of moving in collections, building presentations and making the building ready for the owner takes place. On the other hand it remains under construction until all major design elements are completed and the object is ready for use. From IFRS (2009) it was stated that, it might occasionally remain challenging in determining dependably reasonable worth of a venture.

2.3.3. Impression on Acquiring Property Under Construction

Many actors for instance group of companies, private individuals such as real estate developers and public organization somehow acquire property for an intended purpose. Some of these actors are ignorant in factors to consider when acquiring a property under construction. As it was affirmed in Antunes *et al.* (2007) that, many actors think purchasing a household is generally a resolution adopted with the use of less in depth facts than obtaining a vehicle a car. The study of standards for actors' selection and performance measurement has been the focus of many academicians and purchasing practitioners since the 1960s (Wang, 2006).

Decision taken when purchasing a completed property is similar to that of under construction. This means that, generally, investing in things going through the construction stage remains topic to the same acknowledgement, demonstration as well as revelation condition as per accomplished purchased possessions (IFRS, 2010).

2.4. THE ROAD TO THEORETICAL JUSTIFICATION IN USING DSS WHEN ACQUIRING PROPERTY UNDER CONSTRUCTION

It is getting very rare in accessing a space for putting up a new building in addition to urban environmental conditions are degrading. However, superior quality mode of acquiring housing property is demanded by people on account of these condition (Antunes *et al.*, 2007). As it has been generally accepted that there is an impact of purchasing decision on firm's profitability and acknowledge that the growing diversity of available technologies frequently increase the number and variety of participants involved in purchasing decisions (Tullous, R. and Utecht, 1994). The significant advancement in unstructured statistics on firms on the requirement of developing approaches in order to increase as well as boost the end user then administrative manner of making decision by connecting using computerized instrument within resolution structures (Bandopadhyay, et al., 2007).

The implementation of DSS, distinctive consideration such as the IDAs well as constituting of the numerous assessment features then physical appearance that are at risk within these difficulties, illustrations are, cost of construction, user-friendliness construction costs, location, accessibility, environmental quality, design quality, the value of the land; The ordered cataloguing of the intention of evaluating performance on the hierarchy, The choice of sufficient principles (Adams, 1998).

Without DSS, purchasing property under construction would have been very difficult. The stated reason for the exclusion was that, the fair value of investment property under construction may be very difficult to reliably determined (IFRS, 2010).

In conclusion, Turban et al., (2005) stated a decision support system offers admittance to a variety of statisticsbases, format in addition to kinds for the reason that a DSS can remain engaged by way of detached device aimed at a single choice for decision or else it can be dispersed through the association making use of net and first-hand interacting skills.

2.4.1. Purchasing and Computer Technology System In Ghana

There is a significant revolution in the opportunities for value added supervisory performance and PC based processing technology created as a result in the variation in information system technology, related through the usage of net as well as advancing of “user-concerned with” fourth partgroup languages generates an outburst in decision support system then the DSS handlers computing computing actions. (Averweg and Erwin, 1999). In today's competitive surroundings, organizations cannot meet the expense of missing a prospects in improvedvalue by the usage of well-designed support system (Averweg and Erwin, 1999 cited from Palvia *et al.*, 1995)

This study, on the other hand, contends that most developing countries possess capability not at all to presenting an Information Technology besides actual restricted aptitude to uphold then advance introduced. There have been many efforts by managements of developing countries to address the constructing of information resources such as document referencing structures, management information systems and statistical services (Avgerou, 2001).

2.5. DEVELOPMENT OF DSS IN ACQUIRING PROPERTY UNDER CONSTRUCTION

From Zhengmeng and Xingling (2012) it was affirmed that, the future of DSS will without doubt remains dissimilar from the adaptable as well as increased improvements appreciated just while ago. Increasing the use of DSS does not remain an expertise development but rather a statistics development determined by means of business requirements as well as reinforced through skill implements (NFES, 2006). Development is a continuous process (Santhanam, 1995). Before a DSS is design one has to consider the attributes that characterized the value to the property to be acquired. DSS is often mentioned in association with Data Warehouses and Online Analytical Processing OLAP (Watson,1998). There have been prior efforts to develop DSS. As Li (1996) argues that, the benefits of ICT placement are marginal, if simply imposed on an already inefficient production process and that the processes should be restructured to maximize the use of ICT.

According to Another recent trend is to associate DSS with Data mining, Though, the is a presence of DSS in the acquiring property, it is not enough to as stated in Claver *et al.* (2000) that, Nonetheless, evaluating it in depth bring to bear the attentiveness in customary difficult resolving decision support system advent should be declining previously for the reason that numerous fresh encounters ascending in lieu of inaccessible, standalone decision support system. Problem of property assessment involves multiple attributes of which a lot of the property is considering the quality characteristics that influence price of the property (Antunes et al., 2007).

The introduction of user-friendly spread sheets, database and communication devices has been able to lower the routine obstructions of DSS (Newman *et al*, 1994).

Nevertheless, there are still room for improvement in the DSS for acquisition for properties under construction as it was confirmed by Wang (2006) that, although, have developed the Knowledge Base Decision Support System, there are numerous ways to achieve that. Because the current DSS lapse many researchers are developing various DSS to meet the current challenges. At the present time, several researchers change the purpose of advancing skilled structure based (Agrahari and Tripathi, 2012). Investment made in DSS guarantees a number of advantages that may be more important than the cost in various instances, nevertheless a major resolution on the other hand. Acquiring a DSS indicates a substantial monetary as well as functioning obligation (NFES, 2006).

Turban *et al.* likewise affirm that, a decision support system can be advanced as well as developed through its end users then the operator is able to perform altered approaches in configuration for the reason that the DSS's capability to scrutinize decision making situation. Improvement on prevailing technologies can be fully integrated to eradicate paper work from the complete procuring procedure (Hore and West 2005a).

The purpose of this subsection is to briefly examine these different views of DSS, and present a framework that proves valuable in integrating them. The framework enunciates and assimilates key worries of more or less DSS improvement "participants".

2.6. A DSS MODEL FOR ACQUIRING PROPERTY UNDER CONSTRUCTION

2.6.1. DDS Approaches

According to Averweg and Erwin (1999) it is likewiserey on that, assessing the success of DSS is for the most part troublesome for the reason that, it is fitted connection. The proposal in addition to putting DSS into practice remains scheduled hi-tech variation, also, how well the change process is managed depends on the achievement otherwise disappointment in a proposed DSS (Haug, 2011).Constructing DSS is often very expensive (Delen and Pratt, (2006).

Consequently, alternately design and developmental approaches to DSS required a critical scrutiny. Power and Sharda, (2007) claimed that, Decision support system stay schemed besides advanced to assist individuals take a well and also extra active conclusions than without the use of computer technology. It is very difficult in creating any form of DSS and for the reason that as there is variation in individual characteristics, thinking ability, what they hold on as their job, profession and the resolution they required to make (Eden and Ackermann, 2013). Furthermore, various set of requirement is need in DSS and variety of various needs has led to creating and development of a broad capabilities and systems of DSS.

2.6.2. The Implementation Of DSS In Property Purchasing Activities

On an account of a complete indicator for successful DSS implementation there is no universal agreement(Averweg and Erwin, 1999). This is generally done with the intention of attracting potential buyers rather than with the view to earn rental income (IFRS, 2009). However, one conceivable, seemingly measureable methodology is a

study on cost benefit analysis, on the other hand, practically, it will be challenging to offer important assessments (Averweg and Erwin, 1999).

2.7.CONCLUSION

The DSS as it is called, when developed for a purchaser will be useful to concern public agency, private and real estate developers. This structure or system will create a public awareness in the procedures as well as guidelines prevailing, which will also assist someone to make a judgment on whether money inculcated into the development is value. This system will also allow one to choose a property under construction according to their choice. From the Real Estate developers, individual and Government agency's perspective, this system will help the promoters to buy properties, which will satisfy the rules procedures and guidelines (Santhanam, 1995).

From the above literature review, considerable as writers have analyzed effectiveness of inventory management in improving customer relations and loyalty in manufacturing firms, very few have paid particular attention on the relationship that exists between the two variables. Therefore the researcher intends to establish more about the relationship between inventory management and customer satisfaction from the field study. Concurrently, the available space to build new housing is getting scarcer and urban environmental conditions are degrading. As a result of these conditions people are demanding a superior quality for housing. Therefore, there is a growing need for more scientifically sound methods for performing a systematic housing assessment, capable of dealing with multiple, conflicting and incommensurable aspects both of qualitative and

quantitative nature, as well as responding to the concerns of different stakeholders such as developers, consumers, government agencies, municipalities (Antunes *et al.*, 2007).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. INTRODUCTION

This section is aimed towards explaining what philosophical interpretations and approaches that will guide us throughout this research. This will range from how the nature of reality and understanding to the design and what strategy that will be exploited. Furthermore, a summary of how the different philosophical choices are coupled with each other in order for the readers to have a clear picture of our choices before continuing with the theoretical framework. This chapter also presents the design and method for data collection, the research approach, demographic background of respondents and also the tools for analyzing and primary data collection demonstration to address the main subjects outstretched in the objective and aim of the research. Also, it provides details in what manner the data was collected, preserved then how it explained the improvement in Decision Support System in acquiring property under construction. The chapter will be concluded with an elaborate discussion of the ethical, legal and social considerations that are relevant for this particular study.

