

## Evaluating the Impacts of IT Usage on Organizational Performance

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### **Abstract:**

*The present study is conducted to primarily determine the relationship between IT usage and organizational performance as applied to the chosen organization, International College of Engineering and Management (ICEM). Specifically, it also investigates which of the IT use variables significantly correlates to organizational performance as well as assessing the impacts or influence of IT use on the college performance according to identified variables. In order to achieve the research objective, in the present study descriptive research design employing the questionnaire survey method. Random sampling method has been used to select 60 participants. According to the samples identified, 60 sets of questionnaires were distributed with the consent of the Dean and the Human Resource Department of the college and all the questionnaires were retrieved after two weeks. To analyze the data, statistical tools were used such as frequencies and tables, weighted mean and standard deviation, correlation, T-Test and regression analysis.*

*Key findings showed that, IT devices used in the college were mainly desktop computers and the large extent of usage was also seen on these devices. In determining the extent of agreement on the use of IT in the college, unanimous responses were generated which they categorically say "agree" on the following: the extent of agreement on IT use on organizational performance factors such as performance &*

*targets achievement, financial performance, accountability, quality service and operational efficiency as evidenced by weighted mean ratings and standard deviation. However; using the correlation and regression analysis; findings showed that there is positive relationship between these two variables: IT use and organizational performance  $r=0.637$  tested with 0.01 level of significance and with regression analysis, it revealed that, with the IT use variables namely internet applications, mobiles and devices, and data management system vis a vis organizational performance, only the data management system significantly correlates to organizational performance with  $p\text{-value} = 0.000$  while the other two variables do not have significant relationship on organizational performance. Furthermore T-test results indicated that there is no significant difference between both respondents' designation and gender on the extent of usage of IT devices/system in the College. Based on the findings, the college should emphasize on data management system considering that the regression results proves that data management system significantly impacts organizational performance. However, it is also recommended that this study shall be subjected to further studies due to its limitations of scope and other constraints as specified.*

**Key words:** IT Usage, Data Management System, Mobiles and Devices, Internet Applications, Organizational Performance.

## **1.1. INTRODUCTION**

The evolution of technological advances had been noticed since the 20<sup>th</sup> century when the use of information technology experienced worldwide recognition. Even many people realized its dynamic development in the mid-18<sup>th</sup> century which was also the advent of industrial revolution (Tom, 1991). Because of these changes, it influences various aspects of our daily lives primarily in our homes, workplaces, companies and establishments, in schools and universities and the country. Recently, the increasing revolution of technology has been experienced in global scenario and has become a global village

where the utilization of computers and communications are widely available, mobile phones, internet, satellite networks, and others that provide the latest trends in communication that are applicable in processing, storing and distributing wide array of reliable information (UNDP, 2001). Moreover, in terms of connectivity worldwide the existence of latest technologies such as optical fiber technology, radio and satellites, microchips have played a big role in electronically connecting thousands and millions of people across the globe through wireless communication. According to Evans and Wurster (1997), the unstoppable changes that happen in the business environment is the important consideration for information technology to take place.

Undeniably, the emergence of Information Technology (IT) is the product of the continuous advancement in technology that is growing for centuries in response to the dynamic changes brought about by highly competitive business environment that needed the IT for an effective operation particularly in achieving cost-effectiveness, improve efficiency and the quality delivery of products and services to its clientele (Allen & Morton, 2004). Furthermore, in relation to marketing services the use of IT can be an effective toll for marketing the products and services and establishing customer relationship management database (Werthner & Klein, 2005; UNDP, 2001).

For many companies, utilization of IT has been instrumental in developing solutions to business problems and challenges as well as trouble shooting IT related problems, developing and maintaining an effective and efficient decision-making processes, meet the requirements for quality of services and enhanced productivity, be competitive in the marketplace, and become dynamically stable organization (Attewell & Rule, 1984; Molloy & Schwenk, 1995; Boynton, 1993). Accordingly, the study of Cerere (1993) posits that, companies necessitate adoption of IT in order to improve their operations mainly the manpower management in manufacturing production and

operations. He further stated that even though IT and technologies has to evolve over period of time, its importance should be recognized in the early stages of operation considering that firms who would want to have organized, fast and timely decisions can be addressed with IT in operational aspects of the organization's existence.

### **1.1. Research Problem**

Attaining organizational performance has always been the focal point of company's operations and is always significant discussions in management literatures that usually comprise topics related to competitiveness, effectiveness, efficiency, efficacy, financial stability and financial relevance. According to Marmouse (1997), organizations build or developed its objectives primarily to achieve the best organizational performance and direct its operational processes to meet these organizational objectives. Business environmental changes contributes major influences in the way companies manage their workplaces with regards to challenges brought by rapid changes in utilization of internet, globalization, workforce diversity, as well as changing work and family roles, and the operational processes of the service sector.

Information technology also extend is usefulness in the area of human resource management where Drucker (2006) had emphasized that, in every organization people is considered the main source of income generation. However; the operational aspect of human resource was manually done in two centuries and only in the 90s where the concept of electronic human resource management was observed. This includes the strategic human resource management that has been cited in the study of Jalagat (2016) where effective use of human resource management significantly impacts organizational performance. So, the year 1990 marks the utilization of electronic human resource management that has developed the IT into a revolutionary business model that has been continually used

since 2000 until recently its applicability includes virtual learning environment and many activities thereby recognizing the importance of electronic human resource management as evidenced in the increasing use by companies on a daily basis (Pourmirza, 2006). The application of IT into human resource management can be justified into three main reasons: IT helps organizations to achieve fast, and formalized operational processes; ability of IT to manage complex problems and situations on topics related to human resource management; and the potential capability to evaluate and assess the needs of human resource management and the actual application of such human resource practices.

Example to this concept is the study conducted by Pulley and Braunstein (1984) that established a linkage between the use of IT and organizational performance that particularly investigated the information services provided by firms in relation to the IT use and findings revealed that there is association of IT use to the increased economies of scope. Related study was also conducted by Diewert and Smith (1994) that investigated the extent of IT utilization to large Canadian retail firms in the field of accounting. With the current accounting framework used by these firms, they have found out that the benefits and gains they have achieved for the large volume of production is attributed to the technological revolution that enabled them to keep track easily and at increasing speed its purchases, sales and inventory transactions using the latest computer software that had proved to reduce inventory holding costs. However; the study of Loveman (2001) revealed that there is no direct evidence that IT has improved organizational performance which is contrary to previous findings and the outcome of Weill's (1990) study that transactional IT proved to positively affects organizational performance although informational or strategic IT shows no positive impacts. Specifically, similar views from the findings of

Pourmirza (2006) who proved that IT use significantly correlates to organizational performance.

In relation to the above-mentioned discussions and findings, related study will be conducted to the chosen organization, the International College of Engineering and Management situated in the capital city of Muscat, Sultanate of Oman. The subject is one of the colleges operating in the Sultanate duly supervised by Ministry of Higher Education. As an educational institution, the utilization of IT has been introduced in classrooms and in the operational aspect of the college. However; the employees were still adamant whether the IT has already been fully utilized or not which will in turn a question that needed to be addressed institution-wide. This is observed as the employees perceived that the IT is still underutilized and the areas needed to be taken due consideration for instance in the registration processes, procurement processes, human resource management, classroom instructions and others. Questions as to whether the college has adopted an IT system that truly reflects the efficiency of its services to their clientele. So, this research is endeavored to assess the impact on the use of IT on the organization's performance.

## **1.2. Research Questions**

1.2.1. What is the profile of the respondents and their use of information technology?

1.2.2. What is the level of information technology usage at International College of Engineering and Management (ICEM)?

1.2.3. Is there relationship between information technology (IT) usage and the organizational performance at ICEM

1.2.4. Is there significant difference in the extent of usage of IT systems and devices in the College when classified according to gender?

1.2.5. Is there significant difference in the extent of usage of IT systems and devices in the College when classified according to respondents' designation?

### **1.3. Objectives of the Study**

This study attempted to determine the role of information technology on organization performance. The specific objective of this study:

1.3.1. To know the profile of the respondents and their use of information technology.

1.3.2. To determine the level of information technology usage at International College of Engineering and Management (ICEM).

1.3.3. To examine the relationship between information technology usage and the organizational performance at ICEM.

1.3.4. To investigate whether there is significant difference between respondents' designation and gender to the extent of usage of IT devices/systems in the College.

### **1.4. Research Hypotheses**

Ho1. There is no significant relationship between information technology usage and the organizational performance at ICEM.

Ho2. The information technology variables namely: Internet Applications, Mobiles and Devices, and Data Management System do not significantly relate with Organizational Performance

Ho3. There is no significant difference in the extent of usage of IT systems/devices in the College when classified according to gender.

