

Assessing the Impact of Implementing ERP Systems on the Operational Performance of Businesses

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Abstract

This research was conducted with the purpose of assessing the impact of ERP Systems implementation and the operational performance of businesses within the Kumasi Metropolis. The objective of the study was to examine factors that hinder ERP system implementation by businesses. The researchers used primary data and the data collection instruments were questionnaires and interviews. The researchers find that ERP system implementation has positively influenced performance of businesses. The cost of purchasing, installation and maintenance of ERP system is a hindrance for many small/infant businesses. The study finds that, irrespective of the strengths ERP system such as high security and backup features, there are some weaknesses. The researchers recommended that, in the fast changing technological world, all categories of businesses should endeavor to adopt ERP systems in their operations in order to thrive on the global competitive and dynamic market environment.

Keywords: Businesses; Market; Enterprise resource planning systems; Finance

Introduction

Background to the study

Enterprise Resource Planning (ERP) systems are integrated software solutions that cover all aspects of operations of every company. Originally, these systems only included aspects of production. Later added support and other business processes (functions) as well as the purchase, sale, finance, accounting, human resources, and thus included managing all relevant business resources. Problems posed by separated systems, called for the need for organisations to implement ERP systems.

The purpose of ERP is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders. This software is used by many enterprises, particularly by multinational corporations, has a critical role in ensuring increased efficiency. ERP software is used by many organizations for example services, production finance, and transportations.

Statement of the problem

Businesses all over the world are making sure that business processes and financial reporting does not become a problem and hence can easily produce reports that will be free from material misstatements. Almost all organizations that do implement ERP systems do not seek to gain only intermediary gains in business processes, but also to obtain some financial and non-financial benefits at the organizational level [1-3]. Vendors and system consultants often claim that the “best business practices” are captured in ERP system packages. As results businesses that have refused to the implementation of ERP systems have suffered massively. These include errors, improper documentation, poor records, and poor business processes. Regrettably, ERP adopting organizations have reported both positive and adverse outcomes. In reality, many organizations have experienced enormous challenges after implementation, and some suffered greatly from devastating ERP projects. These and other issues that have motivated the researchers to embark on the topic mentioned above.

General objective of the study

To assess the impact of implementing ERP systems on the operational performance of businesses.

Specific objectives of the study

1. To examine the possible factors that hinders ERP system implementation by businesses.
2. To investigate how ERP systems have influenced business processes and performance.
3. To evaluate ways of enhancing the effectiveness of ERP system on the operational performance of businesses.

Research questions

Related to the problem, the research seeks to address the following questions

1. What are the possible factors that hinder ERP system implementation by businesses?
2. How have ERP systems influenced/improved business processes and performance?
3. What measures should be adopted to enhance the effectiveness of ERP system on operational performance on businesses?

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Significance of the study

The significance of the study is to get a deep view about the impact of ERP system on the operational performance of businesses. Then at the end of the work readers would find that whether the implementation can save money, time and reduce extra work? Whether the investment in ERPs is worthwhile? These questions are linked to one key issue, does this system increase the company's operational performance?

Limitation of the study

The study focuses on private organizations in the central business district of (Adum) Kumasi. In Ghana ERP adoption and implementation is more prevalent in private entities than in public ones, a fact attributable to meet the need for private firms to focus more on the efficient management of their limited and scarce resources. Most of the organizations were not happy due to the fact that after knowing much about what they do, the researchers may leak some confidential information. So they were reluctant to give us information. With persistent request all that we need were given and that helped the researchers to complete the work on time.

Literature Review

Introduction

This chapter reviews existing literature and establishes gaps with regard to studies on ERP implementation benefits and impact on organizational operational performance.

Evolution and definitions of ERP

The term Enterprise Resource Planning (ERP) was developed from the evolution and expansion of Material Requirements Planning (MRP) and Manufacturing Resource Planning (MRP II) to include more business functions and processes. In the 1980's MRP expanded from a material planning and control system to a firm-wide system with the capabilities for the planning and control of almost all the firm's resources [4]. Differences in definitions have developed because ERP studies have emerged from diverse areas of studies, leading to different applications by practitioners and academics. Some researchers looked at ERP as both a concept and a system [5]. Conceptually, ERP is seen as the integration of various business processes in an organization leading to a better order management and control, accurate inventory management information, better workflow and supply chain management and improved industry best practices.

This line of thinking was also employed and defined, ERP system as an amalgamated software package, which combines a set of standard functional modules (Production, Sales, Human Resources, Finance, etc), developed or put together by an organization, and which could be used for the specific needs of each customer. The integration and coordination also creates new visibility or greatly improves existing visibility across and beyond the structures and processes of the organization.

Varied ERP studies in developed and developing nations

ERP implementation in developing countries leads to a different experience compared to implementation in developed countries [6]. In this section, we explore the context of developing and developed countries and consider research on ERP implementation within these two contexts.