3.2. RESOLUTIONS TO TOPIC SELECTED

The basis on which the choice of my topic was established is the fundamental interest in DSS. Throughout the studies within procurements and, purchases and supply, I could notice directly the extents to which Decision support systems has been used in many area of purchasing, but a little work has been done with regards to purchasing properties

under construction. For that reason, this study comes as a way to explore the impact of the usage of DSS on acquiring properties under construction.

Additional drive for my choice of topic is that I had the enthusiasm to conduct research within an area that was fairly new and unfamiliar. As discovery quality is difficult to define and there are different ways in which quality can be measured, it makes the preferred area more complex and as a result less forthright. On the other hand I want to challenge myself and by doing this with a complex research question we hope to gain appreciated intuitions into the impact of DSS in acquiring property under construction.

Moreover, the key predetermination permeating this research is that the application DSS in the area of this research has become very difficult and not developing. But, it is also anticipated that not all DSS user are prepared to upgrade the use of the DSS in their operational activities.

3.3. RESEARCH PHILOSOPHY

Philosophy of a research is well-defined as the development and nature of knowledge (UK Essays (2013) cited from Saunders, *et al.*, 2009). Although, the meaning may sound very thoughtful, UKEssay (2003) clarified further the basic meaning accurately. Research philosophy of this work relates to how reality and the knowledge created within it is seen. Saunders *et al.* (2012) describes it as the development of knowledge and the nature of that knowledge. Also, Research Philosophy is composed of two parts. They are; epistemology and ontology. The former refers to the knowledge that is utilized and the latter the reality and the nature of it.

3.3.1. Epistemology

Conferring from Long *et al.* (2000) epistemology refers to the foundation of knowledge and how it can be transferred to others. Within this philosophy there are two different views; interpretivism and positivism, which follow diverse ways of reasoning.

According to Bryman (2012) researchers that follow the interpretivist view believe that the social sciences is at variance from the natural sciences and for that reason social phenomena cannot be treated accordingly. Tuli (2010) continues on the same path by stating that the objective with this view is to appreciate values, beliefs and significances of social phenomena in order to get a deeper understanding of the reality as in total. This position can hence be seen as somewhat subjective as it is dependent on individuals and the social actors in the society (Long *et al.*, 2000). Holanda and Magnusson (2015) concluded that on the contradictory side of interpretivism, positivism takes a different opinion on knowledge. Researchers having the attitude of a positivist believe that social phenomena have to be examined utilizing the same methods as when studying natural sciences (Bryman and Bell (2011). Accordingly, positivists only accept knowledge that can be observed by our senses (Saunders *et al.*, 2012). Nevertheless Saunders *et al.* (2012) points out that one can dispute that excluding all values is close to impossible.

After the argument above the positivist view can be seen as the most appropriate one for this research. This epistemological approach was selected as information and data that is publicly available for all was examine. However, it will not be a focus to understand the actors within the purchasing activities.

3.3.2. Ontology

Ontology is the other element of research philosophy which refers to, the nature of the social reality (Holanda and Magnusson, 2015). Ontology is the study of being (Scotland, 2012). Long *et al.* (2000) states that there are two diverse opinions that can be taken when discussing the reality and how it is constructed; whichever it can be built up by strict principles that exist without the influence from social actors or it can be seen from the perspective that the individuals construct the reality. This proposing that one approach; objectivism takes an objective view upon the social reality and the other one; constructionism takes a subjective approach (Long *et al.*, 2000).

Researchers that chose an objectivist approach (Holanda and Magnusson, 2015), are poise that the reality is not a function of social actors but instead that the reality exist independent of its inhabitants (Bryman and Bell, 2011). The opposing view to objectivism is constructionism and at this point Bryman (2012) disputes that researchers adopting this view do not believe in pre-set principles and structures. Consequently, it can be suggested that this view in contrast with the previous one considers the social actors and believe that they make up the pillar stones of the society and that the structure and principles are results from the communication between individuals.

For this research, objectivist view will be considered as reality of the question ask is absolute. And to adopt an objectivist approach completely is problematic as subjectivity.

3.4. RESEARCH APPROACH

This segment comprises of the attitude espoused in this study which confers among others the hypothetical opinion on this study, the approach accepted by the chosen research design then the reason for that choice besides the research process. This section

also demonstrates the two conventional research approaches: thus quantitative and qualitative approaches, the chief variation to the discussion regarding to this methodology and what they bring about and the fundamental reasons why the quantitative method was chosen for this research. To conclude, this section has identified and seeks to give good reason for the approach that was adopted for this research.

Bryman and Bell, (2011) also published that a research approach is concerned with how theory were considers and the role theory has in a study. From Saunders *et al.*, (2012) there are two major conflicting views on this, viz. deduction and induction. The most shared view on how theory and research is connected can be found to a deductive approach (Bryman and Bell, 2011). When using this type of approach the research originates from building a theoretical framework followed by developing hypotheses and finally collecting and analyzing the data gathered (Creswell, 2002). Saunders *et al.* (2012) commented on few factors that are connected with a deductive approach; first and foremost it must be possible to measure the data and the result and making this type of approach must suitable for quantitative studies. Moreover the result should be able to be generalized to similar situations. Deduction is often used to build upon work earlier settled and when there is a vast amount of literature from where it is likely to construct a theoretical framework (Saunders *et al.*, 2012).

But, induction depend on upon starting with the establishment of data and having a question in mind for which an answer is essential and thereafter developing and building theory (Saunders *et al.*,2012). Researchers that espouse an inductive approach tend to see the individuals within the context studied as humans, subsequently placing a greater

emphasis on the behavior of them. Another difference with deduction is that induction is linked with qualitative research (Bryman and Bell, 2011). However induction is very suitable when there is a limited amount of previous literature within the research area.

3.4.1. Theoretical Considerations

An extensive discussion recently on qualitative and quantitative strategies in the social sciences concerning the comparative values in quantitative and qualitative strategies of research. The positions taken by separate academics differ significantly. In Bryman (1998) it was contended that the two approaches and suggested that both the two approaches must be joined. However, Hughes (1997) advises that solutions of that nature put too small a price on validity politics which are accompanying by method choose.

Therefore, the use of questionnaires as a research technique might be seen as a quantitative strategy, whereas interviews and observations might be thought of as qualitative techniques. In the same way, it is frequently likely that quantitative approaches draw on positivist ontologies whereas qualitative approaches are more connected by means of explanatory then acute models.

3.4.2. Quantitative Research

Quantitative Research according to Creswell (2002) will remain be the method for assembling, scrutinizing, deducing, in addition documenting the findings of the research. Despite the fact that the approach to gather data, analyzing and writing a report is quantitative approach. Qualitative research is principally in it surveying and experimentation by way of building upon usual viewpoints. The hypothesis of a

reasonable example is preserved by the quantitative research methodology (Creswell, 2002).

The following are justifications why quantitative research was employed for this research. And they are: is sometime used to answer interactive queries of variables contained by the research. Creswell (2003) states that, quantitative research employed strategies of inquiring such as experimental and surveys, and survey and collect data on schedule instruments that yield data.

3.5.RESEARCH DESIGN

Once having specified the overall philosophy and approach that will be used throughout this study, a particular research design needs to be chosen from different research designs. To initiate with the reason of a research design is to spell out the manner at which the research will be conducted and how the data will be processed (6 and Bellamy, 2012).

There are three diverse sorts of designs; exploratory descriptive and explanatory, that now will be more closely examined (Saunders *et al.*, 2012).

Exploratory research is a design that can be used when the purpose of the research is to explore a specific phenomenon and understand what is taken place (Saunders *et al.*, 2012). Sekaran (2003) carry on by debating that this particular design can be very helpful if information regarding the topic of choice is limited. Also, Hair *et al.*, (2003) furthermore argued that exploratory research is the only design that does not have as its objective to build and test hypotheses.

Explanatory research design examines and tries to determine the relationship between various variables (Saunders *et al.*, 2012). Smith (2003) discusses that the procedure of

collecting the data is often descriptive within accounting research however in order to contribute in a meaningful it is of great importance to redirect to an explanatory research design.

The last research design is ***descriptive research design*** takes the approach to inspect and obtain a clear and descriptive picture of a current situation (Williams, 2007). Moreover, Sekaran (2003) goes further and describes that this specific design is often used within organizational settings when it is of interest to understand the behavior of groups. As emphasized by Leedy and Omrod, 2010, by its nature, descriptive research relies on “self-report” data, where the participants disclose what they believe is true or applies to them.

With the above establishment, the most appropriate for this study is to adopt a descriptive research design. The motivation for this comes from that our study will be based on describing the DSS standard and how it have impacted the real estate industry and government agency when acquiring property under construction, as it can be thought of as a relatively new area of research. Furthermore, a major part of the research will be to describe and compare disclosure quality between respondents.