Ho4. There is no significant difference in the extent of usage of IT systems/devices in the College when classified according to respondents' designation.

### **1.5. Significance of the Study**

Primarily, this study will aid organizations to re-examine their performance in the utilization of IT and take corrective actions

as appropriate to improve organizational performance especially in the operational aspects of the organization and achieve effective and efficient conduct of its operations. It can also revitalize and improve its utilization of human resource management practices in an electronically-based operation that would probably boost employee performance thus, organizational performance.

Secondly, the outcome of this study is essential for organizations and businesses to tap and evaluate opportunities for improvement as well as exploit the potentials for optimum utilization of database management system, tools and other resources and better manage the scarce resources by implementing an effective management controls which in turn minimize costs and gain higher returns.

Thirdly, the results of this study will provide benefits the human resource department and teams in developing and change its present system that will integrate in full capacity the IT in evaluating and appraising its human resource and build a viable policy incorporating the importance of integrating the IT that will help organizations achieve productivity, improved operational processes and an efficient operation. Lastly, many researchers around the world may gain benefits on the findings of the study by increasing its knowledge and learning experiences through utilizing this study as input to their studies and a ready references for relating it to their plan or already started projects where this result would be best used as reference. Hence, studies that provide a clear guidelines on determining the relationship between the IT use and organizational performance, this result would give a clear evidence on establishing its relationship in the light of this research.

### **1.6. Scope of the Study**

This study specifically covers the technology use and its impact to the chosen organization, the ICEM. It provide detailed



account on the use of IT in the college in terms of: data management system, performance & target achievement, accountability, and quality of service/service delivery as its measures on organizational performance

## **2. REVIEW OF RELATED LITERATURES**

### **2.1: Introduction**

Various authors and researchers have identified the importance of information technology, the use of this technology and its relevance to organizations and its relationship on organizational performance. This section provides literatures that will describe the variables that will be used in the study and the development of theoretical framework evidencing the flow of the research process.

### **2.2. Information Technology**

Generally, technology refers to a set of methods, processes, tools and techniques, machinery, equipment and skills that can be offered to people through its products and services (Rezaiyan & Taghi zadeh, 2007). Accordingly, data is a set of digital elements in form of letter or symbol that are clear and specific and can be subject to automatic processing (Shamszadeh, 2009). There are also various definitions that defines information technology.

According to Mashayekhi (2007) IT is a combination of the ability to direct operational processes and the strategies and methods in solving problems by utilizing computers. However; Tambe & Hitt (2013) defined IT as a mechanism whereby companies will endeavor through innovative ways of operating and relay information to achieve economic gains. Lal (2006) also stressed that, one of the vital activities in the recent era is on how to address the shortage in labor or manpower that is usually present in the IT industry and in both private and governmental organizations as well as the costs and

compensation that relates to this shortage (Mehri Nejad, 2002). Several forces enable the development of IT which can comprise of the microprocessor technology computers, communicative network development and the fast development of internet to name some of them (Montazer & Fathian, 2004).

According to Daft (1997), information technology refers to anything that relates to computing technology which encompasses the following: hardware, software, networking, the internet and the people who have the think tank in implementing and managing these technologies. Accordingly, it can be described as a system that emphasizes the utilization of software, hardware, database management, telecommunications and information-processing technologies that will be used to store, process and deliver the information through communication (Hacker & Saxton, 2007). Interestingly, IT has been usually utilized by managers and IT specialists to manage their business operations directly controlling its activities, the human resources and other related activities. Overseeing the general operations as being the major responsibility of managers, IT has been very important and useful for managers in allocating its needed resources in coordination with the various departments of the organization to achieve success and completion of various projects. According to Hobday (2000) information technology serve as a central key for innovation and creativity. Peansupap and Walker (2005) stressed that the use of IT is increasingly applied to organizations because these organizations believed that IT facilitates in greater extent effective communication, increase productivity, improve integration and deliver quality products and services (Bjork, 1999).

It is a proven reality that as firms grow, changes will also take place that will eventually requires information technology and increase its dependence to stay competitive and survive in a competitive marketplace (Feeny & Willcocks, 1998). As Porter & Millar (1985) reiterated, organizations

nowadays maximize the use of IT as an appropriate solution to the growing business challenges and problems in order to come up with improved productivity, product and service quality delivery, enhanced decision making processes and competitiveness to the marketplace including new markets and an attempt to globalize its operation in a global business environment. The linkage between optimum utilization of IT and organizational mission should be taken due consideration by managers and leaders by appreciating the importance and capabilities brought by IT (Hacker & Saxton, 2007).

Hence, the evolution and development of IT has become a growing concern and main features because of the large magnitude information processed on a daily basis especially to big companies particularly in the collection, preservation, processing, retrieval and analysis of information related to products and services. These complexities has led to the urgent call for development of new technologies that precisely called information technology that will cater to large databases of data or information (Davenport & Prusak, 2000). Even then that the life of IT implementation is considered shorter as expected, it can be observed that the utilization of IT is growing and developing rapidly that has given different definitions and perceptions as well as interpretations to many scholars and researchers that prompted them to come up common understanding on the concept thereby calling for precise and deep look (Hismanoglu, 2011). This gives rise to different meaning and concepts that looks at IT as an avenue for multiple definitions. Mantle (2006) has then define information technology as collection, storage, organization, processing and publishing information including sound, image, text or numbers by using computers and telecommunications (Sherif & Xing, 2006). On the other hand, Moghli (2011) also defined information technology as multimedia technologies comprising of internet, software, hardware, computer, television,

telephone, email, satellite, blogs, internetworking projects, and others.

Its role is so vital that organizations whether old or new must undertake to implement the IT in order to make wise and well-calculated decisions, reliable data or information for managers, and for well-placed strategies through technology that will meet the aims of the organizations (Abzari et al., 2007). Moreover; IT created a link between IT professionals, organizations and industries and the people at large in practically connecting them in different parts of the country and in global scenario with short period of time or faster communication and in the best possible manner. One of the major roles of technology therefore is to eliminate the physical boundaries between people and the nations around the world in a wireless way communicate in a borderless world which they usually call a global community. Also, utilization of IT in recent years helped address traffic situations, secrecy in science education, employment, cultural exchanges, lack of time, competition, and the perceived lack of physical location (Khoshsima, 2012). Information technology exist as a result of the changing business environment whereby organizations realized the importance of utilizing technology to improve its current operations. Likely, the effective use of IT in managing the organizations human resource department has caused the management to expand its roles to integrate IT in functioning its human resource management (Aliholian, 2001). The emerging trend on IT use which once started in 1970s has developed in growing trend the changing development of technologies and new paradigms on using technologies in various aspects of operations. For example, the evolution genetic engineering has urged recipients to effectively use the IT to address the problems and challenges related to the strategic issue (Abtahi et al, 2006). This is also because of the ever increasing pressures by organizations to change and innovate for the better and adopt the changing organizational

processes. Adapting with the business environmental changes is a major issue that management and managers should act upon to make sure that the organization's survival is assured as well as the growth and development in relation to the adaptation of those changes (Parsaei-Manesh, 2014). According to Jalagat (2017), change comes from different dimensions and encompasses a great significance to individuals, groups, organizations, companies and others. Information technology also contributes to the management's ability to foster effective communication and interactions to solicit timely and immediate feedback that goes through with the organizational structure of companies where this structure is vital to the organization's communication processes. It also causes speedy delivery of information from the top management down to the lowest level of the organizational structure hierarchy as well as impose virtual networks and processes and works that require enhanced technologies such as the development, distribution and management of knowledge in a cutting-age era or real-time data or information.

### **2.3. IT and Organizations.**

Business organizations that includes educational institutions have utilized for such long period of time the traditional means of operations that have contributed to their achievement of objectives however; because of competitions that arise between different firms in different industries, the influence brought about by technological advancement have changed the views of these organizations to effectively conduct its operations in the technological era where the competitions usually lies in the fast and reliable delivery of products and services at minimum costs. Needless to mention, the educational sector has been the business counterparts in the development in honing the knowledge, skills and abilities of the workforce. However; while the educational institutions are expected to deal and implement the advancement in technology, it is also but necessary to

assess themselves on how effective is the utilization of IT particularly in the administration of the institution or the college and the ability of the faculty and staff in deploying and using such technology. According to Nitterhouse (1999) the utilization of IT has been at slow pace especially in the Non-Governmental Organizations (NGO) compared to other business counterparts because of the nature of transactions that emanate from the grassroots level and those beneficiaries are coming remote places where the existence of technology is also less accessible. These hinder the development of the IT utilization which according to Hacker and Saxton (2007) as a secondary priority because more emphasis is on the achievement of organizations mission and goals and its planned activities that can be done in traditional way.