The World Bank uses gross national income (GNI) as the metric

for classifying economies. Under its classification module, economies with per capita income below \$13,460 are categorized as non-high income countries with some 72% of the world population falling under this group as at 2012 [7].

Factors that hinders the implementation of ERP system: Added to the wide disparity in IT related research between developed and developing countries, few researchers have specifically focused on ERP implementation, adoption and assimilation. Compared the various implementation practices of ERP between developed and developing countries and noted that developing countries are confronted with some key unique challenges: economic, cultural and infrastructure. They concluded that ERP implementation has a positive impact on gaining competitive advantages for organizations with advanced national and organizational factors. Although some researchers look at these factors as impediments to successful ERP implementation in developing countries, others look at them as specific and unique factors that must be taken into consideration before ERP projects are undertaken.

Some of these factors are examined as control variables in this study. Kouki et al. [8] investigated factors that will stimulate successful ERP assimilation and the differences in impact between developed and developing countries. Other factors they identified included training and education, IT support, organizational culture, managers and user involvement, and finally strategic alignment. According to the authors, developing countries' main problem- high power distance, also presents its own peculiar issues with IT (Information technology) and ERP assimilation.

ERP, just like all other information systems, is implemented within various cultural contexts of the individual, organisation and society. When ERP is adopted and assimilated within these diverse and dynamic contexts, conflicts are inevitable. The management of these evolving cultures is important. Awareness of cultural differences is therefore key to ERP success; managers should consider evaluating the chances of cultural conflicts when embarking on IT facility changes. The study further asserts that implementation of IT alone does not solve all problems within an organisation and the possibility of ethical issues surrounding managerial cultural change was also highlighted.

The influence of ERP system on business processes: Conducting business in developing countries tend to be more frustrating than developed countries. Low per capita income and general poverty, for instance, mean companies must offer their products at lower unit prices, or make them smaller, or of lesser quality. Poor infrastructure and little capital also mean that it is more difficult for local businesses to emerge and survive.

They also noted that institutional pressures contribute to post-implementation assimilation when the integration processes are prolonged and outcomes are dynamic and uncertain.

The effectiveness of ERP system on the operational performance of businesses: The impact and effect of IT implementation on organizations has been more exhaustively studied. The relation between IT and firm performance can be categorized into 3 paths; path 1- is a direct relationship between IT and Overall firm performance; Path 2- focuses on the relationship between IT and business process performance; and Path 3 looks at how the processes interact to influence the overall firm performance. They suggested that a fourth path, which looked at the other contextual factors that influence the relationship between business process and overall firm performance

(size, IT intensity, financial health, industry) could be considered. Further investigations into these paths and examined the validity of two commonly used measures of success of information systems. He concluded that user satisfaction is significantly related to performance. However the relationship between usage and performance was not as significant. He also observed that a partial correlation after correction for user satisfaction was not significant either.

Research into ERP implementations reveals that the impact of ERP on performance may not always be positive.

ERP systems implementation is not an inexpensive or risk-free venture. According to Seethamraju and Seethamraju up to 65% of executives sampled believed that ERP systems have at least a moderate chance of hurting their businesses because of potential implementation problems [9]. It is thus worthwhile to examine factors that determine whether the implementation will be successful or not as part of ERP impact studies.

Profile of Kumasi metropolis

Kumasi Metropolitan is one of the twenty-seven districts in the Ashanti region. The Metropolitan was established on 10th March, 1989 by a legislative instrument (LI) 1473. This was the period Ghana adopted the District Assembly concept. The overall goal is to accelerate growth and development in the Metropolitan. The Kumasi west district was carved from this Metropolitan on November 2007.

The economy of the Metropolitan used to be predominantly agrarian. However, the upsurge of commercial, industrial and service activities depicts potential diversification of the local economy. Currently the service sector employs majority (58.3%) of the population in the Metropolitan.

The Metropolitan has a number of educational facilities. Under the public sector, it has 111 basic schools, 50 junior high schools, five senior high/vocational and two tertiary. The private sector on the other hand has 117 basic schools, 37 junior high school and four senior high/vocational schools.

There are quite a number of financial institutions that are found in the Metropolitan. These comprise banks and non-bank financial institutions such as micro finance companies. Notable among the banks and non-financial institutions in the Metropolitan area; Ghana Commercial Bank, Barclays Bank, Zenith Bank, Ecobank, Star Assurance, Vanguard Insurance, Excel Microfinance, First Allied Savings and Loans, Multi Credit Savings and loans, Opportunity Savings and Loans, etc. These financial institutions help in improving the living conditions of the inhabitants in the Metropolitan by granting loans to desired customers and also aiding in investments.

Six hospitals, twelve clinics, seven chips compound, three maternity homes and three (3) health centers provide health services to the district population of 123,224 (2010 PHC).