3.6. RESEARACH STRATEGY

A research strategy is concerned with how a researcher will work towards answering the research question(s). Saunders *et al.* (2012) list eight various strategies that can be used for this purpose; experimental, survey, as well as description investigation. These strategies are all suitable under different scenarios but survey will be considered. In the survey strategy, questionnaires are a very common design. This style of strategy can be used very largely as it can answer many types of questions, for instance what, who, where and

how many. Additionally, it is generally fairly straightforward to explain and understand this form of strategy. Though for quantitative studies this strategy is widely used (Saunders *et al.*, 2012).

3.7. DATA COLLECTION AND INSTRUMENTATION

3.7.1. Questionnaire Design

Because of the nature of this research a formal standardized questionnaire is designed. A questionnaire comprises of a group of inquiries planned to collect info as well as data for scrutiny then the findings is then used to answer the question in the research (Asika, 2002). Conferring from Hussey and Hussey (1997), questionnaire was defined as, itemize of carefully planned queries, selected after considerable assessment. The key purpose of setting out questionnaires is to test specific hypotheses that have previously been generated but Meyer *et al.*, (2004) further explained that it is used to obtain what a identified group of respondent do, think or feel. And it is an essential portion in research design phase (Oppenheim, 1992)

With the purpose of attaining research aims and objectives, a thorough questionnaire bases on the definite aims as well as objectives of the research study was established (Appendix A), is made up of two parts of which part A is made up of Seven questions and in part B is made up of three main question with Eight, Fourteen and Eight sub question respectively that are closed-ended in nature. The purpose of the questionnaire was to find out from the respondents their general perception on developing DSS underlining determinants and obstructions of DSS in acquiring property under construction. The questionnaire. Research query (questionnaire) was established in conformity with the research objectives, on the subject of the comprehensive review of

the literature. The Likert scale with score ranging view as well as perception of using DSS. Scale was adopted for the reason that the data is usually ordinal. Question one, 1=Strong disagree 2=Disagree, 3=Uncertain/Neutral, 4=Agree and 5= Strongly Agree. In question **Two and Three**, 1=Not important; 2=Less Important, 3=Moderate Important, 4=Important, 5=Very Important. These questions address issues on the obstruction to DSS in acquiring a property, the determinants and support system practice of DSS, and how they affect purchasing activity.

3.7.2. Population, Sample and Sampling Techniques

A population is an entire collection of members who share some common features. On the other hand, a sample is a sub group of the population (Sekaran, 2003). Yates (2004) also explained that the research population remain the entire members of an individual components in the research. The act or the process of picking an appropriate characteristic who is part of a population for a reason of determining limit or features of the entire population is known as sampling (Mugo-Fridah, 2008). Sampling is performed in order to reduce the entire members of individual elements to a suitable quantity that will still signify the research population. Random sampling method was used in the selection of Government agency and real estate developers. Respondents who formed the sampling units chosen are centered on obtainable facts for the purpose of this study. There is a known chance for each unit selected as survey sample. The respondents who were considered under this study were those who have been involved in the buying of property under construction. The statistics for the research were gathered from individual and real estate developers registered under the professional bodies in the Kumasi metropolis. The snowball sampling was used to select individuals that are currently acquiring

property under construction in the Kumasi metropolis. The snowball sampling was used for identifying respondents with rich information that are relevant to the study. In using this approach, the researcher contacted the most evident and easy to reach real estate developers operating in the metropolis for questionnaire administration and when the process was concluded with this estate developer he or she directed researcher to others within the catchment area of the study. This process continued till a representative sample size of Sixty Eight (68) respondents was obtained.

3.7.3. Instrument Administration

The questionnaire were self-administered by hand delivery by the researcher to personnel in the real estate firms such as technical managers, managing directors, project managers, engineers and foremen of the sampled firms to reply to the questions adequately. Some of the question were retrieved two weeks after their administration. In all, sixty Eight questionnaire were administered and fifty four (54) of them representing a respond rate of 79.41 response rate were recovered.

3.8. DATA PREPARATION AND STATISTICAL TOOLS INTENDED FOR ANALYSIS

According to Uma (2003) the process of carrying instruction, system and meaning to the quantity of gathered facts is called data analysis. Robson (2002) proved that Exploratory: where data is investigated to acquire what it informs, and confirmatory: where analysis targets to found if what is anticipated has been found, these two are the comprehensive data analysis. Proceeding to scrutinizing measurable facts Oppenheim (1992) tolerable a checklist or else exercise which ought to be followed. There is always the necessity to first identify the type of variable to aid in determining the analytical

methods to be engaged to first recognize the type of variable(s) to support in defining the analytical methods to be involved (Bryman, 2004).

In relation to the above the individual responses collected were accumulated into a huge unit and were developed and entered in a statistical packages for social sciences (SPSS) model 21 which was used to organize suitable arithmetical scrutiny of the survey findings, then was cautiously chosen primarily for the reason that of its established achievement by way of an extremely widespread software device in lieu of arithmetical scrutiny in social sciences (Robson 2002) over and above further study capacities and afterward developed by Excel 2008 for analysis. The statistical tool used to run the analysis was descriptive statistics and the relative important index (RII) was used to rank the identified variables. Demonstrations of the statistics gathered were offered by means of usual diagrams as well as tables using a Microsoft Excel.

CHAPTER FOUR

RESEARCH EVALUATION AND DISCUSSION OF FINDINGS

4.1. OVERVIEW

The chapter fully documents the investigation of this research is ground on the fundamental fact gathered as fact from the Fifty Four actors or respondents within the Kumasi metropolis. Respondents were extensively chosen from diverse individuals familiar with the use of DSS, Public institution and real estate developers in Kumasi. This chapter discussions about the perception on the usage of DSS, as well as the main determinants and barriers (drawbacks) to DSS in acquiring property under construction. It presents along with other things such the DSS's that are currently used in the purchasing activities in the Ghanaian, as well as the most common method used to bring forth these improvements. The analysis was be made up of descriptive statistics. The investigation remains whirled about the purposes of this research, that is, to conclude on the underlying constraints of trade exchanges confronting sellers and buyers in the under construction property trade, to explore the underpinning decision supporting factors determinants of sellers and buying decisions under uncompleted property trade, and to improve the conceptual decision support framework to facilitate the acquisition of property under construction.

4.2. DESCRIPTIVE ANALYSIS AND PRESENTATION OF DATA

This sub section really elaborate on the questionnaire which comprised questions, seeking basic information and profile of respondents, to provide detailed respondent characteristics. Data included: the category of respondent, the literacy and familiarity in computer usage, an experience in DSS, period at which respondents has been using DSS

in his acquisition, number of purchases they have made in the last five years, number of purchases made in the last five years using DSS, and assessment on the perception on developing PDSS.

4.2.1. Types of actors / Respondents

According to Power (2015) many people such as individuals, public institutions and real estate developer make good use of computer and in recent years to aid in personal decision making. These categories of actors or respondent should be a know how in DSS usage as Ghaffarzadeh (2015) affirmed that, these decision support system are computer base systems specific problem resolving know-how. These DSS are person-computer systems particular problem solving expertise. The know-how comprises of understanding about a specific area, thoughtful of difficulties in that area, as well as proficiency at resolving some of these difficulties.

In this research *Table 4.2.1* below lay bare the categories of respondents who participated in the research. it has been established in the table that out of fifty four (54), 40 of the respondent which representing 74.1% of respondents are real estate developers; 11 of the respondents representing 20.4% of the entire respondents were individual DSS users, 3 of the respondents are representing 5.5% of the respondents are responses from public institution. It can therefore be inferred that majority of respondents were real estate developers to the degree that this research is concerned therefore it can concluded that the majority of the respondent are real estate developers.

Table 4.2.1.1:
The category of actor/respondent

| Years of experience | Frequency | % | Cum.% | Ranking |
|----------------------------|------------------|--------------|--------------|-----------------|
| Individual user | 11 | 20.4 | 20.4 | 2 nd |
| Public Institution | 3 | 5.6 | 25.5 | 3 rd |
| real estate Developers | 40 | 74.1 | 100.0 | 1 st |
| Total | 54 | 100.0 | | |

4.2.2. Computer literacy

The objective of this question is to make out the number of respondents who are computer literate because, respondent with computer skills helps them ability to be self-sufficiently by numerous levels such as elementary, intermediary, capable of specific sorts of system presentations to empower them toward access, manage, incorporate, assess, generate as well as transfer information. Although, Ghaffarzadeh (2015) concluded that, a DSS should not be required to be computer operator to generate reports. But being computer literacy is very vital in using DSS as Holsapple and Whinston (2013) affirmed that, in end user's analysis user classified the two main classifications and they are: decision-making level and computer knowledge.

Taking an important look at *Table 4.2.2.1* below point out that 49 of the respondent surveyed for this research, which represents 90.7%, are computer literate and 5 of the respondents which represents 5.3%, are computer illiterate; For that reason it can be deduced that the computer usage has been increased Kumasi metropolis which can really contribute to the development of DSS.