Historically, organizations, specifically Non-Governmental Organizations have been behind their corporate counterparts in adopting IT and have been relatively slow to take advantage of emerging information technology developments Nitterhouse (1999). Most of the NGOs adopt the traditional (manual) methods by using computers for word processing, spreadsheet and accounting applications, and managing a patchwork of old and new elements that often do not work well together. NGOs, unlike their corporate counterparts, face some constraints that inhibit them from adopting IT. These inhibitors include lack of budget to invest in the latest and greatest systems and IT tools, lack of sustainable capital for IT investment, an inability to pay competitive salaries to technical personnel, and inability to build the needed technical skills. Hence, the perceived lack of focus and considerations relative to IT developments have contributed some constraints in business developments and success especially in coming up with time and well-informed economic decisions.

Firms and businesses have seen the potentials for advancement in technology although such development may

produce benefits and challenges but many studies have found out that the benefits supersedes the disadvantages in the IT use and have proven to address the issues and problems relative to fast and reliable services that saves time and resources, general efficiency, flexible and product and service quality improvements (Brynjolfsson & Hitt, 2006; Henz, 2002). But realizing this may not be possible if the resistance level of the employees are high and that the management's perception of new technology in IT utilization is confronted with financial difficulties, human resources such as specialist and experts who implement and monitor the extent of application of IT, lack of knowledge and information from the agents and implementers, and less support from the top management.

#### **2.4. IT and Business Processes**

Recently, reports and information have been communicated that the development of technology through IT use have contributed significantly to the organization's structure, operations and strategies which according to Evans and Wurster (2007), the success of business as well as its operations are largely dependent on how the technologies are utilized effectively that also impacts the future implications of future economic competitiveness of companies and the society where it situated such that the development and application of such technologies determines the rate of business success. For instance, the world's utilization of the worldwide web has practically enabled organizations and firms to redesign and repackage its business proposals and designs, improve its current products and services, and apply reengineering of the present business processes. It has also encourage more interaction between companies and its clients in an easy and less hassle business transactions thus, manage the transactions efficiently and effectively in a digital and networking capabilities with a wide range of opportunities for improvement (Dennis, 2007).

Furthermore, the use of technologies currently have provided a wide range of processes and functions that are readily available in firms and the marketplace that includes but not limited to communication with counterparts and clients, business processes and functions, monitoring with external environments and its forces, and interacting with authorities primarily regulatory and government agencies. Example, the widespread application of the e-Commerce has allowed many firms to integrate IT utilization and management with their strategic plans and programs and commitment to provide easy, cost-effective and well-placed solutions to problems in a modernize means which can be called technological solutions like the use websites (Bocij, 2003). It is also evident with the evolution of the mobile and e-commerce technologies that rapidly convert many individuals, industries and organizations into a more informed entities where information is just within rich which also the main considerations for strategic planning and management (Evans & Wurster, 2007).

## **2.5. The Role and Use of IT in Organizations**

In the context on global use of IT and other technologies that may encompasses such technical infrastructure of software and hardware, telecommunications where most firms consider it as information and communications technology (ICT) or IT. The importance of IT use for many organizations have been internalized as means for optimizing firm's processes and operations and ideal solution to maximizing exchanges of valuable information and or data. According to Porter (2001), the efficient of IT not only assess the organization's strategic and tactical tools for the firm but it promotes competitiveness when appropriately employed throughout the organization as it potentially brings advantages that outweighs the costs and highlights the sustainability of its operational success in the long-run. It facilitates excellent communication or conversion of data or information into meaningful results and that is sharing



valuable information for decision makings between departments as well as from top to bottom management where dissemination of information takes place. Because of this, it will establish good linkage between the organization and its employees, clientele and partners that potentially eliminates the hindrances to an effective sharing of information and in achieving real-time information (Scott, 2001).

According to Diem (2007), IT utilization in an effective way can result to new discoveries of information and enhance creative thinking of new ideas and concepts that will result into meaningful innovative business idea. Hence, the use of IT can transform business leading to an improved operational outcomes and performance, promote company and employee competitiveness, improved brand image and market visibility, enable organizations into an effective communication and sharing of information, increase employee motivation, market and business repositioning to gain advantage over existing and potential competitors (Hagen, 2010).

## **2.6. Organization Performance**

With the advent of technological advancement it is undeniable that IT will enable organizations to make their business profitable as it has become a major tool in dealing with the many business functions, operations and development of new and innovative products and services. According to the recent trends and practices, information technology has become a major considerations for many businesses specifically in dealing with business processes and functions, operational activities, as well as developing and innovating products and services. Recently, about half of the companies operating globally were able to spend 50% of the capital expenditures and investments are focused on IT or ICT expecting that large return will be obtained from such investment. However, many organizations are still lagged behind on how the efficient and effective they invest their funds into IT investments that serve as critical

deciding factors for companies to pursue and considering the lack of experts who will manage the investments which precisely the reason why many firms fail as they fail to link IT to business opportunities and profitable endeavors using the IT-based investment.

Several authors and researchers have examined the impacts and or influence of IT use on organization's performance whether products or service and found out the positive relationship with these two main variables (Beckey, Elliot, & Procket, 1996; McNutt, & Boland, 1999). Accordingly, results also affirmed the relationship by offering recommendations that IT has indeed plays a significant role in the improvement of providing both the quality and quantity of relevant information for decision makings for managers and businesses as well as a baseline for product and service innovations (Mano, 2009). Many companies set aside their budget and resources in accordance with their goals and objectives by maximizing the use of their resources on investing into IT and have been proven through this research to perform better in their workplaces than those that set less investment on IT (McAfee & Brynjolfsson, 2008). In other words, achieving higher performance requires considerable and good IT infrastructure with good management practices in IT utilization (Mwania & Muganda, 2012).

## **2.7. IT and Organizational Performance**

The employment of IT can be recalled on the verge of its development in the 1960's and 70's were vast of organizations or businesses have utilized the technology especially in doing routinely evolving jobs such as clerical and administrative activities such as for examples accounting and bookkeeping work (Bird & Lehrman, 1993). Furthermore, IT was also used as support mechanism to address some issues on the company's internal and external environments that is expected to achieve the organizational mission and objectives and consider other

organizational system components (Bili & Raymond, 1993). But even it was utilized the extent of utilization is still subject to improvement and utilization as the application of IT is still used in simple tasks and primary activities that its use is still not reflective in addressing strategic issues and are totally lacking such as applications related to enhancing the organization's position against competitors, moving into new markets, and providing managers with better information for effective decision making. In other words, it is more applied on basic operations and that is perceived lack in utilizing the full potentials on the IT. According to Bird & Lehrman (1993), the use of technology nowadays especially the IT does not only encompasses a data processing tool but has become a competitive weapon that will be able to transform the structure of industries and as such the rapid technological revolution on the IT or ICT has made the business environment to be competitive that many companies have determined and reassess their own IT application to be consistently aligned with their strategic objectives (Galliers, 1994).

According to the data provided by OECD (2003), the emergence and rapid development of IT can be seen as its strongest evidence in the developed countries and supported by various studies it claimed that, the combination between accounting and econometric methods are utilized with the IT application that have been demonstrated as samples of companies and businesses. For instance, in the study of Gretton (2002), studying firm-level data from the Australian Business Longitudinal Survey, found positive and significant links between the use of IT and growth in both manufacturing and service industry. Relevant study also conducted by Brynjolfsson & Hitt (2003) examined the US firm-level data, findings specifically revealed that IT positively relates to employee and organizational productivity. On the other hand, Pilat & Wolfl, (2004) investigated the role of ICT-producer and key ICT-consumer sectors in determining the overall productivity

growth in OECD (Organization for Economic Co-operation and Development) countries; they found that the impact of ICT-producer sectors is most significant in Finland, Ireland, and Korea whereas ICT-consumer sectors in some countries, remarkably US and Australia, had an impressive growth in the second half of the 1990s. To validate these findings, analysis was made by Hempell (2004) based on comparable panel of Dutch and German firms particularly in the service sector and the outcome showed that, ICT or IT utilization applied on capital deepening and innovation showed that there is positive impact between It and productivity.

More findings displayed the importance of IT on businesses processes like the use of IT in The Massachusetts Institute of Technology group in 1991 where their study concluded that IT can enhance and coordinate with the many factors of the organization that contributes to the success of the business through fully utilizing the automation of information and electronically transfer those information thereby realizing the benefits it offers to the employees, the management and the organization in general (Morton, 1991; Zuboff, 1988). Many considered IT as an innovative mechanism to enable to finish the job in a creative manner however; although its potentials are huge enough but the extent of application of those benefits vary on how the companies utilize it as to whether fully, half and little utilization such that still it is subject to many researches and discussions by authors, researchers, scholars, IT experts on how it can be best managed and addressed innovation at different levels of the organization which can be done by IT.