These businesses are a source of livelihood for a number of the inhabitants. The introduction of pharmaceutical companies such as Ernest Chemist and Kama Health Service Limited in the Metropolitan has also improved the economy of the Metropolitan. Most of these companies are relocating some of their branches to the Metropolitan to serve as a distribution centre to other parts of the region.

Livestock production is becoming one of the major potentials in the Metropolitan. Some of the population engages in these productions either on a subsistence base or on large scale. Some of the livestock

produced includes: poultry, cattle, grass cutter, rabbits and many others.

Methodology

Introduction

This chapter presents the study area and the type of methodology used for the research for the study. The section also talks about the study population and the sampling technique used by the researcher.

Research design

A case study approach was used in the study. This research design was used because data was collected from a large population (50). The researcher used self-administered questionnaire and interview in gathering the data from the respondents. This method was chosen as it proved to be the most appropriate in terms of the time and resources to the researchers. It also afforded the opportunity to meet and relate with the respondents.

Population

Given the exploratory nature of the study, all organizations that have implemented ERP systems in Kumasi were targeted with no definitive boundaries, type of ERP system implemented, or extent of implementation

Source of data

The researcher used primary sources of data.

Sample size and sampling techniques

The sample for the study was (50) respondents from (10) selected organizations in Kumasi. The sampling technique used was the convenience non-probability sampling. This sampling technique is where a sample (subjects) is selected based on the researcher's convenience like availability of the subjects.

Data collection instrument

The research instrument used in this study comprised close ended and open ended questionnaire that was designed by the researchers.

Data collection procedures

The administration of the questionnaire helped the researchers to build report and also to explain the purpose of the study to the respondents. The unit of analysis was therefore the organization and thus the CEOs of various organizations, senior IS executives, and selected functional heads who use the systems were the most appropriate for data source for this research. To the best of the researcher's knowledge, the estimated targeted firms that have implemented ERP systems amounts to 10 distributors in Kumasi. For each target organization for the main survey, at least one senior IS executive and one senior non-IS executive were targeted. For selected large organizations, functional heads (Finance/Accounting, Operations, Information Technology and Marketing) were additionally targeted. Hence, the number of questionnaires to be delivered to target organizations ranged from a minimum of three to a maximum of five based on the size of the organization.

Data analysis method

In order to ensure simple interpretation and comprehension, the data was mainly analyzed using descriptive tools, such as pie charts,

bar chart, and summarily presented in tabular and graphical forms. Data was disaggregated and presented using tables and diagrams. Each research question was analyzed based on responses given by the respondents and converted to percentages.

Data validity and reliability

In order to validate the research instrument, the questionnaire was piloted on a sample of some selected businesses in Kumasi. Samples of the questionnaire were also submitted to the supervisor for his comments and the necessary corrections made. This was to check whether the questionnaire designed can answer the research questions posed.

Ethical consideration

For the study not to breach any ethical issues, the consent of the respondents was first sought before the questionnaire could be administered. The respondents were first briefed on the purpose and objectives of the study. The respondents were made aware that, the information they were going to give would be treated with confidentiality and that their anonymity was assured.

Data Analysis and Discussions of Findings

Introduction

The study assesses the impact of implementing ERP systems on the operational performance on businesses in the Kumasi Metropolis. This chapter analyzes the data obtained in the field survey based on the questionnaires administered. The questionnaires were based on the objectives spelt out in chapter one and the analysis based on chapter three. This chapter presents the findings in reference to the research questions in chapter one. The data collected was presented quantitatively in percentages with the aid of tables and diagrams.

Table 1 depicts that, fifty (50) questionnaires were distributed to

the ten (10) selected businesses within the Kumasi Metropolis who had implemented ERP systems and the total number of questionnaires representing 100%. Out of the total number of questionnaires distributed and retrieved, twenty (20) were management staff (General Manager, Accountant) representing 40% and thirty (30) were operational staff (System Administrator, Wholesale/Stores Manager, Sales Person) representing 60%.

Care was taken to ensure that all ten (10) businesses were represented in the chosen sample in order to make the sample as representative of the population as possible.

Analysis of demographic features of the respondents

Table 2 depicts that out of the total number of 50 questionnaires distributed and retrieved from the respondents of the various business organizations, thirty (30) of them were males representing 60% and twenty (20) were females representing 40%.

Table 3 shows that 5 respondents are below 21 years representing 10%, 22% representing 11 respondents are between 21-25 years, 14% representing 7 respondents are between 26-30 years. 18% representing 9 respondents are between 31-35 years, 16% representing 8 respondents are between 36-40 years and 20% representing 10 respondents fall at 41 years and above.