Table 4.2.2.1:

Computer literacy of respondent

| Computer Literacy | Frequency | Percentage | Cumulative Percentage |
|--------------------------|------------------|-------------------|------------------------------|
| YES | 49 | 90.7 | 90.7 |
| NO | 5 | 9.3 | 100.0 |
| Total | 54 | 100.0 | |

4.2.3. The use of computer at the office

The purpose of this question is to identify respondent who are having close access to computer system in assisting them in achieving the benefit of DSS. The availability of or access to computer at the work place show how easy and familiar DSS user(s) will be used system. Even though, one can use DSS without being a computer literate, you can never practice DSS with using computer because a lot research such as Gore (1983) describe D.S.S. generally by means of an cooperativeCBS ie: computer bases system that aidin making decision using data thenreplicas to determine problems. However, a significant look at *Table 4.2.3.1* below point out that 47 of the respondent surveyed for this research, which represents 87% uses computer in the purchasing activities and the remaining 7 which represents 13% of the respondents do not use computer. The above result inferred that computer usage in Kumasi Metropolitan is quite high and it is very important because it is key component in DSS.

Tables 4.2.3.1.

Do respondent use computer at their office?

| Access to Computer | Frequency | Percentage | Cumulative Percentage |
|---------------------------|------------------|-------------------|------------------------------|
| YES | 47 | 87.0 | 87.0 |
| NO | 7 | 13.0 | 100.0 |
| Total | 54 | 100.0 | |

4.2.4. Respondent who uses DSS in under construction acquisitions

The purpose of this question is to identify respondent who has in any of their acquisition used DSS. From the *Table 4.2.4.1* below point out that 39 of the respondent surveyed for this research, which represents 77.2% uses DSS in under construction acquisitions and the remaining 15 which represents 27.8% of the respondents has never use DSS in acquiring any property under construction.

Tables 4.2.4.1.

Respondent who uses DSS in under construction acquisitions

| Access to Computer | Frequency | Percentage | Cumulative Percentage |
|---------------------------|------------------|-------------------|------------------------------|
| YES | 39 | 77.2 | 77.2 |
| NO | 15 | 27.8 | 100.0 |
| Total | 54 | 100.0 | |

4.2.5. Experience in using DSS in acquiring property under construction

Beneath lay bare the classification of experience and period various users involved in the survey, have been using DSS in acquiring property under construction. it has been confirmed in the *Table 4.2.5.1* that out of the fifty four respondents, 27 respondents representing 50.0% of respondents having between Five and Ten years' experience; 14 of the respondents representing 25.9% is less than Five years' experience in DSS usage; 6 of the entire respondents representing 11.1% are of between Eleven and Twenty years' experience; 7 of the respondents are representing 13% of the respondents did not choose and of the experienced ranges given. The seven respondents do have an experience at all. Again none of the respondent have more than twenty years' experience in DSS usage. It can therefore be concluded that half of respondents have an DSS experience between Five and Ten years to the extent that this research is concerned therefore it can

bedetermined that the most dominant DSS users in the Kumasi metropolis have between Five and Ten years' experience.

Table 4.2.5.1.

How long have you been using DSS in acquiring property under construction?

| Years of experience | Frequency | Percent | Cumulative Percent | Ranking |
|----------------------------|------------------|----------------|---------------------------|-----------------|
| Less than 5 years | 14 | 25.9 | 25.9 | 2 nd |
| 5 – 10 years | 27 | 50.0 | 75.9 | 1 st |
| 11 – 20 years | 6 | 11.1 | 87.0 | 4 th |
| Missing | 7 | 13.0 | 100.0 | 3 rd |
| Total | 54 | 100.0 | | |

4.2.6. Number of purchases made in the last five years

The frequency of purchases made by respondent in the last five is essential to the response that will be given by respondents; the more the purchases made, the more experienced decision making when they dealing with purchasing activities . This veryspecific position improve the value of info that will be resulting from this study. its verified in**Table4.2.6.1**that, out of the fifty four respondents, 23 respondents representing 42.6% of respondents have made purchases on property under construction between Eleven and Twenty within the last five; 19 of the respondents representing 35.2% made purchases between Five and Ten with the same period state above; 8 of the responses representing 14.8% of the total respondents were not able to make Five purchases within the last five years. But only few were considerable as four of the respondent who had been able to make more than twenty purchases within the last five years.

Table: 4.2.6.1

Number of purchases made in the last five years

| No. of purchases | Frequency | Percentage | Cumulative Percentage | Ranking |
|-------------------------|------------------|-------------------|------------------------------|-----------------|
| less than 5 | 8 | 14.8 | 14.8 | 3 rd |
| 5-10 | 19 | 35.2 | 50.0 | 2 nd |
| 11-20 | 23 | 42.6 | 92.6 | 1 st |
| above 20 | 4 | 7.4 | 100.0 | 4 th |
| Total | 54 | 100.0 | | |

4.2.7. Number of purchases made in the last five years using DSS

The occurrence of purchases made by respondent in the last five using DSS is necessary to the response that will be given by respondents; the more purchaser uses DSS in their purchases made, the more experienced they become in decision making using DSS in their purchasing activities . This actual particular point will improve the worth of evidence that will be resulting from the study. It has been proved in **Table 4.2.7.1** that, 25 respondents representing 46.3% of respondents have made less than five purchases on property under construction in the last five years; 18 respondents representing 33.3% responded that they were able to make purchases between Five and Ten using the DSS within the last five years; 8 respondents representing 14.8% were able to make purchases between Eleven and Twenty within the last five using the DSS; Only a respondent representing 1.9% of the respondents made purchases above twenty using the DSS. Moreover, two of the respondents representing 3.7% did not tick any of the purchases range. But from the revelation, using DSS in acquiring property under construction is not the number of purchases that the respondent makes but rather the decision to use the system.

Table: 4.2.7.1

Number of purchases made in the last five years using DSS

| No. of DSS purchases | Frequency | Percentage | Cumulative Percentage | Ranking |
|-----------------------------|------------------|-------------------|------------------------------|-----------------|
| less than 5 | 25 | 46.3 | 48.1 | 1 st |
| 5-10 | 18 | 33.3 | 79.6 | 2 nd |
| 11-20 | 8 | 14.8 | 94.4 | 3 rd |
| above 20 | 1 | 1.9 | 96.3 | 4 th |
| Missing | 2 | 3.7 | 100 | |
| Total | 54 | 100.0 | | |

4.2.8. ASSESSING THE PERCEPTION ON DEVELOPING DSS FOR PURCHASING PROPERTY

The ambition of this question is to identify With respect to contributing factor of DSS, if the individual users, Public institution and real estate developers have been able to initiate efficient and effective strategy to meet the needs of the buyers in the metropolis. Furthermore, this research question shows how purchasers conceive the benefits of Decision Support System to buyer's needs. It is therefore significant to make a distinction between the perception of DSS used in other field of life because this will have an impact and effect on the information and views given. From *Table 4.2.8.1* further down shows that, 7 of the respondents, representing 13.0% Strongly Disagree to the view that the actor(s) and users within Kumasi metropolitan need to identify the value of buying the such property with the respect to determinants of DSS; 12 of the respondents, representing 22.2% Disagree to the interpretation, 31 of the respondents, representing 57.4% were not certain to that view, 4 of the respondents, representing

7.4% Agree to the view but not a single responses from the respondent Strongly Agreed with that view.

Table 4.2.8.1

The actors/DSS users need to identify business value

| Recognition of Business value | Freq. | Percentage | Cum. Percentage | Ranking |
|--------------------------------------|--------------|-------------------|------------------------|-----------------|
| Strongly Disagree | 7 | 13.0 | 13.0 | 3 rd |
| Disagree | 12 | 22.2 | 35.2 | 2 nd |
| Uncertain/Neutral | 31 | 57.4 | 92.6 | 1 st |
| Agree | 4 | 7.4 | 100.0 | 4 th |
| Total | 54 | 100.0 | | |

4.3. PRESENTATION AND DESCRIPTIVE ANALYSIS OF DATA (DEVELOPMENT OF DECISION SUPPORT SYSTEM IN ACQUIRING PROPERTY UNDER COSTRCTION)

This section of the survey questionnaire try to find from end users the prospect to confirm by means of establishing of the five point scale if the factors recognized actually improved or drawback Decision Support Systems in acquiring property and also how important perception of Decision Support Systems (DSS) help in the delivery of buying decision.

4.3.1. Perception on Decision Support System

The view on procuring property under construction regarding to the industries being able to initiate efficient and effective strategy to meet the needs of the sellers With respect to

determinants of DSS, it has been expounded in **Table 4.3.1.1** underneath, which further explain the perception on Decision Support System in the acquisition of property under construction, attaining a Relative important index (RII) of 0.94 and a mean score 4.70, a proofing that users user requires a training in the usage of DSS and with that Skadiang (2009) suggested that strategy is articulated by organization would be able to formulate approaches as well as tactics to strengthen DSS efforts according to the outcome of the DSS evaluation. And, organization scale could be adapted accordingly to provide insights into any gaps between perception and execution, followed by a training needs analysis, and where necessary, and the gap would bridge through the relevant training.