Vast majority of authors and researchers claimed the positive correlation between IT and organizational performance as reflected by their activities with the IT basically in decision making processes (Bhattacharjee & Hirschheim, 1997; Morris & Westbrook, 1996; Porter & Millar, 1985). To demonstrate through an example, IT can be utilized to increase the efficiency

level of the various functions concerning the administration and management functions in companies to achieve effectiveness in both managerial and administrative functions. The meeting of the task efficiently and effectively is what takes in adequately applying technology in various organizational activities that can give good and relevant data or information managers for a well-informed decision makings. According to Zuboff (1988), the effective use of IT can create and maintain consistent competitive advantage and competitive edge of organizations over their competitors because it enhance better production and operation processes into variety of industries and are useful in meeting sustainable business landscape.

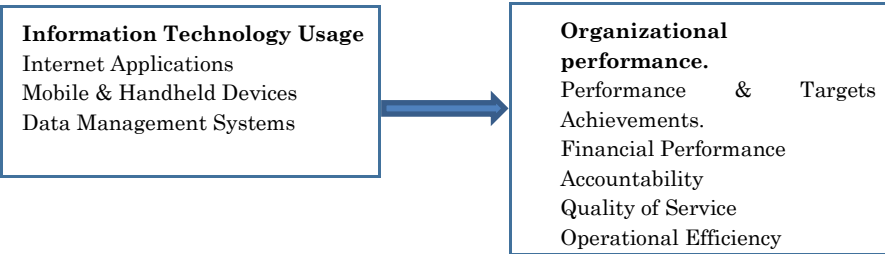
According to Mitchell & Stone (1992), direct physical measures of outputs and inputs provide an alternative metric that permit process-specific comparisons of manufacturing performance associated with alternative technological choices and organizational designs. Other techniques to measure productivity are the time-based measures for key production operations. They are commonly used by industrial engineers and production managers to plan schedules, to estimate costs, and to monitor machine utilization rates in batch manufacturing processes such as machining (Kelley, 1994). According to Panko (1991), one measure of office productivity is "output per hour". This measure can be calculated by dividing units of output by the number of hours worked to produce them.

## **2.9. Conceptual Framework**

The conceptual framework looks performance of organizations as the dependent variables with mobile and handheld devices, internet applications and data management systems being the independent variables where achievement of objectives, service delivery, accountability and operational efficiency measuring the performance of organizations as presented in Figure 1.

**Independent Variables**

**Dependent Variables**



**Figure 1. Modified from the work of Kimani (2015). Impact of Information Technology on Organizational Performance: Case of Population Services in Kenya.**

### **3. RESEARCH METHODOLOGY**

#### **3.1 Research Design**

In this study, the descriptive method of research employing the questionnaire survey as its main data gathering tool has been utilized. The purpose of using descriptive research is to describe the characteristics of variables selected in the study. According to Marsman (1999, p.66), “descriptive design is a purposive process of gathering, analyzing and tabulating data about prevailing conditions, practices, beliefs, processes, trends and cause and effect relationship and then making adequate and accurate interpretation about such data with the aid of some simple percentile and statistical method”. To apply this design in the present study, a cross-sectional study was conducted to describe the population in terms of data and characteristics where the quantitative research approach can be best applied.

#### **3.2 Sample Design**

##### **3.2.1. Population**

The population targeted for the study comprised of the academic and non-academic staff in ICEM; at the time of the study there were a total of 119 permanent employees.

### 3.2.2. Sample Size

From the total population, the sample was selected using simple random sampling method and was shown in the table 1.

**Table 1. Population and Sample Size**

| Respondents        | Population Size |             | Sample Size |             |
|--------------------|-----------------|-------------|-------------|-------------|
|                    | No.             | %           | No.         | %           |
| Designation        |                 |             |             |             |
| Academic Staff     | 32              | 27          | <b>29</b>   | 48          |
| Non-Academic Staff | 87              | 73          | <b>31</b>   | 52          |
| <b>Total</b>       | <b>119</b>      | <b>100%</b> | <b>60</b>   | <b>100%</b> |

**\*\* The population excludes the part-timers and staff under limited contracts.**

### 3.3 Data Collection

In this study, the research questionnaire was developed by the researcher and sent to the adviser for comment and approval before finally sending the questionnaires to the respondents. Upon advice, the letter of consent was sent to the administration of ICEM directed to the Dean of the College to seek permission to distribute the questionnaires related to my research and after approval, appointment was set with the respondents for distributing the questionnaires. The 60 questionnaires were distributed one day after the approval and was retrieved two weeks after. All the questionnaires were retrieved with 100% retrieval ratio.

### 3.4. The Research Instrument

This study mainly utilized survey method and mainly used the questionnaires as tool for gathering data. The questionnaire developed by Kimani (2015) was reviewed and modified by the present researcher with the help of supervisor. Final questionnaire was divided into two parts: Part A and B. The first part consists of the general information and profile of the respondents classified as designation, level of qualification, years of service in the college, and age while the second part

describes the “Use and Impact of Information Technology” that includes in details the questions on the use of IT, the IT equipment utilize in the college, the extent of usage of IT, IT usage in data management system, performance and targets achievement, financial performance, accountability, quality of service and operational efficiency.

Specifically, to assess the extent of usage of IT in the college the use of Likert scale were utilized will be shown in table 2.

**Table 2. Likert Scale to measure the extent of IT use in the college**

| Value | Limits      | Verbal Interpretation |
|-------|-------------|-----------------------|
| 5     | 4.21 - 5.00 | Very Large Extent     |
| 4     | 3.41 - 4.20 | Large Extent          |
| 3     | 2.61 - 3.40 | Neutral               |
| 2     | 1.81 - 2.60 | Little Extent         |
| 1     | 1.00 - 1.80 | Very Little Extent    |

On the other hand, to evaluate the extent on the level of agreement on the use of IT in the college, another Likert scale instrument was used which will be displayed in Table 3.

**Table 3. Likert Scale to evaluate the extent on the level of agreement on IT use in the college.**

| Value | Limits      | Verbal Interpretation  |
|-------|-------------|------------------------|
| 5     | 4.21 - 5.00 | Strongly Agree (SA)    |
| 4     | 3.41 - 4.20 | Agree (A)              |
| 3     | 2.61 - 3.40 | Neutral (N)            |
| 2     | 1.81 - 2.60 | Disagree (D)           |
| 1     | 1.00 - 1.80 | Strongly Disagree (SD) |

The use of Likert scale is endeavored in this study in order to assess the use and the impact of IT in the college’s operation and to measure how far the college is utilizing IT to effectively manage its operations.



### **3.5. Data Analysis**

Based on the questionnaires, the data has been analyzed and tabulated. Main objective of this research is to determine the relationship between the IT \_usage and organizational performance. The data obtained from the questionnaires has been imported to the computer program called the statistical package for social sciences (SPSS) version 21 to calculate frequencies and averages, standard deviation, weighted mean, Independent Sample t-test, Pearson correlation, and regression analysis. Specifically, frequencies and distribution were utilized to analyze the profile and personal information of the respondents while weighted mean and standard deviation were used to analyze part B which is the assess the extent of information technology usage. Independent Sample T-Test was used to test the significant difference respondents' designation and gender to the extent of usage of IT devices/systems in the College. However; to determine the relationship between IT usage and organizational performance, Pearson Correlation was used while regression analysis was used to find the individual predictors of organizational performance. The statistics used is tested at 0.05 and 0.01 level of significance.

### **3.6. Research Validity and Reliability**

To ensure the content validity of this research instrument, pre-testing was conducted into 20 employees in Al-Zahra who are not the actual respondents of this study in order to check the content as to the structure and layout, grammar and spelling and to determine whether the information and the questions in the content are free of biases. To test whether it is reliable, the Cronbach Alpha was employed to test how reliable are the questions and the results showed 0.680 which is categorically reliable. Hence, the instruments used are assured to be valid and reliable.

#### 4. DATA ANALYSIS AND INTERPRETATION

This section presents the results obtained from the statistical tests used to analyze the data.

##### 4.1. Designation of the Respondents

**Table 4. Respondents' Designation**

|       | Frequency    | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|---------|---------------|--------------------|
| Valid | Academic     | 29      | 48.3          | 48.3               |
|       | Non-Academic | 31      | 51.7          | 100.0              |
|       | Total        | 60      | 100.0         | 100.0              |

Table 4 shows the frequencies distribution of the respondents according to the designation. The figure shows that non-academic staff accounts for 31 or 51.7% of the total sample while academic staffs corresponds to 29 or 48.3%. This result may not be the same if the total population of the college is taken as sample however; it is safe to assume that the distribution of the respondents according to designation is almost equal.