Table 4 portrays that 14 and 18 respondents had SSSCE/WASSCE and HND academic qualification representing 28% and 36% respectively. 12 respondents had 1st degree academic qualification representing 24%, 2 respondents had 2nd degree Academic qualification representing 4% and 4 respondents had ICA (GH) certificate as chartered accountants representing 8%. The study has revealed that with basic knowledge in accounting one can learn ERP not even the highest level of education.

Table 5 depicts that 12 respondents representing 24% had 3 years and below work experience, 14 respondents representing 28% had 4-6

Category of respondents	Distribution of questionnaire to the selected businesses	Retrieval of questionnaire from the selected businesses	Percentage (%)
Management Staff	20	20	40
Operational Staff	30	30	60
Total	50	50	100

Source: Field work (2018)

Table 1: Rate of response.

Gender	Category of respondents		Total	Percentage (%)
	Management	Operational		
Male	13	17	30	60
Female	7	13	20	40
Total	20	30	50	100

Source: Field work (2018).

Table 2: Gender of respondents.

Age Category	Number of respondents	Percentage (%)
Below 21 years	5	10
21-25 years	11	22
26-30 years	7	14
31-35 years	9	18
36-40 years	8	16
41 years and above	10	20
Total	50	100

Source: Field work (2018).

Table 3: Age category of respondents.

Academic qualification	Number of respondents	Percentage (%)
SSSCE/WASSCE	14	28
HND	18	36
1 st Degree	12	24
2 nd Degree	2	4
Chartered Accountant	4	8
Total	50	100

Source: Field work (2018).

Table 4: Educational background of respondents.

Work experience	Number of respondents	Percentage (%)
3 years and below	12	24
4-6 years	14	28
7-9 years	10	20
10-12 years	6	12
13 years and above	8	16
Total	50	100

Source: Field work (2018).

Table 5: Work experience of respondents.

years work experience, 10 respondents representing 20% had 7-9 years work experience, 6 respondents representing 12% had 10-12 years work experience and 8 respondents representing 16% had 13 years and above work experience with the business organization within which they have been employed. Nonetheless the study has revealed that most of the respondents are young guys and ladies who have work for few years under ten years.

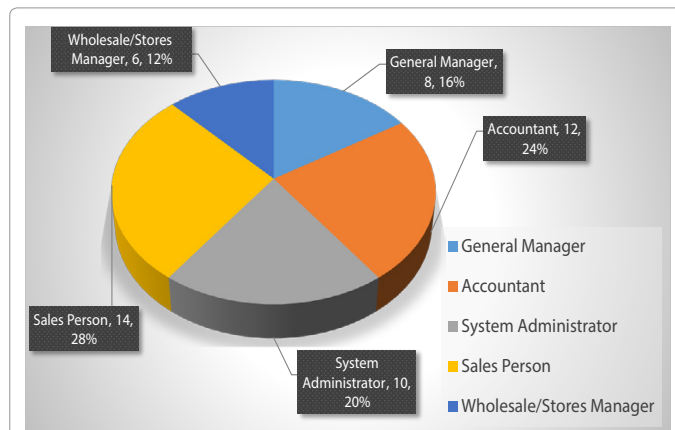
Figure 1 portray that, 8 respondents representing 16% were General Managers, 12 respondents representing 24% were accountants, 10 respondents representing 20% were system administrators, 14 respondents representing 28% were sales persons and 6 respondents representing 12% were wholesale/stores managers. The table above depicts the various positions held by respondents who were given questionnaire to answer. Interestingly the sales persons have seen the usefulness of using the ERP as the accountants and the system administrators.

Analysis of data retrieved from respondents on the factors that hinders ERP system implementation

Table 6 depicts that 30 respondents representing 60% were in retail business, 5 respondents representing 10% deals in electronics and 15 respondents representing 30% were in pharmaceutical business. The results indicated that retail and pharmaceuticals business recorded the highest level of influence on the extent of ERP implementation followed by the electronics. It was revealed that the extent of ERP implementation could be explained by organizational type, which is a very large effect. This supports the researcher's proposition that the level of competition, the level and effectiveness of regulation, and other institutional factors within industries influence the extent of ERP implementation uniquely.

Table 7 portrays that 80% of the respondents asserted that the businesses are solely Ghanaian owned and 20% of the respondents work in joint venture businesses. The results have clearly shown that most of the businesses are solely owned by Ghanaians.

Table 8 depicts that all the respondents in the study disclosed that they use accounting software in their daily operations.



Source: Field work (2018)

Figure 1: Pie chart depicting job position of respondents.

Type of business	Number of respondents	Percentage (%)
Manufacturing	-	-
Retail	30	60
Machinery	-	-
Electronics	5	10
Pharmaceuticals	15	30

Source: Field work (2018).

Table 6: Type of organizational setup.

Ownership of business	Number of respondents	Percentage (%)
Solely Ghanaian Owned	40	80
Joint Venture	10	20
Foreign Owned	-	-
Total	50	100

Source: Field work (2018).