According to Druzdzal and Flynn (2010) the key product of an communication by means of a DSS appreciates as their users are often managers who are not computer-trained, DSSs and need to be equipped with intuitive and easy-to-use interfaces. Whereas certain level of training has taken place, Stuth (1993) suggested that additional follow-up training is needed. In developed country, user training programs are too often organized for decision makers before product are completed and before the support systems are in place (Stuth, 1993).

As many researcher and authors have affirmed the importance of DSS it has been expensive, Power (2004) was not certain regard to cost relating to the developing DSS stating that even though DSS also in helps in solving problem, it might be costly. Rockville (2009) categorically stated that, the development of DSS is really costly. Furthermore the perception that the development of DSS is really costly attained a RII score of 0.893 and a mean value of 4.46 affirmed Power (2004) statement that the bleeding edge of technological development and DSS is often a costly swamp.

Gasmelseid (2010) suggested the following to be considered by DSS designer: an involved approach should be taken during DSS development with consideration of client feedback; a stakeholder and end user analysis should be performed; the end user requisite analysis exercise should be carried out before the start of the DSS development design; the output should be comparable to the managers style of the end user. The notion that the DSS Designer has the responsibility of drawing on computer based tools and techniques to provide the DS required by the manager achieved a RII score of 0.885 and a mean value of 4.43. And respondent are of the view that to develop a DSS, there is a need of identifying the potential system of users (Gasmelseid, 2010).

In addition, Among the Eight, the perception of respondent on DSS that it is not a complete answer to the issue of price structure and it makes some assumptions that purists would call naïve with respect to determinants of DSS is the least with an RII score of 0.419 and a mean of 2.09.

Table 4.3.1.1: Perception on Technological Innovation

| <i>Decision support System</i> | <i>WEIGHTING</i> | | | | | <i>Total</i> | ΣW | <i>Mean</i> | <i>RII</i> | <i>Rank</i> |
|--|------------------|----------|----------|----------|----------|--------------|------------|-------------|------------|-----------------------|
| | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> | <i>5</i> | | | | | |
| <i>1.The actors/ DSS user need to Identify business value</i> | 7 | 12 | 31 | 4 | 0 | 54 | 140 | 2.59 | 0.519 | <i>6th</i> |
| <i>2.The current DSS used is perfect and need no improvement now</i> | 17 | 33 | 1 | 2 | 1 | 54 | 99 | 1.83 | 0.471 | <i>7th</i> |
| <i>3.The Designer of has the obligation of drawing on computer based tools and techniques to make available the DS required by the manager.</i> | 0 | 0 | 3 | 25 | 26 | 54 | 239 | 4.43 | 0.885 | <i>3rd</i> |
| <i>4.The role of computers in Purchasing in the form of DS has always been to a certain degree minimal in comparison to other corporate areas</i> | 0 | 2 | 1 | 24 | 27 | 54 | 238 | 4.41 | 0.881 | <i>4th</i> |
| <i>5.The customary barriers to the use of the computer have been lowered by the employment of "user friendly" spreadsheets, databases and communication devices.</i> | 0 | 3 | 2 | 39 | 10 | 54 | 218 | 4.04 | 0.807 | <i>5th</i> |
| <i>6.PDSS is not a complete answer to the issue of price structure and it makes some assumptions that purists would call naive</i> | 12 | 33 | 3 | 4 | 2 | 54 | 113 | 2.09 | 0.419 | <i>8th</i> |
| <i>7.The development of DSS is really costly</i> | 0 | 3 | 2 | 16 | 33 | 54 | 241 | 4.46 | 0.893 | <i>2nd</i> |
| <i>8.The user requires a train in the usage of DSS</i> | 0 | 1 | 0 | 13 | 40 | 54 | 254 | 4.70 | 0.941 | <i>1st</i> |

4.4. PRESENTATION AND DESCRIPTIVE ANALYSIS FOR DETERMINANTS VARIABLES

When designing a strategy to develop Decision Support System, it is essential to identify determinants or support system practices that can affect the successful implementation of the DSS and to lodge these in the strategy. Many concepts can provide a preliminary point for changing the determinants that have been shown to be relevant for efficacious implementation. Since negative opinions by actors of DSS can affect acceptance (Rousseau et al. 2003), studying DSS users perceptions may provide useful intuitions into the determinants of successful implementation of DSS (Zaidi and Marriott, 2012). Various writers recommend the supposed expediency besides the supposed comfort of usage of Decision Support Structure is a major determinant of its use. This participation necessity distance not objective the content issues, but also the presentation and the organization of the information. This is essential to ensure that the system fulfills the three criteria that regulate its success, namely compatibility, understandability, and effectiveness.

The section elaborate the determinants in the *table 4.4.1.1* below, which further explain the determinants or support system practices in developing decision support system to acquire property under in the Kumasi Metropolis, of which increasing technical support was very important to respondent and was rank first among others. Form the *Table 4.4.1.1*, 0.91 and 4.57 was obtained as relative important index and mean score respectively. This is a proof that technical support which includes of experts that are acquainted with the ins and outs of a DSS tools. User friendly assistance for respondents having technical difficulties with DSS devices needs to be increased. Respondents believe that the technical support team is made up of individuals that are familiar with

the ins and outs of a device. With this knowledge, they are capable to troubleshoot most problems that a user experiences (Golden, 2005). Respondents allocated increased in Technical Supports as their first priority because, without that the disadvantage is that some respondent who are users are stuck when their favorite tool DSS does not work. Such problems lead to obstructions and stress for individuals, nonetheless for businesses it amounts to a loss of productivity, high overhead costs and, in some cases, even lost income (Downey, 2014). This is why tech support is important in customer service (Aspili, 2015). Also, Downey (2014) concluded that to preclude such losses and frustrations, it is imperative to have a tech support service from a reliable company that would address the difficult right away.

Endorsement by the end users or firm management was also ranked first but had a lower mean compare to the perception that DSS requires increase technical support. It obtained a Relative Important Index (RII) of 0.91 and a mean score of 4.54, this attest to the facts that the endorsement of DSS by end user or firm management enhances or enables DSS.

End user improvement of DSS put the endorsement of the structure besides keeping a DSS on the administrator who builds it (Power, 2002). The major advantage of encouraging end user DSS development is that the end user must involve in creating it (Power, 2002). Unless strong management supports and pledges for a particular technology exist, the technology will be neither accepted nor endorsed within the business (Tan and Sheps, 1998).

Technical characteristics of the DSS in acquiring property under construction ranked third. It obtained a relative important index of 0.9 and a mean score value of 4.5, this demonstrates to the facts affirmed by Power (2015) that, knowledge transfer is more

significant when we categorize and classify. Alter (1980) recognized three major features of DSS: DSS are designed explicitly to enable decision processes; DSS should support rather than make routine decision making; and DSS should be able to respond rapidly to the changing requests of decision makers. In acquiring property under construction, Power (2015) stated that, Pinpointing characteristics, distinguishable features, attributes or aspects of all DSS helps distinguish such systems from other systems Power (2015).

Organizational culture and decision process was ranked the fourth among the determinants of advancing of DSS in acquiring property. It obtained a Relative Important Index (RII) and a means score value of 0.88 and 4.41 respectively. Ardakani et al. (2011) affirmed to the fact that, the better the culture of the organization the higher the success factor in selecting the appropriate DSS. One of the main goals of organizations is to improve the creativity and innovation at the workplace so that organizational success can be relentlessly pursued. Also several studies also pointed out the importance of organizational culture in promoting creativity and innovation (Chandler et al., (2000). This clearly indicates that, before a firm considers DSS in their buying activities, there are the needs to review the existing mode of providing services and also amend any policies to enhance the implementation of any factor that can promote DSS within the firm.

Organizing more training sessions for DSS users was ranked fifth. It obtained a Relative Important Index (RII) of 0.87 and a means score value of 4.33. According to Bidgoli (2014) the user interface component is how users access the DSS, for instance when querying the data base or model base, for assistance in making decisions and the user

point of view, the boundary in most important part of a DSS must be as flexible and user friendly as possible. User friendliness is vital in DSS and can not be achieved with little training. Because most users have little computer training there is absence user friendliness in these systems.

A system of increasing computer terminals using DSS in buying property in Kumasi metropolis is ranked six. It obtained a Relative Important Index (RII) of 0.86 and a means score value of 4.24. However, computer terminals in decision support system should be considered because, managers who did not want a computer terminal in their office now regards it as a status symbol to have a personal computer(Sussman, 1998).

A computer terminal is very necessary for a direct link to the information within the entire system and is used to communicate with the DSS. Also, for a Group Decision Support System determined and involves multiple decision makers, all with their own computer terminals. But, all these terminals are interconnected within a network, for the successful implementation of a Group Decision Support System (Rothi and Chi-Chung, n.d.). A GDSS designed for a non-face-to-face environment will also require suitable terminal equipment and error deterrence and detection, for the reason that, all communication takes place through the terminal (Rothi and Chi-Chung, n.d.).