##### 4.2. Highest Level of Qualification of the Respondents

**Table 5. Respondents' Level of Qualification**

|       | Frequency           | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------|---------|---------------|--------------------|
| Valid | Secondary           | 8       | 13.3          | 13.3               |
|       | Certificate/Diploma | 10      | 16.7          | 30.0               |
|       | Bachelor            | 13      | 21.7          | 51.7               |
|       | Masters             | 25      | 41.7          | 93.3               |
|       | Doctorate           | 4       | 6.7           | 100.0              |
|       | Total               | 60      | 100.0         | 100.0              |

When sample was classified according to the respondents' level of qualification, table 5 shows that a considerable number of

respondents have acquired master's degree with numerical number of 25 or 41.7% while those who have acquired bachelors reach to 13 or 21.7%. About 10 out of the 60 respondents have finished certificate/diploma or 16.7% and those secondary level educated with 13.3%. But last in the list is the sample of those staff who have finished the Doctorate degree only 6.7% or equivalent to 4 staffs.

### 4.3. Years of Service of the Respondents

**Table 6. Respondents' service in years.**

|                         | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------------|-----------|---------|---------------|--------------------|
| Valid Less than 5 years | 18        | 30.0    | 30.0          | 30.0               |
| 5-10 years              | 21        | 35.0    | 35.0          | 65.0               |
| 11-15 years             | 21        | 35.0    | 35.0          | 100.0              |
| Total                   | 60        | 100.0   | 100.0         |                    |

Table 6 shows the number of years in service of the respondents and findings revealed that most of the respondents are between 5-10 years and 11-15 years respectively with a combined ratio of 70% or equivalent to 70 respondents distributed equally while 18 out of the 60 respondents are below 5 years of experience. However, none of the respondents have experience of 16-20 and more than 20 years respectively.

### 4.4. Gender of the Respondents

**Table 7. Respondents' Gender**

|            | Frequency | Percent | Valid Percent | Cumulative Percent |
|------------|-----------|---------|---------------|--------------------|
| Valid Male | 39        | 65.0    | 65.0          | 65.0               |
| Female     | 21        | 35.0    | 35.0          | 100.0              |
| Total      | 60        | 100.0   | 100.0         |                    |

It can be clearly gleaned from table 7 that, the workforce at ICEM are predominantly male with 65% rating or 39 out of 60

respondents. While the female staff accounted to only 35% or 21 out of 60 respondents. Considering that the college is also predominantly a male student population, the teachers who are involved in the workforce are mostly male and the courses offered are specialized in engineering and management where many of the teaching staffs are also male based on the nature of the course as well as the job which is fire safety.

#### 4.5. Age of the Respondents

**Table 8. Respondents' Age.**

|                      | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|-----------|---------|---------------|--------------------|
| Valid Below 20 years | 10        | 16.7    | 16.7          | 16.7               |
| 21-30 years          | 16        | 26.7    | 26.7          | 43.3               |
| 31-40 years          | 18        | 30.0    | 30.0          | 73.3               |
| 41-50 years          | 9         | 15.0    | 15.0          | 88.3               |
| Above 50 years       | 7         | 11.7    | 11.7          | 100.0              |
| Total                | 60        | 100.0   | 100.0         |                    |

Table 8 depicts the age of the respondents. It clearly shows that most of the respondents are in middle-ages with 31-40 years old accounting for 18 out of 60 or 30.0%. This is followed younger blood of staff with age ranging from 21-30 years old with 16 respondents or 26.7; about 15.0% or 9 respondents are in the age bracket 41-50; and 7 or 11.7% employees who have aged more than 50 years old where it can be presumed that a portion of this number are those in the teaching positions who are still in position to teach.

#### 4.6. What IT device/s do you have at your disposal to enable you to perform your duty?

**Table 9. IT devices used in the workplace.**

|                  | Frequency | Percent | Valid Percent | Cumulative Percent |
|------------------|-----------|---------|---------------|--------------------|
| Mobile Phone     | 8         | 13.3    | 13.3          | 13.3               |
| Desktop Computer | 46        | 76.7    | 76.7          | 90.0               |
| Valid Laptop     | 4         | 6.7     | 6.7           | 96.7               |
| IPad or Tablet   | 2         | 3.3     | 3.3           | 100.0              |
| Total            | 60        | 100.0   | 100.0         |                    |

With reference to Table 9 showing the usability of the IT devices in the college, it can be gleaned that most of the respondents with 46 out of 60 respondents have utilized the desktop computers in their offices or 76.7%. This might imply that, the college is still keen on using desktop which is still conventional way of using the technology. A percentage of 13.3% of the total respondents or 8 out 60 respondents who makes use of mobile phone as devices in the workplace. On the other hand, very few of the staffs have utilized laptops in their offices with only 6.7% or 4 out of 60 respondents and it may also indicate that, these respondents upon their option may bring with them personal laptops as an alternative choices for processing information or data. Lastly, the use of Ipad/Tablet is seldom used in the college and besides no other tools than those previously mentioned had been specifically identified.

#### 4.7. Kindly indicate the extent of usage of the following systems/devices in the College.

**Table 10. Extent on the use of IT systems/devices in the College**

| Systems/Devices                        | Weighted Mean | Interpretation |
|--|---------------|----------------|
| Mobile devices and tablets             | 3.52          | Large Extent   |
| Laptops and Desktops                   | 3.85          | Large Extent   |
| The Intranet                           | 3.32          | Neutral        |
| CRM (Customer Relationship Management) | 2.92          | Neutral        |

|   |             |                |
|---|-------------|----------------|
| HR System                               | 2.93        | Neutral        |
| Accounting Software and Programs        | 3.00        | Neutral        |
| Office 365 (email/OneDrive/Yammer, etc. | 3.07        | Neutral        |
| <b>Total</b>                            | <b>3.23</b> | <b>Neutral</b> |

Table 10 displays the extent of usage of IT systems and devices in the college. Results revealed that large extent of usage which is the highest can be observed with the laptops and desktops with mean rating of 3.85 and followed by also large extent shown with the use of mobile devices and tablets with 3.52 weighted mean rating. These results are consistent with Table 9 where desktops are most commonly used in the College. All other responses are neutral which might indicate that these systems are still not clear to the respondents and the management may have not utilized these tools at its full extent.

**Table 11. Respondents’ Perception on the Usage of IT Data Management System in ICEM.**

|  | N  | Mean | Std. Deviation |
|--|----|------|----------------|
| 1. The College use of IT data management system has improved their services towards stakeholders.  | 60 | 3.88 | .555           |
| 2. The College use of IT data management system facilitates fast collection of data and information.   | 60 | 3.98 | .676           |
| 3. Using IT data management system helps the management achieve timely and accurate decisions from top management down to department level.          | 60 | 4.00 | .759           |
| 4. Using IT data management system enable managers and heads to decide quickly and assured of reliable information.                                  | 60 | 4.08 | .696           |
| 5. The use of IT data management system enhances better knowledge and understanding on how the organization operates and arrives at right decisions. | 60 | 3.98 | .701           |
| 6. The use of IT data management system helps improve the operational efficiency of the administrative and teaching staffs in the College.           | 60 | 4.10 | .656           |
| 7. Using IT data management system has aided the management in updating its records and organizing large volume of files.                            | 60 | 4.12 | .691           |
| Valid N (listwise)   | 60 |      |                |

**1=SD (1.00-1.80); 2=D (1.81-2.60); 3=N (2.61-3.40); 4=A (3.41-4.20); SA (4.21-5.00)**

Table 11 shows the perception on the use of IT data management system in ICEM. Specifically, it shows that IT data management system has helped the management in updating its records and organizing large volume of data files as evidenced by mean rating of 4.12. Secondly, IT data management system has aided the administrative and teaching staffs to improve its efficiency in the conduct of its operations with 4.10 mean rating which may indicate that IT should be fully utilized in order to maximize individual and organizational efficiency in the work. The more emphasis on data management system will show favorable results. IT has also enable managers and heads to access reliable information quickly with mean rating of 4.08 which further indicates that with IT data management system well-informed decisions will timely be achieved which further improves the decision-making processes of the college. The use of IT proves to be useful to the management in meeting its requirements on timely dissemination of information to different stakeholders.