Table 7: Ownership of business.

Responses	Frequency	Percentage (%)
Yes	50	100
No	-	-
Total	50	100

Source: Field work (2018).

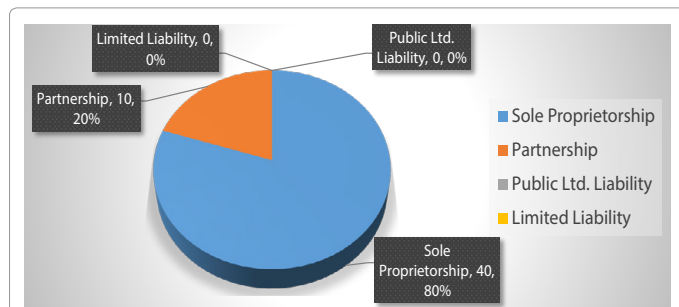
Table 8: Whether businesses operate using accounting software.

Analysis of data retrieved from respondents on the influence of ERP system in improving business process on firm's performance

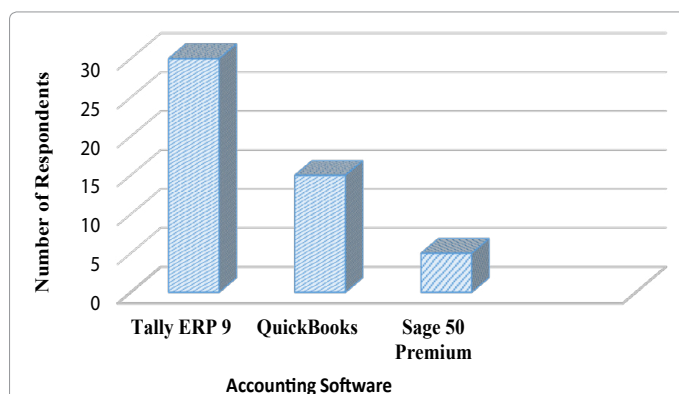
Figure 2 depicts that 80% of the businesses were owned by individuals and 20% of the businesses were owned and managed by group of persons. This means that businesses in Ghana (Kumasi) are owned by private individuals.

Figure 3 portrays that the longest bar represents respondents who used Tally ERP 9 in their operations, the next longest uses QuickBooks in their daily business activities and the shortest bar representing those who uses Sage 50 Premium in their business transactions. The statistics has shown that most businesses (retail) in Ghana and for that matter Kumasi, Ashanti uses Tally ERP9 in their business transactions.

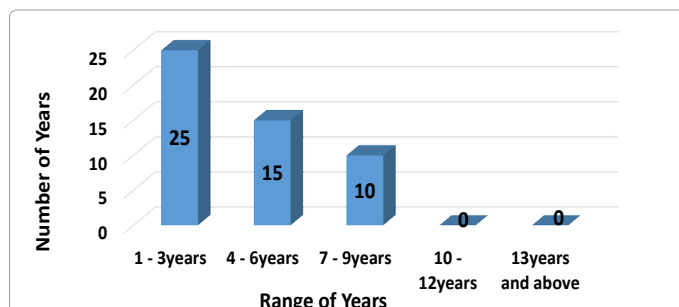
Figure 4 depicts that most of the selected organizations have being using accounting software within a period of 1- 3years; this



Source: Field work (2018)
Figure 2: Pie chat depicting legal form of entity.



Source: Field work (2018)
Figure 3: Bar chart showing the type of Accounting Software being used.



Source: Field work (2018)
Figure 4: Bar chart depicting the durations businesses have being using Accounting Software in their operations.

is represented by the longest bar in the chart. The next longest are those selected businesses that have used accounting software in their operations within a period of 4-6 years and followed by the next selected organizations that have operated their businesses using an accounting software within a period of 7-9 years. The study has revealed that none of them have used accounting software in their operation for more than 10 years. This indicates that ERP has been a recent emerging in Ghana.

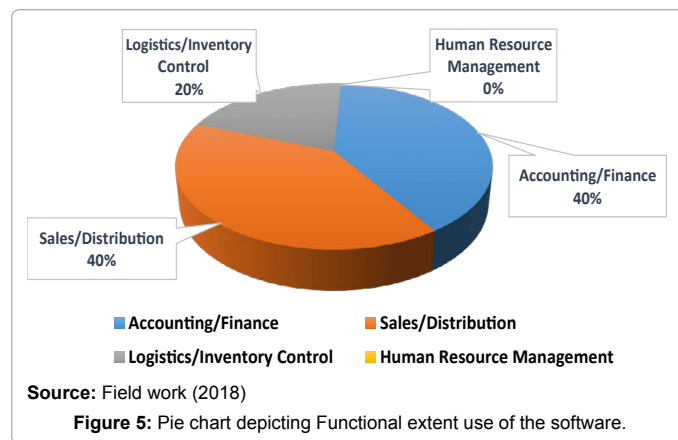
In respect of Figure 5, it shows that Accounting/Finance and Sales/Distribution uses accounting software than Logistics/Inventory Control and less to it Human Resource Management as shown in the chart above. This result have it in a slight contrary to Botta-Genoulaza and Millet whose definition to ERP was an amalgamated software system, is a combination of standard modules (production, sales, human