Managerial structure within business and end users in the Kumasi Metropolis as well as financial attributes of the DSS in obtaining DSS were both ranked the Eight among the determinants of Developing DSS in acquiring property under construction. They obtained a Relative Important Index (RII) of .83and a means score value of 4.17, these two determinants clearly indicates that, both are equally important to respondents with

the reason that, financial attributes of the DSS in acquiring property has been one way or the other part of business or organizational managerial structure they are very interrelated. As organizations pick up to deal with momentous transformation, study recommends a link between critical success factors and the need to utilize a more comprehensive framework by which the organization can carry on its pursuit for excellence (Chrusciel and Field, 2003).

Even though, the highlighting might be on an individual user which is on its own association coping by means of an important variation for an instance, carrying out DSS, that remains probable on the opinions which is further generally appropriate. It can also be defined as a substantial revolution for any change where there is impression on the initiative, because of certain drastic administrative alteration, Chrusciel and Field (2003) suggested that, this proposes the necessity in the direction of reflecting an action in managerial structure that will go beyond dealing with just a single significant change transformation. This revolution within managerial structure is observed as possessing a condition of monetary influence on its application, such as acquiring of DSS and Chrusciel and Field (2003) referred to as strategic in nature. Nonetheless, as DSS transmutes the structure of organization and management's decision making capabilities, such transformation has need of a cautious investigation of organizational culture and tactical orientation (Ardakani *et al.*, 2011).

The failure and success of a recommended DSS needs to be looked at by way of exposing to how well the processes change within the organization structure is accomplished (Chrusciel and Field, 2003).

| Determinants of Decision Support System | WEIGHTING | | | | | Total | ΣW | Mean | RII | Rank |
|--|-----------|---|---|----|----|-------|------------|------|------|-----------------|
| | 1 | 2 | 3 | 4 | 5 | | | | | |
| <i>1.Endorsement by the firms managements</i> | 0 | 0 | 2 | 21 | 31 | 54 | 245 | 4.54 | 0.91 | 1 st |
| <i>2.Increasing technical support</i> | 1 | 2 | 0 | 11 | 40 | 54 | 247 | 4.57 | 0.91 | 1 st |
| <i>3.Increasing computer terminals</i> | 0 | 1 | 0 | 38 | 15 | 54 | 229 | 4.24 | 0.85 | 6 th |
| <i>4.Managerial structure.</i> | 0 | 0 | 5 | 35 | 14 | 54 | 225 | 4.17 | 0.83 | 8 th |
| <i>5.Organizing more training sessions</i> | 2 | 0 | 1 | 26 | 25 | 54 | 234 | 4.33 | 0.87 | 5 th |
| <i>6.Organizational culture and decision process.</i> | 0 | 1 | 1 | 27 | 25 | 54 | 238 | 4.41 | 0.88 | 4 th |
| <i>7.Technical characteristics of the DSS in acquiring</i> | 0 | 1 | 2 | 20 | 31 | 54 | 243 | 4.5 | 0.9 | 3 rd |
| <i>8.financial attributes of the DSS in acquiring</i> | 0 | 1 | 0 | 42 | 11 | 54 | 225 | 4.17 | 0.83 | 8 th |

Table 4.4.1.1: Determinants of Decision Support System

4.5. OBSTRUCTION TO DECISION SUPPORTING SYSTEM IN ACQUIRING PROPERTY UNDER CONSTRUCTION

In the context of the research definite objectives, the study was carefully established from the major participant's obstruction to decision supporting system in acquiring property under construction within the Kumasi metropolis. It consider also that information of this kind would offer some grounds to obtained an insight into obstruction to decision supporting system in acquiring property under construction. Consecutively, the respondent were asked to rate the importance level 1, 2, 3, 4 and 5 which represent the rating Not Important, Les Important, Moderate Important, Important and Very Important respectively. From the analysis in the findings of obstructions to decision supporting system in acquiring property under construction within Kumasi metropolitan, this research was also attentive in the barriers within Ghana indirective of importance. Therefore, as creating variables RII, this study adopted one sample t-test. McCool (2013); Power, (2008); Rousseau et al. (2003); Zaidi and Marriott (2012); and Desanctis and Gallupe (1987) all established the basis of this analysis. Therefore, at the time of creating an extent of the one sample t-test variables. The one sample t-test institutes weather a sample mean is significantly deviant from hypothesized mean as noted previously. And it institutes whether a mean sample is ominously divergent away from mean as well-known.

Hypothesis:

Assumption on behalf of an individual sample test typically is set as:

$$H_o: \mu_1 = \mu$$

$$H_a: \mu_1 <, > \mu$$

However, H_0 and H_a represent the null and alternative hypothesis respectively besides μ_1 symbolizes the assumed mean for the populace. In Erford (2014) it was concluded that, to compare the population mean to the sample mean it is usual to use the one sample t-test, Pandey and Bright (2008) that the extent of independence for the test which approximates size of the sample, the test group mean, the t-value defines the gap between the two (population and the sample) mean with regard to the number of usual errors from it mean, that will indicate the power the p value as well as test, forming the probability value which the significant test is informed (Routledge, 2014).

From the *Table 4.5.1.1*. Presented, each obstruction mean consist the association standard deviation and standard error. Instead of every single obstruction H_a explains that the factors of obstruction was Not Important ($H_0: \mu = : \mu_1 = 3.5$) and the alternative hypothesis constriction influence stood dangerous ($H_a: \mu > \mu_1$), where: μ_1 represent the mean of the population. Therefore, μ_1 denote a serious assessment beyond at which constraint remain well thought-out important. 95% was rate as the significant level.

From the *Table 4.5.1.1* most obstructions possessed a normal deviance not more than one demonstrating and in respondent's interpretation of these barriers, there was agreed consistency there was agreed consistency in respondent's interpretation of these shortcomings. However, the other obstructions obtained a standard deviation greater than one

Subsequently, *Table 4.5.1.1* shows the minimal as well as the maximal value as 0.067 and 0.160 respectively and they are both closer to 0.00 which means the population is likely reproducing the sample chosen. Nevertheless, where there is a large gap between

the various mean it implies that the standard error is high besides probable to obtain a very low precision level (Barde *et al.*, 2012).

Table 4.5.1.1. One-Sample test on obstructions to DSS in acquiring property under construction

| Obstruction to DSS in acquiring property under construction. | N | Mean | Std. Deviation | Std. Error Mean |
|---|----------|-------------|-----------------------|------------------------|
| <i>Lack of awareness, agreement, or perceived self-efficacy to expectancy</i> | 54 | 4.59 | .496 | .067 |
| <i>Minimal outcome expectancy</i> | 54 | 4.07 | .610 | .083 |
| <i>Sluggishness associated with faith existing management practices</i> | 54 | 4.26 | .650 | .088 |
| <i>The cost related to hardware and software including redesigning the organization's data architecture</i> | 54 | 4.44 | .744 | .101 |
| <i>Changing data collection procedure</i> | 54 | 4.11 | 1.176 | .160 |
| <i>Upgrading system security</i> | 54 | 4.04 | .823 | .112 |
| <i>Lack of time in going through the entire protocols</i> | 54 | 4.37 | .853 | .116 |
| <i>Insufficient staff/support</i> | 54 | 4.37 | .977 | .133 |
| <i>Lack of continuity and support of PDSS professionals</i> | 54 | 4.46 | .573 | .078 |
| <i>The absence of objective definitions</i> | 54 | 4.17 | .771 | .105 |
| <i>Lack of training</i> | 54 | 4.59 | .567 | .077 |
| <i>Lack of Computer systems</i> | 54 | 4.02 | .629 | .086 |
| <i>Rigidity of the system</i> | 54 | 4.30 | .603 | .082 |
| <i>Disruption of workflow</i> | 54 | 4.19 | .646 | .088 |

Note: * standard deviation less than one

The **Table 4.5.1.2**, shows the results of the barriers or obstruction to supporting system in acquiring property under construction in contradiction of the mean score 3.5. From the Table 4.5.1.2., obtained a t value which is affirmative demonstrating better level for the precision strength. As a consequence for the obstructions, the result of the sample section remains more than that of the t-value. On the other hand, confirmation grounded on the value P. of certain obstructions remain not adequate to be able to prove that those obstructions significant. Furthermore, the confidence interval of 95%, which estimates for the difference between the mean weight and 3.5 shall be used in examining which of the obstruction is the most important in development of DSS in acquiring property under construction with Kumasi Metropolis.