Moreover; IT has enabled the management with its managers and owners to provide up-to-date and accurate decisions that covers data or information from the top-to-bottom communication where the employees in the lower ranks can access those information and be more encouraged to participate in the activities of the organization and with 4.0 mean rating, it can be interpreted that there is agreement by the respondents with regards to the ability of the management in the use of IT to aid managers in achieving time and accurate management decisions. Both responses on the other hand suggest that, IT can both facilitates fast collection of data and information and enhances better knowledge and understanding on how the organization operates with both achieved 3.98 ratings that could be interpreted that, IT has overpassed the used to be manual operation tremendously and has provided a better way of doing operations as the employees become aware and understand how the operations can be done with efficiency and

operates with better chances of arriving at right decisions and easy to track with if there are deficiencies and troubles while in operation. Lastly, the IT data management system has contributed to the delivery of effective services towards stakeholders such as students, suppliers, government offices, management, etc. as shown with each mean rating of 3.88.

**Table 12. Extent of agreement of IT usage on performance & targets achievement in ICEM.**

|  | N  | Mean | Std. Deviation |
|--|----|------|----------------|
| 1. The use of IT has helped the management to establish effective target monitoring and reporting. | 60 | 4.00 | .638           |
| 2. The use of IT facilitates planning and incorporate quantitative targets.                        | 60 | 3.85 | .685           |
| 3. The use of IT facilitates timely gathering of data and the analysis of the gathered data.       | 60 | 4.03 | .712           |
| 4. Using IT has helped improve employee productivity and flexibility.                              | 60 | 3.95 | .746           |
| 5. Using IT achieves departmental goals and objectives of effective communication of information.  | 60 | 3.95 | .746           |
| Valid N (listwise)   | 60 |      |                |

1=SD (1.00-1.80); 2=D (1.81-2.60); 3=N (2.61-3.40); 4=A (3.41-4.20); SA (4.21-5.00)

The Table 12 describes the extent of agreement on IT use on performance and target achievement in ICEM. Individually, it shows that IT use facilitates timely gathering of data and the analysis of the gathered data on the top spots with mean rating of 4.03. This might mean that, the functions, processes and decision makings have been made on time with the use of information technology thereby achieving a well-informed decisions timely for the top management to make actions from those decisions. The use of It has also been proven to help management in establishing an effective target monitoring and reporting having a mean rating 4.00 which can be interpreted that, reliable and fast processing of information will lessen the waiting period for the decision makers to decide and in reviewing and monitoring the jobs to be done hence it aids the



management to be organized with the work as well as monitor the reports from time to time which many may have forgotten to recall and take necessary actions. Responses also shows that, IT has both aided the management in improving the employee and company productivity, flexibility and helped achieves departmental goals and objectives to effectively communicate information respectively with each shared 3.95 mean rating. This might indicates that employees become more productive with the IT use in terms of efficiency and effectiveness in completing their work tasks with ease, quality and reliability since the technology has enabled them to perform corrective measures with the work done through for example application of systems and programs and which in turn improve company productivity.

**Table 13. Extent of agreement of IT usage on financial performance in ICEM.**

|  | N  | Mean | Std. Deviation |
|--|----|------|----------------|
| 1. Utilizing IT will reduce expenditures such as salary cost of hiring more employees.   | 60 | 3.82 | .596           |
| 2. The use of IT helped the management developed profiles of prospective clients and measure sales, profitability as well as customer retention. | 60 | 3.88 | .640           |
| 3. Investing in IT will improve the business processes and innovative features of service offerings of the College.                              | 60 | 3.98 | .624           |
| 4. The use of IT allow access to as many potential students as possible for more income opportunities.   | 60 | 3.93 | .710           |
| 5. Utilizing IT will increase sales and profitability by delivering excellent service to clientele.  | 60 | 4.05 | .534           |
| Valid N (listwise)   | 60 |      |                |

1=SD (1.00-1.80); 2=D (1.81-2.60); 3=N (2.61-3.40); 4=A (3.41-4.20); SA (4.21-5.00)

Table 13 describes the extent of agreement on IT use on financial performance in ICEM. In general, the results displayed that the respondents unanimously agreed on the questions related to the IT usage and its positive impacts on financial performance as evidenced by 3.93 ratings which is in

the range of 3.41-4.20 indicating “Agree” ratings which is also consistent with the individual ratings. Top among the list expresses that IT use increases sales and profitability through provision of excellent service to the clientele with 4.05 mean ratings which can be interpreted that when the management will be able to utilize IT effectively and efficiently will result to service quality and excellence in both its operations and in the teaching field that will in turn increase its sales with more expected student registrations and increase its profits as well. This result is consistent with the study of Harris and Katz (1991) and Bender (1986) whose findings showed that IT use positively correlates the several performance measures and ratios even though its relationship is considered weak. This is followed by the finding that, investing in IT will improve the business processes and innovative features of service offerings of the College having 3.98 weighted mean rating. Thirdly, responses show that IT can help the management provide access to as many potential students as possible for more income opportunities accounting for 3.93 mean rating which can be interpreted that the college may need to upgrade its present system to encourage more potential students and can accommodate more with the IT use through its database management system.

Furthermore, 3.88 mean rating revealed that the respondents expressed its agreement on the use of IT in helping the management developed profiles of prospective clients and measure sales, profitability as well as customer retention.

**Table 14. Extent of agreement of IT usage on accountability in ICEM.**

|   | N  | Mean | Std. Deviation |
|---|----|------|----------------|
| 1. The use of IT helped the management in evaluating the budget versus actual on income and expenditures.   | 60 | 4.02 | .701           |
| 2. The use of IT has aided the management to better serve the students and other outside parties.   | 60 | 4.07 | .634           |
| 3. The use of IT enables the management to develop formal communication and procedures to be followed by employees.   | 60 | 4.02 | .701           |
| 4. Using IT data management system has established a permanent file of systems and procedures to remind the employees of their responsibilities and accountabilities. | 60 | 4.03 | .758           |
| Valid N (listwise)  | 60 |      |                |

1=SD (1.00-1.80); 2=D (1.81-2.60); 3=N (2.61-3.40); 4=A (3.41-4.20); SA (4.21-5.00)

As shown in Table 14, the feedback from the 60 respondents showed that, on the average they all responded with “agree” responses which might mean that they agree that IT use promotes accountability as applied in the chosen organization, ICEM. The usefulness of IT to establish accountability by the management and their workforce is favorable. In details, with the mean rating of 4.02, it is the top priority according to the respondents by recognizing that, IT enables the management to develop formal communication and procedures to be followed by employees. Although the college still uses the paper printed communications through memorandums and letters, they alternately use emails and other electronic means in communicating its day to day instructions and information on daily basis where most employees believed that it is easier, faster and can be acknowledge immediately rather than the printed paper communications. On the other hand, IT has also aided the management in evaluating its budget against actual budgets and expenditures with the use of its accounting software and programs being a product of IT. The package program has helped them in greater extent in analyzing financial statements as well as its income and expenditures

budgets as evidenced with the 4.05 mean rating which can be interpreted as a good indication of the use of IT in the college.

Thirdly, IT has in fact helped the college in providing better service in the college by actively responding to student complaints and queries and settle it with agreement with not only the students but the other stakeholders. Because of IT utilization, the service provided by the college and its management exceeded its expectations resulting to satisfaction to the stakeholders and most especially the students. Finally, both responses based on the questions provided the same results with both resulting 4.07 respectively recognizing that, IT has aided the management to better serve the students and other outside parties and has established a permanent file of systems and procedures to remind the employees of their responsibilities and accountabilities.

**Table 15. Extent of agreement of IT usage on quality service in ICEM.**

|  | N  | Mean | Std. Deviation |
|--|----|------|----------------|
| 1. Using IT improves the quality of service delivery to students and other beneficiaries.  | 60 | 3.98 | .596           |
| 2. Using IT has aided the management to communicate effectively to its beneficiaries and partners in service delivery.   | 60 | 3.97 | .581           |
| 3. Using IT has facilitated the improvement of management plans and in the implementation of projects and activities in dealing with the students and other parties. | 60 | 3.83 | .642           |
| 4. Using IT in the area of social media helped the college tapped its beneficiaries and collaborate with partners.   | 60 | 3.90 | .602           |
| Valid N (listwise)   | 60 |      |                |

1=SD (1.00-1.80); 2=D (1.81-2.60); 3=N (2.61-3.40); 4=A (3.41-4.20); SA (4.21-5.00)

Data in Table 15 displays the extent of agreement on IT use in quality service in ICEM. The outcome revealed that in general, the respondents unanimously to respond with “agree” feedback affirming indeed that IT impacts quality service in the case of ICEM. Individually, it also depicts that using IT improves the

quality of service delivery to students and other beneficiaries with 3.98 rating and followed by responses that with 3.97, using IT has aided the management to communicate effectively to its beneficiaries and partners in service delivery. It may imply that the management of ICEM have benefited with the use of IT although not experienced sophistication on IT use and has proven that IT improves their quality provision of service to the students and other operational processes and communicate to their stakeholders with ease and less problems. Also, IT enable the management to communicate to the students, partners and counterparts and its suppliers with the use of IT through social networks which in many cases communication through WhatsApp, messenger, mobile services and others. Further, with the mean rating of 3.90, it is agreeable by the respondents that IT has helped greatly in communication the management through its stakeholders with less costs but effective ways of sharing the college information and updates. Last but not the least, IT has facilitated the improvement of management plans and in the implementation of projects and activities in dealing with the students and other parties having mean rating of 3.83 which might mean that IT has become useful in the delivery class instructions and projects whether its student works or collaborative works between the teachers and the students.