resources finance, etc.) developed by an organization, and could be used for the specific needs of each customer. However, it was realized from the survey that all the selected businesses used the accounting software in Accounting/Finance, Sales/Distribution and Logistics/Inventory Control in their day-to-day business activities which also support Botta-Genoulaza and Millet, and therefore, the implemented accounting software is almost used across the various departments of the selected organizations

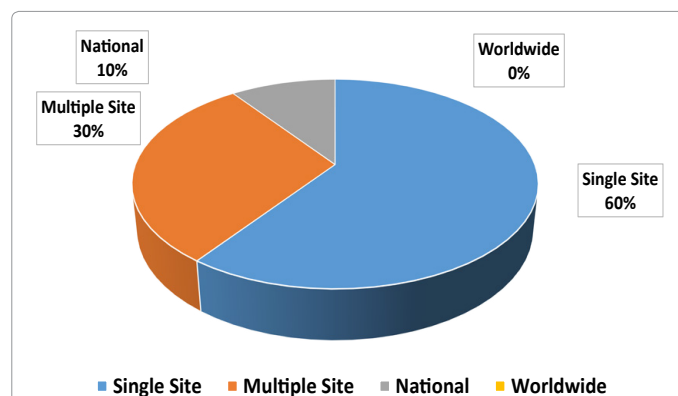
Figure 6 shows that, most of the organizations have installed the accounting software in single site; this is represented in the sea blue color in the pie chart. Some of them had it in a multiple site and few had it nationally, these are shown in an orange and ash color respectively in the chart above. Table 9 also depicts that most of the businesses are individually owned and do not have any branches.

Discussion of results

This research work was conducted purposely to assess the impact of implementing ERP systems on the operational performances on some selected businesses within the Kumasi Metropolis. The study revealed that majority 60% of the respondents strongly indicates their operation require a significant amount of information processing. The other 40% also agreed to the same fact. This affirms Akkermans definition of ERP where composite transaction information together with various types of information processing abilities put into one database to ensure effective management and organization day to day activities.



Source: Field work (2018)
Figure 5: Pie chart depicting Functional extent use of the software.



Source: Field work (2018)
Figure 6: Pie chart depicting the geographical implementation of the accounting software.

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
Our operations require a significant amount of information processing.	30 60%	20 40%	-	-	50
Data can be manipulated by unauthorized users.	5 10%	10 20%	20 40%	15 30%	50
Our business processes are compatible with the Accounting Software processes.	30 60%	10 20%	5 10%	5 10%	50
It is easy to customize the organization's business processes to suit Accounting Software system.	5 10%	10 20%	25 50%	10 20%	50
It is easy to reconfigure the Accounting Software to fit the organization's processes.	0 -	5 10%	5 10%	40 80%	50
Accounting Software implementation has improved the efficiency of our operations.	35 70%	15 30%	-	-	50
Accounting Software implementation has reduced the amount of rework needed for data entry errors.	30 60%	15 30%	-	5 10%	50
Business processes halted when there are power failures.	40 80%	10 20%	-	-	50
Our organization is free from excessive bureaucratic regulations and controls.	20 40%	15 30%	10 20%	5 10%	50
Much time and higher cost are needed to invest in training staff on accounting software.	35 70%	15 30%	-	-	50
Inter-departmental interaction has increased as a result of Accounting Software implementation.	40 80%	10 20%	-	-	50
Our organization has the data it needs to make decisions.	30 60%	15 30%	-	5 10%	50
Accounting Software implementation has improved timely access to corporate data.	35 70%	5 10%	-	10 20%	50

Source: Field work (2018).

Table 9: Analyses of responses on ways of enhancing the effectiveness of ERP system on operational performance of businesses.

Data manipulation

The study revealed that majority 40% of the respondents disagreed that data can be manipulated by unauthorized users while 30% respondents strongly disagreed and 10% strongly agreed and 20% agreed. This means that without the authorized user it is very difficult for one to alter anything on the system. The researcher had some personal interactions with those who said it can be manipulated and they stressed when one has certain information. Furthermore, this divest result found has suggested that ERP is not the solution to all the challenges organizations' faces. This support the study by Carton and Adam for example showed that there was hardly any benefits realized for supply chain managers with respect to supply and demand activities. The inability to easily customize the ERP system to suit changes in market conditions also affected the output of basic performance information and as a result managers lost confidence in the well acclaimed promise of ERP integration efficiency.