Table 4.5.1.2. One-Sample Test

| Obstruction to DSS in acquiring property under construction. | Test Value = 3.5 | | | | | |
|---|-------------------------|-----------|------------------------|------------------------|--|--------------|
| | t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
| | | | | | Lower | Upper |
| <i>Lack of awareness, agreement, or perceived self-efficacy to expectancy</i> | 16.188 | 53 | .000 | 1.093 | .96 | 1.23 |
| <i>Minimal outcome efficacy</i> | 6.919 | 53 | .000 | .574 | .41 | .74 |
| <i>Sluggishness associated with faith existing management practices</i> | 8.588 | 53 | .000 | .759 | .58 | .94 |
| <i>The cost related to hardware and software including redesigning the organization's data architecture</i> | 9.329 | 53 | .000 | .944 | .74 | 1.15 |
| <i>Changing data collection procedure</i> | 3.818 | 53 | .000 | .611 | .29 | .93 |
| <i>Upgrading system security</i> | 4.793 | 53 | .000 | .537 | .31 | .76 |
| <i>Lack of time in going through the entire protocols</i> | 7.495 | 53 | .000 | .870 | .64 | 1.10 |
| <i>Insufficient staff/support</i> | 6.546 | 53 | .000 | .870 | .60 | 1.14 |
| <i>Lack of continuity and support of PDSS professionals</i> | 12.341 | 53 | .000 | .963 | .81 | 1.12 |
| <i>The absence of objective definitions</i> | 6.355 | 53 | .000 | .667 | .46 | .88 |
| <i>Lack of training</i> | 14.161 | 53 | .000 | 1.093 | .94 | 1.25 |
| <i>Lack of Computer systems</i> | 6.056 | 53 | .000 | .519 | .35 | .69 |
| <i>Rigidity of the system</i> | 9.707 | 53 | .000 | .796 | .63 | .96 |
| <i>Disruption of workflow</i> | 7.789 | 53 | .000 | .685 | .51 | .86 |

The results in **Table 4.5.1.3** below which was deduced from **Table 4.5.1.2**.

Outcome of this study affirms that, within Kumasi metropolis within Ashanti region, very important obstruction which need a critical attention is *Lack of awareness, agreement, or perceived self- efficacy to change*. The respondents or end users of DSS should be educated on the impact of using DSS and how. Lack of training was ranked second with obtaining 4.59 and 0.567 as it mean and standard deviation respectively. As cited by

Hor *et al.*, (2010) lack of training on the DSS is a barrier. The level of literacy on DSS is very low. Also, *lack of continuity and support of CDSS* (Critical Decision Support System) was rank third with a mean score and standard deviation of 4.46 and 0.573 respectively. It could be for example a result of compound causes such as financial support and the above two barriers.

The *costs related to hardware and software including redesigning the organisation data architecture* was ranked forth with mean score and standard deviation of 4.44 and 0.744 respectively. The cost of DSS can reduce the willingness of new entrants into the use of DSS which is one of the high entry barriers. From the literature, using DSS helps to improve upon the efficiency of work. Conversely, from the **Table 4.5.1.3**, it shows that *lack of time in going through the entire protocols* when using DSS. Because time and effort is spent to incorporate DSS into use the obstruction seven which obtained a mean score of 4.37 and standard deviation of 0.853 was rank fifth.

Kumasi in particular in providing education in various area such as computer technology is facing a lot of challenges such as lack of qualified staff and support to facilitate the development in computer literacy. For that reason, insufficient staff or support having

4.37 and 0.977 as its mean score and standard deviation respectively and was ranked the sixth. Decision support systems are very rigid to respond to the fluctuating and ad hoc need of market analysis that is why it required human knowledge to control the system. In DSS, there are majority legacy applications which are quite rigid and were ranked seventh.

A sluggishness associated with faith in existing management practices was ranked eighth upon obtaining a mean score of 4.26 and standard deviation 0.650. Sometimes because of the lack of faith in the current management practices and security issues associated with DSS, management felt very sluggish in employing DSS and lacks the will to sustainability in their management practices. *Disruption of workflow* obtained a mean score of 4.19 and standard deviation of 0.646 and was ranked ninth. The *absence of objective definition, changing data collection procedures* and minimal outcome expectancy were ranked tenth, eleventh and twelfth.

Upgrading system security and *lack of computer* were ranked thirteenth and fourteenth (refer to **Table 4.5.1.3**). Upgrading and updating DSS is a very important role needed in support systems and requires attention. Moreover, computer aid and information technology can help people make decision systems effective.

Table 4.5.1.3 Obstruction to developing DSS in acquiring property under construction

| Obstruction to developing DSS in acquiring property under construction in Kumasi metropolis | Ranking | Mean score | Std. Deviation | Sig. (2-tailed) |
|---|----------------|-----------------------|---------------------------|----------------------------|
| <i>Lack of awareness, agreement, or perceived self-efficacy to efficacy</i> | 1 | 4.59 | .496 | 0.000 |
| <i>Lack of training</i> | 2 | 4.59 | .567 | 0.000 |
| <i>Lack of continuity and support of PDSS professionals</i> | 3 | 4.46 | .573 | 0.000 |
| <i>The cost related to hardware and software including redesigning the organization's data architecture</i> | 4 | 4.44 | .744 | 0.000 |
| <i>Lack of time in going through the entire protocols</i> | 5 | 4.37 | .853 | 0.000 |
| <i>Insufficient staff/support</i> | 6 | 4.37 | .977 | 0.000 |
| <i>Rigidity of the system</i> | 7 | 4.30 | .603 | 0.000 |
| <i>Sluggishness associated with faith existing management practices</i> | 8 | 4.26 | .650 | 0.000 |
| <i>Disruption of workflow</i> | 9 | 4.19 | .646 | 0.000 |
| <i>The absence of objective definitions</i> | 10 | 4.17 | .771 | 0.000 |
| <i>Changing data collection procedure</i> | 11 | 4.11 | 1.176 | 0.000 |
| <i>Minimal outcome expectancy</i> | 12 | 4.07 | .610 | 0.000 |
| <i>Upgrading system security</i> | 13 | 4.04 | .823 | 0.000 |
| <i>Lack of computer</i> | 14 | 4.02 | .629 | 0.000 |

CHAPTER FIVE

RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

This thesis which for all intents and purposes investigates into Decision Support System, center of attention on development the decision support system in acquiring property under construction section into five separate nevertheless interconnected subdivisions. The first chapter or subdivision contain the key overview to the study. The second part contain the contextual deliberations, theoretical outline, then an impression of Decision support system in the Ghanaian purchasing activities. The third chapter contain approach espoused which includes, resolution to topic selected, research philosophy, the strategy and design of the research are deliberated. Correspondingly, the Fourth subdivision of this research demonstrated an empirical analysis and offered a comprehensive discussion into the finding obtained from the research survey. Finally, recommendations and conclusion to the study which encapsulates all subjectsspokentall the way through this research.

5.2 ACHIEVING THE RESEARCH OBJECTIVES

The study commenced on the principle purpose to recognize and delve into decision support system and dichotomizing the determinants and barriers to development of Decision support system in acquiring property under construction, in order to recommend policy guidelines for improvement in the buying activities. With the intention of attaining the definite goal, referring to the 4 objectives in subsection *1.3.2*.

The first objective is attained generally from review on existing works. The second as well as third were also attained from the review of other studies beside the questionnaire. The pragmatic analysis and well as the discussion attained from the findings serves as the basis to obtain the fourth objective.

5.2.1. The First Objectives:

To conduct a critical review of literature on DSS in relation to acquiring property.

Subsequently, literature on DSS in relation to acquiring construction properties and to develop a clear understanding of how the DSS operates. The review started with an overview of DSS generally and covered such topics as historical perspective, definitions, characteristics, and structure. The literature review also delved into the conceptual explanation of DSS, categories decision support system, advantages , key enablers of DSS, DSS generalprocess, short coming in the use of DSS, rate of DSS in acquiring property, top management support to DSS, Conceptual relation between acquisition of properties and DSS, acquisition processes, acquiring property under construction, how DSS is initiated in acquiring property under construction and finally concluded with an impression of determinants and obstruction to acquiring property under construction.

The review observed that, within industries across the globe, DSS is able to change. Also, some important success factor to DSS in acquiring property under construction was identifies from the broad DSS literature including endorsement by the firms managements. A comprehensive series in various difficulties could be resolved through the using DSS and decision could be support by a system connecting key skilled administrativesupporters. It was also revealed that, DSS is not always preferred and considered by real estate developer compare to the other respondents.

5.2.2 Second objective:

To determine the underlying constraints of trade exchanges confronting sellers and buyers in the under construction property trade:

With the background knowledge in the barriers (obstructions) to developing DSS in acquiring property under construction within the previous existing works, from a design questionnaire the second objective was talked on, from where fourteen hypothesis were acknowledged, where variables were identified, which respondents in Kumasi metropolis was then tested by indicating the level of importance. And because of comparatively huge quantity of reliant on hypothesis possible will be measuring very similar original consequence. One sample T test was applied for data.

5.2.3 Third objective:

To explore the underpinning decision factors/drivers/determinants of sellers and buying decisions under uncompleted property trade.

Subsequently, with the background knowledge in the success factors in DSS purchasing gained from the literature, fifty four respondent are requested to point out the scale of importance the Eight present methods figure out the related existing work within the Kumasi metropolis. Relative importance index (RII) was used and they were ranked base on it importance to the research.

5.2.4 Forth objective

To improve upon the existing conceptual decision support framework to facilitate the acquisition of uncompleted properties.

The fourth objective was set to explain approaches to deal with DSS barriers faced by end-users on the grounds of the finding of the study, thus the strategic issues. The recommendation are discussed separately in **Section 5.3**. This thesis was attained by the questionnaire identifying the perception of DSS respondents and some key DSS components. It was found that coming up with DSS conference both within or out the

metropolis, service testing, both internally and with end users , official and unofficial development process are the most important and recognized methods of developing and testing technological DSS. In conclusion, it was found that as a result of the nature of the complexity of the usage of DSS, coming up with training and development of personnel is the most ideal and employed strategy.