**Table 16. Extent of agreement of IT usage on operational efficiency in ICEM.**

|  | N  | Mean | Std. Deviation |
|--|----|------|----------------|
| 1. Using IT helped the management to deliver the service efficiently and effectively.                          | 60 | 3.92 | .561           |
| 2. The use of IT helped the management provide accurate financial data.  | 60 | 3.88 | .555           |
| 3. Utilizing IT has enabled the management to finish business transactions with speed and accuracy.            | 60 | 3.95 | .565           |
| 4. The management has benefited the use of IT by effectively utilizing their IT equipment for quality service. | 60 | 3.92 | .591           |
| Valid N (listwise)   | 60 |      |                |

**1=SD (1.00-1.80); 2=D (1.81-2.60); 3=N (2.61-3.40); 4=A (3.41-4.20); SA (4.21-5.00)**

From Table 16 shows the extent of agreement on IT use on operational efficiency in ICEM. Totally, the average rating of 3.92 revealed that the extent of IT impacts or promotes operational performance that also signifies the respondents' feedback which is "Agree". Preferential attention was taken on the question "utilizing IT has enabled the management to finish business transactions with speed and accuracy" having mean rating of 3.95 classified as an "agree" response which can be implied that the accuracy and speed of transactions especially in the administration department is manageable and controllable with the use of IT and transactions or processes that use to be finished in longer period can normally be done in shorter period. This is also applicable in the academic department where the teaching staffs begin to find the long-term benefits through the use of IT in managing class instructions, marking and other related activities. This is followed by the response that "using IT helped the management to deliver the service efficiently and effectively" with 3.92 rating which the college management has proven of its importance in delivering efficient and effective service delivery. IT has also benefited the management by "by effectively utilizing their IT equipment for quality service" with its 3.92 rating showing that more IT resources and using it effectively will produce good outcomes and productivity. Even though the IT equipment use in the college may not be as competitive with the rivals but the IT utilization has been starting to be sophisticated like the use of programs, systems and other software that can improve their processes. Last in the order emphasized that "the use of IT helped the management provide accurate financial data or a mean rating of 3.88. Systems used in sales data generation, payments system and financial statements are managed by the college with its IT accounting system.

**Table 17. Summary of tables on the extent of agreement on IT use on organizational performance.**

| IT Use Variables  | Weighted Mean | Verbal Interpretation |
|---|---------------|-----------------------|
| Extent of agreement on IT use on performance & targets achievement in ICEM. | 3.96          | Agree                 |
| Extent of agreement on IT use on financial performance in ICEM.             | 3.93          | Agree                 |
| Extent of agreement on IT use on accountability in ICEM.                    | 4.04          | Agree                 |
| Extent of agreement on IT use on quality service in ICEM.                   | 3.92          | Agree                 |
| Extent of agreement on IT use on operational efficiency in ICEM.            | 3.92          | Agree                 |

1=SD (1.00-1.80); 2=D (1.81-2.60); 3=N (2.61-3.40); 4=A (3.41-4.20); SA (4.21-5.00)

In summary, the table above depicts that the extent of agreement on IT use on organizational performance and individually it shows an “agree” response which might mean that IT use influences or impacts favorably on organizational performance in different performance outcomes such as performance and target achievements; financial performance; accountability; quality service and operational efficiency. So, it is undeniable that utilizing IT plays significant role in achieving organizational performance based on the feedback from the respondents in this study and as applied to the college, ICEM.

#### **4.8. Correlation, Regression and T-Test**

Correlation analysis using the Pearson correlation was utilized in order to determine the relationship between IT use and organizational performance. The linear dependence between these two variables are tested at 0.01 level of significance. Accordingly, the results from the analysis can be broken down into three outcomes: 1 for positive total correlation, 0 for no correlation and -1 for total negative correlation. Moreover, using the downhill linear relationship of correlation coefficient

as cited in the study of Jalagat (2017) suggests that, 0 means no relationship;.30 is considered weak correlation; 0.50 is moderate; and 0.70 is strong correlation. In application, the results of analysis can be drawn from the tabular presentation in Table 18.

**Table 18. Correlation between IT Usage and Organizational Performance.**

|                                    |                     | Extent of Use of IT in the College | Organizational Performance |
|------------------------------------|---------------------|------------------------------------|----------------------------|
| Extent of Use of IT in the College | Pearson Correlation | 1                                  | .673**                     |
|                                    | Sig. (2-tailed)     |                                    | .000                       |
|                                    | N                   | 60                                 | 60                         |
| Organizational Performance         | Pearson Correlation | .673**                             | 1                          |
|                                    | Sig. (2-tailed)     | .000                               |                            |
|                                    | N                   | 60                                 | 60                         |

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

Table 18 shows result obtained by using the Pearson Correlation coefficient to determine the relationship between the IT use and Organizational performance. It clearly revealed that there is positive relationship between the College’s IT use and Organizational Performance with  $r=0.673$  tested at 0.01 level of significance. This can be interpreted that the more the college utilize its IT would positively contributed to organizational success. This result is consistent with the many studies where their findings show IT use is significantly correlated with organizational performance (Beckey, Pulley and Braunstein; 1984; Elliot, & Procket, 1996; McNutt, & Boland, 1999; Hempell, 2004; Pourmirza, 2006). Based also on the assessment on the extent of use on organizational performance as summarized in Table 17, it supports the hypothesis that there is significant relationship between IT use and organizational performance. Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted that there is relationship between IT use and organizational performance as



evidenced by the results of statistical computation. However, considering the downhill linear correlation of coefficient, it shows that the extent of relationship is moderate which might mean that the results may not be conclusive and thus, are not perfectly correlated.

On the other hand, regression analysis was utilized in order to determine the significant relationship between IT use as expressed in three variables namely: Internet applications; mobiles and devices; and data management system vis a vis the organizational performance. The objective is to evaluate individually which of the independent variables significant relates to organizational performance although in general there is significant relationship between IT use and organizational performance from correlation analysis. The detailed presentation can be seen in Table 19 in the succeeding section as shown.

**Table 19. Relationship between IT Usage: Internet Applications, Mobile Devices, Data Management System and Organizational Performance.**

**Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics |          |     |     |               |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|
|       |                   |          |                   |                            | R Square Change   | F Change | df1 | df2 | Sig. F Change |
| 1     | .589 <sup>a</sup> | .346     | .311              | .40019                     | .346              | 9.895    | 3   | 56  | .000          |

a. Predictors: (Constant), Data Management System, Internet Applications, Mobile & Devices

**ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | df | Mean Square | F     | Sig.              |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 1     | Regression | 4.754          | 3  | 1.585       | 9.895 | .000 <sup>b</sup> |
|       | Residual   | 8.969          | 56 | .160        |       |                   |
|       | Total      | 13.723         | 59 |             |       |                   |

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), Data Management System, Internet Applications, Mobile & Devices

**Coefficients<sup>a</sup>**

| Model                  | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. |
|------------------------|-----------------------------|------------|---------------------------|-------|------|
|                        | B                           | Std. Error | Beta                      |       |      |
| (Constant)             | 1.938                       | .391       |                           | 4.950 | .000 |
| Internet Applications  | .092                        | .072       | .154                      | 1.275 | .208 |
| Mobile & Devices       | .142                        | .071       | .247                      | 1.991 | .051 |
| Data Management System | .301                        | .108       | .346                      | 2.794 | .007 |

a. Dependent Variable: Organizational Performance

Table 19 reveals the computed regression analysis to determine specifically which of the IT Use variables that significantly relates to organizational performance. Firstly, the model summary indicates that, the  $R^2 = 0.346$  shows that 34.6% of the variation of independent variable which is the organizational performance is caused by the independent variables namely the internet applications, mobile and devices, and the data management system while 65.4% cannot be explained by these variables and with only 0.40019 margin of error. However; the ANOVA regression results indicate the model use is fit and appropriate with  $F=9.895$  and with 0.000 significance which further means that the results provided in this statistical test is reliable. With regards to determining the relationship between the independent and dependent variables, its depicts that with the IT use variables, only the data management system significantly correlates with organizational performance with p-value  $0.007 < .01$  level of significance while the other variables such as internet applications and the mobile and device have no significance with 0.208 and 0.051 respectively. The significant relationship between data management system and organizational performance agrees with the mean rating of 4.02 which is interpreted as “agree” which can be gleaned from Table 11. This is result affirmed the study Davenport & Prusak (2000) who concluded that IT and other technologies promotes organized data management by developing large databases to cater to wide range of data or information. Hence, good data

management system will enable the management to achieve good performance outcomes.