ERP Compatibility with Business Processes

The study revealed that 60% of the respondents showing majority strongly agreed that their business processes are compatible with ERP systems, 20% also agreed while the rest were not in an agreement. This means that ERP is compatible with business process which is a result of the use of ERP system to support various value chain activities.

Customization to suit business processes with accounting software system

The study revealed that it is not easy to customized business process to suit Accounting Software while 50% and 20% were in strongly disagreed and disagreed, another 20% and 10% (30%) also agreed that business process can be customized to suit ERP system. This has proven the work of Lee and Lee [10] that ERP is not the only software solution customized to suit an organization, but that it is

the organization's business blueprint that impacts on how employees work by enforcing its own way of reasoning on a company' strategy, organization and culture.

Easy to reconfigure the accounting software to fit the organization's processes

The study revealed that majority 80% of the respondents strongly disagreed that it is easy to reconfigure ERP systems to fit the organization's processes and 10% of also disagreed but the other 10% of them respondents agreed. The result found means that it is difficult in reconfiguring the accounting software to fit the organization's process. While reconfiguration of ERP to fit the organization's process has been identify as a challenge, Liang et al. [11] investigated some of the barriers faced by foreign software vendors in implementing ERP systems when they examined the cases of failed ERP implementations in China. They identified seven problems faced by foreign software vendors.

The problems identified were language, report format and content, cost control module, price, business process redesign, customer support, and consulting partner. They suggested the need for localized strategy development for global ERP leaders.

Operations efficiency improvement

The study has revealed that almost all 70% and 30% of the respondents for the study strongly agreed and agreed that Accounting Software implementation has improved the efficiency of their operations. Loukis affirm that ERP implementation improve performance [12]. More so Bakos and Treacy characterization of opportunities arising from IT, suggest that the business value of ERP systems can be defined and operationalized not only as performance at business process level, but also at organizational level [13]. Business process performance includes the operational efficiency enhancement in various business processes that are enabled by ERP systems such

as cost reduction and productivity enhancement. Porter concluded it by saying business process performance also includes operational effectiveness which relates to the benefits that arise as a result of the use of ERP systems to support various value chain activities.

ERP has reduced the amount of rework needed for data entry errors

The study revealed that majority 60% of the respondents strongly agreed that ERP implementation has reduced the amount of rework needed for data entry errors and 30% of them (respondents) also agreed, but on the other hand 10% of the respondents strongly disagreed. This means that ERP is more efficient in terms of errors in data entry.

Business processes halted when there are power failures

From the gathered and analyzed the study found that almost all 80% and 20% of the respondents strongly agreed and agreed that whenever there is a power failure all business activities are halted. This also suggests that in Ghana one major challenge business process incurred is power failure.

Our organization is free from excessive bureaucratic regulations and controls

The study revealed that Ghana is country of rule of law and there is no bureaucratic regulation and control on organizations. Majority 40% and 30% of the respondents strongly agreed and agreed that their business is free from excessive bureaucratic regulations and controls while 20% and 10% disagreed and strongly disagreed to that.

Cost benefit analysis

One of the seven problems identify by Liang was cost when they investigated some barriers faced by foreign software vendors in implementing ERP system in examining cases of failed ERP implementation in China [14]. My study however proves 70% and 30% that by strongly agreed and agreed. Also despite the failure rate of ERP implementation and all other complexities (cost and time) involved, Hayes reflect a positive response of the capital markets to firm's announcement of its plans to implement ERP system [15]. Bradford also indicated that top management support and training are positively related to user satisfaction, whereas the perceived complexity (cost and time) of ERP together with competitive pressure shows negative relationship [16].

Inter-departmental interaction has increased as a result of accounting software implementation

The study revealed that almost all 80% and 20% strongly agreed and agreed that Inter-departmental interaction has increased as a result of Accounting Software implementation. This come to endorse Davenport in keeping with Deloitte's functionality-style definition describes an ERP as any comprehensive system that lumps together and automates many of the business practices in the various departments of the firm including accounting, financial, human resource supply chain, and customer service [17]. This line of thinking was also employed and expanded by Botta-Genoulaza and Millet who defined ERP system as an amalgamated software package, which combines a set of standard functional modules (Production, Sales, Human Resources, Finance, etc.), developed or put together by an organization, and which could be used for the specific needs of each customer.

Our organization has the data it needs to make decisions

The study however revealed that high majority 60% and 30% of

the respondents strongly agreed and agreed that their organization has the data it needs to make decisions 10% showed strongly disagreed. This means information forms the basis of decision making and ERP is capable of providing such. Gore confirms this that ERP is referred to as cross-functional system in that it integrates the different business processes of various functional areas in an organization, eventually promoting efficient decision making [18].