5.3 RECOMMENDATIONS AND GUIDING PRINCIPLES IMPLICATIONS

The fundamental aim of this study was to comprehensively study the DSS background and to recognize the DSS for purchasing activities. As a result, to recommend approaches for addressing these DSS obstruction facing the success of growth of DSS in acquisition procedures. The DSS “Principles for Excellence Presentation” depends on how the user of organization direct their system. Taking into thoughtfulness the findings of this research, the following recommendations are consequently set for formulation and performance for effective DSS involvement in Ghana as a whole.

✓ Establishment of an appropriate mix and sequencing of complementary ‘policy’ measures in order to overcome barriers to development and distribution of DSS breakthrough and ‘policy’ that support the creative and innovation aspects of organizational culture. Must be devised for the improvement on DSS in acquiring property. Provide probable and remote future strategy indications with the intention of giving a prospective reformers as well as adaptors to the environmental kindly skills the self-confidence intake on required reserves.

✓ There should be a training, workshop or conferences on DSS to update end users, members or staff of organization on any change in the system of operating. Since, DSS

is a computerize base system, any individual or an organization who is ready to go for DSS should therefore develop boundary spanning roles, recruit a computer literates and graduates that are analytically minded, interview new recruits about what could be changed in your company, pursue for different sources of research and knowledge to improve upon the previous practices

✓ Buyers of properties should be down to business: innovative activity depends greatly upon the individual and buyers leading the way in taking threats, having conversations and enabling inspiration and sustainability. This can be sustained though communication, education and encouragement.

✓ From the time the sources of DSS are widely-spread, support research and improvement in a broad collection of complementary fields. And provide incentives across all stages of the DSS phase in the firm in order to inspire others and senior management should support others to strengthen their commitment.

5.4. CONSTRAINT OF THIS STUDY

Particular area of prospective interest which requires consideration are: sample size, prejudice on the part of respondent and absence of control sets. A different interest is that individual-recording survey remains acknowledged by way of being personal moderately than unbiased. Notwithstanding, the statistics reinforced all results that the recognized serious achievement influences (determinants) are certainly current in the carrying outDSS in acquiring property under construction, attentiveness may need to be exercised in prolonging these findings to an individual which is for personal use because of the cost involved.

To conclude, the fact is the purchasing institutions lack measuring equipment for barriers

5.5 CONCLUSION

DSS as a technology is somewhat on board to development automated professions further as well as a smaller amount charge that someone could be able to development trades (Kalakota and Whinston, 1996). Computerized base systems are changing virtually all practical aspects of a contemporary business. By means of continuous development networking, DSS offers incomparable business openings obtain a better efficacies in business based profit-making actions (Wong and Sloan, 2004). Hore et al., (2004) pointed out that, certain determinations should be made to upsurge attentiveness of DSS between buyers and sellers. The approach taken is a general system approach that is computer-based. It will be beneficial to also consider the process of DSS on the more micro and macro levels within firms and on a sector basis as well.

Even though, there is some quantity of work being done to improve DSS, the buying or purchasing activities in the Kumasi Metropolis, our thoughtful and how it occurs in the purchasing industries, is far from complete. The advantages of DSS can only be recognized by fully understanding of the whole components DSS and processes that is based on knowledge acquisition, transformation, computerized base and distribution. DSS can be improved further by comprehensive work that brings together unlike theoretical viewpoints on DSS that will facilitate the improvement of context thoughtful ways of identifying and evaluating DSS.

5.6 DIRECTION FOR FUTURE RESEARCH

Based on the concerns of the respondents studied, we propose several research opportunities in the future as a result of this study:

- A system of monitoring and control of the best DSS practices and investigating how to ensure the success of the best practices.
- Additional research on DSS and the rate of development it contribute to a user's success.
- Future research should emphasis on the disparity and diversity of methods, objectives, and effects to clearly identify which approaches and methods allow for the best future results for the purchasing activities within the Kumasi metropolis and Ghana as a whole to continue developing core knowledge and varied experiences to support and continue transforming the purchasing activities.

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APPENDIX A

QUESTIONNAIRE

The researcher is conducting a study on “**Development of Decision Support System for Acquiring Properties under Construction**”. To facilitate the researcher to make the essential conclusions and recommendations for this study, it would be very much esteemed if you answer all the items in the questionnaire. Please note that information given will be treated in firmest confidence.

Thank you.

PART A. PROFILE OF RESPONDANT AND DSS USER

Directions:**Please** fill up in all the necessary information about yourself. Don't leave any item unanswered.

1. The category of actor/ respondent
☐ Individual user ☐ public institution ☐ real estate developer
2. Are you a computer literate?
☐ Yes ☐ No
3. Do you use computer at your office?
☐ Yes ☐ No
4. Have you ever use a DSS in your in any of your under construction acquisitions?
☐ Yes ☐ No
5. How long have you been using DSS in acquiring properties under construction?
☐ Less than 5 years ☐ 5-10 years ☐ 10-20 years ☐ above 20 years
6. How many purchases have you made in the last five years?
☐ Less than 5 ☐ 15-10 ☐ 10-20 ☐ Above 20
7. How many purchases have you made using DSS in the last five years?
☐ Less than 5 ☐ 15-10 ☐ 10-20 ☐ Above 20

PART B. ASSESSING THE PERCEPTION ON DEVELOPING PDSS

QUESTION 1

Direction: **Please** tick (√) in the box for each assessment item to score about the relative importance level

The following are the perception on PDSS Please use the relative importance scale [1= Strongly Disagree; 2= Disagree; 3= Uncertain; 4= Agree; 5= strongly agree] to rate them.

The perception on developing purchasing decision support system are:

| Statement | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1. The actors/ DSS user need to Identify business value | | | | | |
| 9. The current DSS used is perfect and need no improvement now | | | | | |
| 10. The DSS Designer has the responsibility of drawing on computer based tools and techniques to provide the DS required by the manager. | | | | | |
| 11. The role of computers in Purchasing in the form of DS has always been to a certain degree minimal in comparison to other corporate areas | | | | | |
| 12. The customary barriers to the use of the computer have been lowered by the employment of "user friendly" spreadsheets, databases and communication devices. | | | | | |
| 13. PDSS is not a complete answer to the issue of price structure and it makes some assumptions that purists would call naive | | | | | |
| 14. The development of DSS is really costly | | | | | |
| 15. The user requires a train in the usage of DSS | | | | | |
| Reference: (Richard, 1994) | | | | | |

QUESTION 2

The following are Barriers to DSS. Please use the relative importance scale

[1= Not important; 2= Less important; 3= Moderately Important; 4= Important; 5= Very Important] to rate them.

Direction: **Please** answer “Yes/No” to the barriers and put a tick (✓) in the box for each assessment item to score about the relative importance level

| Item | Obstructions | Do the barriers exist? | Rate how crucial they are if they exist (relative importance) | | | | |
|------|---|------------------------|--|---|---|---|---|
| | | Yes / No | Low \longrightarrow High | | | | |
| | | | 1 | 2 | 3 | 4 | 5 |
| 1 | lack of awareness, agreement, or perceived self-efficacy to change | | | | | | |
| 2 | minimal outcome expectancy | | | | | | |
| 3 | a sluggishness associated with faith in existing management practices | | | | | | |
| 4 | the costs related to hardware and software including redesigning the organization's data architecture | | | | | | |
| 5 | changing data collection procedures | | | | | | |
| 6 | upgrading system security | | | | | | |
| 7 | lack of time in going through the entire protocols | | | | | | |
| 8 | insufficient staff/support | | | | | | |
| 9 | Lack of Continuity and support of the CDSS professional | | | | | | |
| 10 | The absence of objective Definitions | | | | | | |
| 11 | Lack of training | | | | | | |
| 12 | Lack of computers | | | | | | |
| 13 | Rigidity of the system | | | | | | |
| 14 | Disruption of workflow | | | | | | |

QUESTION 3

PERCEIVE DETERMINANTS OR SUPPORT SYSTEM PRACTICES

The following are Approaches to Developing DSS. Please use the scale [1= Strongly Disagree; 2= Disagree; 3= Uncertain; 4= Agree; 5= strongly agree] to rate them.

Direction: Please tick (√) in the space provided.

| No | PERCEIVED DETERMINANTS | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|---|
| 1 | Endorsement by the firms managements | | | | | |
| 2 | Increasing technical support | | | | | |
| 3 | Increasing computer terminals | | | | | |
| 4 | Managerial structure. | | | | | |
| 5 | Organizing more training sessions | | | | | |
| 6 | Organizational culture and decision process. | | | | | |
| 7 | Technical characteristics of the DSS in acquiring | | | | | |
| 8 | financial attributes of the DSS in acquiring | | | | | |
| Reference: (NFES, 2006). And (Zaidi, 2012) | | | | | | |

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THANK YOU VERY MUCH FOR YOUR INVALUABLE CONTRIBUTION
(All information that you respond will be kept securely and will remain confidential)