**Table 20. T-Test on the extent of usage of IT Devices/Systems in the College (Gender)**

| Gender                             | Overall Mean |        | T-Test @.05 | Sig. (2-Tailed) | Decision      |
|------------------------------------|--------------|--------|-------------|-----------------|---------------|
|                                    | Male         | Female |             |                 |               |
| Extent of Use of IT in the College | 3.58         | 3.72   | -1.116      | 0.269           | Ho3, Accepted |

\*Significant at 0.05 level (2-Tailed)

Table 20 clearly showed that there is no significant difference between the respondents' gender and the extent of usage of IT devices/systems in the College tested at 0.05 level of significance ( $p=.269 > 0.05$ ). Therefore the null hypothesis is accepted. This further entails that the male and female respondents do not vary in their perceptions as supported by the similarity of mean ratings of 3.7176 over 3.5754 respectively.

**Table 21. T-Test on the extent of usage of IT Devices/Systems in the College (Designation)**

| Designation                        | Overall Mean |              | T-Test @.05 | Sig. (2-Tailed) |
|------------------------------------|--------------|--------------|-------------|-----------------|
|                                    | Academic     | Non-Academic |             |                 |
| Extent of Use of IT in the College | 3.6231       | 3.6271       | -0.029      | 0.977           |

\*\*Significant at 0.05 level (2-Tailed)

Results from Table 20 explained that there is no significant difference between the respondents' designation and the extent of use of IT devices/system in the College at 0.05 level of significance ( $p=.000 < 0.01$ ). This may mean that regardless of designation of the respondents, the same perceptions with regards to the extent of usage of IT devices/systems in the College with the similarity of their mean ratings.

## **5. SUMMARY OF FINDINGS, CONCLUSION & RECOMMENDATIONS**

This chapter discusses the summary of findings, conclusion and recommendations. To achieve the research objective, results from the statistical analysis will be summarized as basis for conclusion and recommendations.

### **5.1. Summary of Findings**

Summary shows that, the most of the equipment and IT devices used in the college includes desktop as it accounts for 76.7% while only 3% participants use laptop. Consistently, the results showed that the large extent of its usage is through laptops and desktops with 3.85 and followed by mobile devices and tablets with 3.52 and the rest revealed neutral responses with the intranet, CRM, HR system, accounting software and office 365. This clearly indicates that the college is still not exposed with current systems and programs that can enhanced the processes and are mostly accepted by many business nowadays.

In terms of the extent of agreement on IT use on organizational performance, the outcome displayed that according to the summary table, all the responses on organizational performance variables such as performance & targets achievement; financial performance; accountability; quality service; and operational efficiency; the responses unanimously stated an “agree” response which would mean that IT use impacts or influences the performance level in organization. This is also evidenced with the correlation coefficient  $r= 0.673$  at 0.01 level of significance where the relationship is moderately correlated. Indeed it can be safely assumed that there is moderate relationship between IT use and organizational performance. This result is consistent with the findings in various studies that affirms the positive relationship between IT use and organizational performance (Beckey, Pulley and Braunstein; 1984; Elliot, & Procket, 1996; McNutt, & Boland, 1999; Hempell, 2004; Pourmirza, 2006).

However, assessing in details the significant predictor of organizational performance regression analysis has been used, the results revealed that only the database management system significantly correlates to organizational performance with 0.007 significance while the other variables such as internet applications and mobiles/devices have no significant relationship with p-values 0.208 and 0.051 respectively. This holds the fact that, companies should give emphasis on developing and maintaining a good database management system that is supported by the hypothesis assumed in this study. Utilizing T-Test to test the significant difference using respondents' gender and designation variables vis a vis the extent of usage of IT devices/systems, findings revealed that both gender and designation have no significant difference on the extent of usage of IT devices/systems with p-values 0.269 and 0.977 respectively.

## **5.2. Conclusion**

From above findings, conclusion can be drawn. Firstly, the college is still using desktop as its IT devices in the offices while less usage on laptops. This is also supported by having its large extent on the use of laptops and desktops while less application on the following systems: intranet, CRM, HR system, accounting software and office 365. On the other hand, evaluating the extent of agreement of IT use on organizational performance, it can be concluded that the respondents unanimously "agree" on the impacts of IT usage on organizational performance variables such as performance & targets achievement; financial performance; accountability; quality service; and operational efficiency. Moreover, it can also be concluded that there is moderate relationship between IT use and organizational performance using the statistical tool, the correlation coefficient. While using the regression analysis finally, the three IT variables such as internet applications, mobiles/devices, and database management system; clearly the

results contributes to concluding point that only the database management system significantly correlates to organizational performance. Therefore, more emphasis should be taken into consideration on the systems/applications used in database programs although there is also need to consider the internet applications and the devices in some extent as the case maybe.

### **5.3. Recommendations**

Based on the findings and conclusion, the recommendations can be offered as basis for the college to improve their current operations and gain competitive advantage over their competitors.

1. There is a need for the college to upgrade themselves with the current technologies whether in equipment and in systems and software considering that the results revealed the less utilization of such systems and programs. To be updated and competitive, the college can perform benchmarking with top performing colleges and universities in order to copy those best practices that can be best applied in the college settings.
2. Desktops are considered obsolete nowadays as there are laptops which are handy and in terms of mobility you can work anywhere to deal with transactions and so, if there are possibilities to replace those desktops with laptops and other new devices, it would serve the purpose and provides more benefits to the workers and the entire college as well. With good internet connections and connectivity, the laptop can serve its purpose with convenience rather than maintain desktop computers.
3. The college should device ways and means to implement the systems and programs to implement and maintain sustainably the application of intranet, CRM, HR system, accounting software and office 365 which can improve the operations and processes of the college considering that the results showed the neutrality of their response. The

utilization of these systems and programs provides the college with a good database management that proves to impacts positively on organizational performance.

4. Budget allocation and top management support are highly needed in order to attain its objective on revolutionizing advance technology in the college. Since this decision requires large outlay, the IT department should have a convincing and workable plans for the top management to acquire new technological devices and programs that will work for longer period and sustainable system in the long-term operations by the college. Project proposals would be necessary to serve the purpose of advancing in technology.
5. Seminars and workshops should be conducted regularly or from time to time on the use of latest technologies and systems that will be applied to the college. To achieve IT revolution, the employees should be well-aware whatever advancement in technologies for their efficiency and applications. This also should cater not only to the non-academic staff and to academic staff where transfer of learning can be best shared by the teachers especially in the IT department.
6. Top priority on IT use should be done on maintaining good database management system to organize and use in long-term the data or information may it be on registration records, financial records, maintenance records and others for an easy, convenient, fast, reliable and well-informed business decisions or decision making processes of the college. This means that, keeping databases and systems will improve the current operations in the college. Database can be internally or externally sourced based on what is preferable and convenient for the college to utilize or depending on their needs.
7. The IT department should initiate a proposal and requisition on the purchase of new systems and software and develop a timeline for its implementation to elevate the

present operational system utilized by the college. Notwithstanding, IT equipment can also be requisitioned to replace the old equipment for upgrading.

8. And, coordination with other departments would be necessary in order to upgrade the use of IT and apply college-wide the upgrades of IT utilization for better organizational performance outcomes. Among others, the college should utilize the IT to academic and non-academic related processes such as facility management systems, course timelines, sales applications and others, online registration system, and others.

#### **5.4. Direction for Further Studies**

This study is limited to the academic and non-academic staff in the chosen college, ICEM. Moreover, the scope of the study is also limited to 60 samples that represents the total population of the staff in the college being one of the colleges operating under the direct supervision of the Ministry of Higher Education. Considering that in the results, the use of IT in the college may not be fully utilized and still a concern for the college, a comparative study can be conducted in order to evaluate at what extent the level of utilization of IT in the college in comparison to the other colleges and universities operating throughout the Sultanate and to assess what are the areas that needed to be improved. Also, because the sample is relatively small, a similar study can be conducted to determine the results in wider respondents and interpret the results to contribute to the body of knowledge. Lastly, the result of the study can be followed up by qualitative study in order to further validate the interpretations made based on the quantitative results.



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