Accounting Software implementation has improved timely access to corporate data

The study revealed that majority 70% and 10% of the respondents strongly agreed and agreed that accounting Software implementation has improved timely access to corporate data while 20% strongly disagreed. This implies that it is faster and easy to access corporate data in all functionaries.

Summary of Findings, Conclusions and Recommendations

Introduction

This is the final chapter of the study. It summarizes all research findings and attempts to make recommendations as to how to manage and improve the rate of ERP system implementation and the overall performance of business enterprises in the Kumasi Metropolis as well as its impact on the Ghanaian economy as a whole. This section of the study is entirely devoted to reviews and discussions of major findings of the study, drawing conclusions and recommendations in light of the findings according to the outlined research study objectives.

Summary of the findings

The research was to assess the impact of ERP system implementation on the operational performance of business organizations. The research was relied heavily on primary data. After carefully examining and analyzing the data collected from the respondents, the following findings were made:

The factors that hinders ERP system implementation

It was find out that the organizational type has effect on ERP implementation; the competition level, effectiveness of regulations, and other institutional factors within the industries influence the extent of ERP implementation.

Most of the solely owned Ghanaian businesses were using pirated software which did not give them full access to the use of that software.

The influence of ERP system in improving business processes on firm's performance

The businesses in Ghana (Kumasi) studied were all using accounting software in their daily operations.

Business' performance has enhanced with the introduction of ERP system to business operations. This is as a result of employees embracing it since it has made their job easier and faster to complete.

Ways of enhancing the effectiveness of ERP system on operational performance of businesses

With the use of ERP system businesses operation require a significant amount of information processing. This affirms definition of ERP where composite transaction information together with various types of information processing abilities put into one database to

ensure effective management and organization day to day activities.

It is very difficult for one to alter data on the ERP system unless the user has authorized access. Furthermore, this divest result found has suggested that ERP is not the solution to all the challenges organizations' faces. This support the study by Carton and Adam for example showed that there was hardly any benefits realized for supply chain managers with respect to supply and demand activities [19]. The inability to easily customize the ERP system to suit changes in market conditions also affected the output of basic performance information and as a result managers lost confidence in the well acclaimed promise of ERP integration efficiency.

ERP is compatible with business process which attests to performance is as results of the use of ERP system to support various value chain activities.

Business process cannot customize to suit accounting software. This proved the work of Lee and Lee that ERP is not the only software solution customized to suit an organization, but it is the organization's business blueprint that impacts on how employees work by enforcing its own way of reasoning on a company' strategy, organization and culture.

It is difficult in reconfiguring the accounting software to fit the organization's process. While this reconfiguration of ERP to fit the organization's process was a challenge, Liang investigated some of the barriers faced by foreign software vendors in implementing ERP systems when they examined the cases of failed ERP implementations in China. They identified seven problems faced by foreign software vendors. The problems identified were language, report format and content, cost control module, price, business process redesign, customer support, and consulting partner. They suggested the need for localized strategy development for global ERP leaders. Another challenge to ERP implementation in Ghana is power failure.

Accounting Software implementation has improved the efficiency of the overall operations of businesses.

ERP is more efficient in terms of errors in data entry.

There is much time and higher cost in training staff on accounting software; this was in line with one of the seven problems, when they investigated some barriers faced by foreign software vendors in implementing ERP system in examining cases of failed ERP implementation in China.

Inter-departmental interaction has increased as a result of Accounting Software implementation.

It is faster and easy to access corporate data in all functionaries with the use of ERP.

Conclusions

It was deduced from the findings of the study that the implementation of ERP system is accompanied with some challenges and weaknesses such as difficulty in reconfiguration and customization of ERP systems to suit business processes, cost of purchasing, time and cost of training users of ERP systems. However, the direct and indirect benefits (thus effective customer care services, effective and sound sales and distribution mechanisms, easily and timely accessibility to corporate data, effective inventory control management and increase in profitability rate), efficient in terms of errors in data entry, efficient in business operation, difficult to alter information on the system, etc. derived from the implementation of ERP systems far outweigh the challenges that come with ERP systems.

Recommendations

In respect of the diverse responses gathered from the various respondents and conclusions drawn on them, there are some lapses that need immediate or future improvement in order to ensure effective and a broader coverage of ERP systems implementation by businesses. The following recommendations were made for further improvement in ERP system implementation:

- i. Developers of ERP systems should create a room for easy reconfiguration and customization to suit business processes in respect of language, report format and content and security features such as audit trail.
- ii. The government should formulate and implement pragmatic policies that will help subsidize the cost of implementing ERP systems so that infant industries can also afford to effectively and efficiently run their day-to-day business routines with ERP systems.
- iii. Vendors of ERP systems should embark on massive public education (thus training seminars) for owners of business enterprises to be much aware of the overriding benefits associated with the implementation of ERP systems.
- iv. It also recommended that future work can look at the effect of the challenges of ERP systems on business operation.

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