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THE INFLUENCE OF INFORMATION SYSTEMS ON M-COMMERCE PERFORMANCE IN KENYA'S COMMERCIAL BANKS

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Abstract

Purpose: The purpose of the study was to determine the influence of information systems strategy implementation on Mobile-Commerce (M-Commerce) performance in Kenya's commercial banks.

Methodology: The study adopted a positivism research philosophy and explanatory research design as appropriate methodology for the study. The units of analysis for the study comprised of five managers from different management levels and departments from each of the 40 commercial banks in Kenya. Questionnaires were used for data collection. The collected data was analyzed using inferential and descriptive statistics.

Findings The study findings indicated that there was positive and statistically significant relationship between information systems and m-commerce performance. The path coefficient was positive and significant at 0.05 level, t-value of 2.031, p-value =0.043.

Unique Contribution to theory, practice and policy: The study informs commercial banks in Kenya, Central Bank of Kenya, Communication Authorities and the scholars on the opportunities in the development of appropriate strategy implementation process and the risk of not adopting the right strategy.

Key words: *Information systems, strategy implementation, m-commerce performance, Kenya's Commercial Banks.*

1.0 INTRODUCTION

Strategy plays a very important role in the existence of an organization. However, without effective strategy implementation, no business strategy can succeed. Strategy implementation is more difficult than strategy making (Hrebiniak, 2006). Central to every business is the adoption of a strategy that would enhance an organization's overall performance, strengthen its long-term competitive position to gain competitive advantage over competition. A competitive advantage is the most reliable approach for profitability. Organizations tend to earn significantly higher profits when they enjoy competitive advantage as opposed to when it is constrained by competitive disadvantage (Hough, Thompson, Arthur & Strickland, 2011). Based on the above background on strategic management and strategy implementation, this study sought to investigate the relationship between strategy implementation and m-commerce performance in Kenya's commercial banks.

Banking sector is one of the oldest systems that has evolved over time based on consumption and demand of financial services. The consumption of services has consistently changed in size and method of transaction but the core business has remained constant, with the exception of the fact that innovation has transformed banking resulting in a bank operational changes (Shekhar, 2005).

Globally, strategy implementation is taking a new shape by incorporating firm's functional areas such as marketing, human resource management and information systems strategy implementation process (Naranjo-Gill & Hartmann, 2006). Well-accepted factors of strategy implementation such as structure, culture or organizational processes are developing as new trends and many organizations are emphasizing them (Olson, Slater, Tomas & Hult, 2005).

1.1Research Problem

In all sectors, organizations strive to succeed irrespective of the many challenges presented by globalization, rapid technological changes and increased competition among others. To counter the challenges, organizations seek for ways to maximize wealth though various ways. Kenya's banking industry is undergoing rapid technological changes and has one of the most successful mobile banking models in Africa – the M-Pesa which caters for more than 70 percent of Kenya's adult population (KPMG, 2015). A study by European Investment Bank (EIB), (2015, indicates that sub-Saharan African (SSA) financial systems are underdeveloped and the region's banking sectors are inefficient at financial mediation. The World bank's database (2015), indicate that only 34 percent of adults in SSA were banked in 2014, thus access to finance in SSA is among the lowest in the world. Despite the poor financial access, SSA leads the world in mobile money accounts; while it is estimated that only 2 percent of adults worldwide have a mobile money account, in SSA 12 percent of the population have a mobile account (EIB, 2015). The dawn of mobile technology and other innovations have enabled access to banking services to a broader customer base allowing services to be provided to lower income households residing in rural locations through affordable cellular technology (African Development Bank, 2012).

Previous studies demonstrated that there were limited research on information systems strategy implementation, hence this study was meant to close this gap. A significant amount of scholarly work has been done in strategy formulation, but implementation of information system strategies in banks has not had a strong focus. Earlier studies on M-Commerce concentrated on customer adoption and end user performance, and not from the perspective of the financial

provider and this study was intended to close this gap. M-commerce being a new innovation, is expected to present more challenges in implementation. Factors hindering or enhancing its implementation, have not been identified in any of the research reviewed. Most of the reviewed literature on m-commerce strategy have focused on consumer end adoption of m-commerce and m-commerce security. This study focused on implementation of m-commerce in the banking sector.

1.2 Research Objective

To determine the influence of information systems on m-commerce performance in commercial banks in Kenya.

2.0 LITERATURE REVIEW

This section explains the theories used as the fundamental foundations of the study. The theories used were; agency theory, resource based theory, expectancy theory and activity theory**.**

2.1The agency theory

The agency theory emphasizes a management approach where a person (agent) acts on behalf of another (the Principal) and is supposed to advance the principal's goals (Laffont, Jean, & David, 2002). Laffort and Martimost (2002), contends that the agency theory of strategic management is very crucial since the action chosen by a particular individual (the agent) affects several other parties (including the principals). The agency theory is important for explaining the relationship between the shareholders and the agents they appoint to implement strategy so as to maximize the returns (Davis, Schoorman & Donaldson, 1997).

2.2 Resource Based View

The resource based view theory (RBV) theory suggests that organizations are gifted with resources such as staff, technology, organizational routines and other assets. The theory suggests that for an organization to have competitive advantage over its competitors, it needs to prioritize the acquisition of unique resources and capabilities (Barney 2002). The resource-based view (RBV) theory explains that valuable and rare organization resources can be difficult to replicate, and thus leading to sustained advantages in organizational performance (Alavi, Wahab, Muhamad, & Shirani, 2014).

2.3 Expectancy Theory

Expectancy Theory suggested that people will only carry out a task with the expectation that their action will help them achieve a required result. Vroom (1964), suggested that the relationship between people's behavior at work and their goals which lead to their performance is based on individual factors such as personality, skills, knowledge, experience and abilities. Employees have differing goals and could be said to be motivated at the belief that there would be a positive correlation between their performance and their effort (Vroom, 1964).

2.4 Activity Theory

Activity theory has core concepts that are fundamental for studies of technology (Nardi, 1999). In Activity theory the logical concept of "Activity" is what people do, so that Activity Theory provides a framework suitable for the analysis of everyday human work where information and

communications technologies make a strategic contribution (Hasan, 2002). Activity theory facilitates understanding of team unity, and is important in studying existing groups, whose communication is mediated largely through electronic systems.

2.5 Conceptual Framework

The conceptual framework of this study focused on the relationship between variables that influence the implementation of M-Commerce in Kenya's commercial banks. The independent variables in this study Information Systems (IS) and the dependent variable is m-commerce performance. The hypothesized relationship between information systems and m-commerce performance state that information systems does not significantly influence m-commerce performance in Kenya's commercial banks. The study conceptual framework illustrated in figure 1.

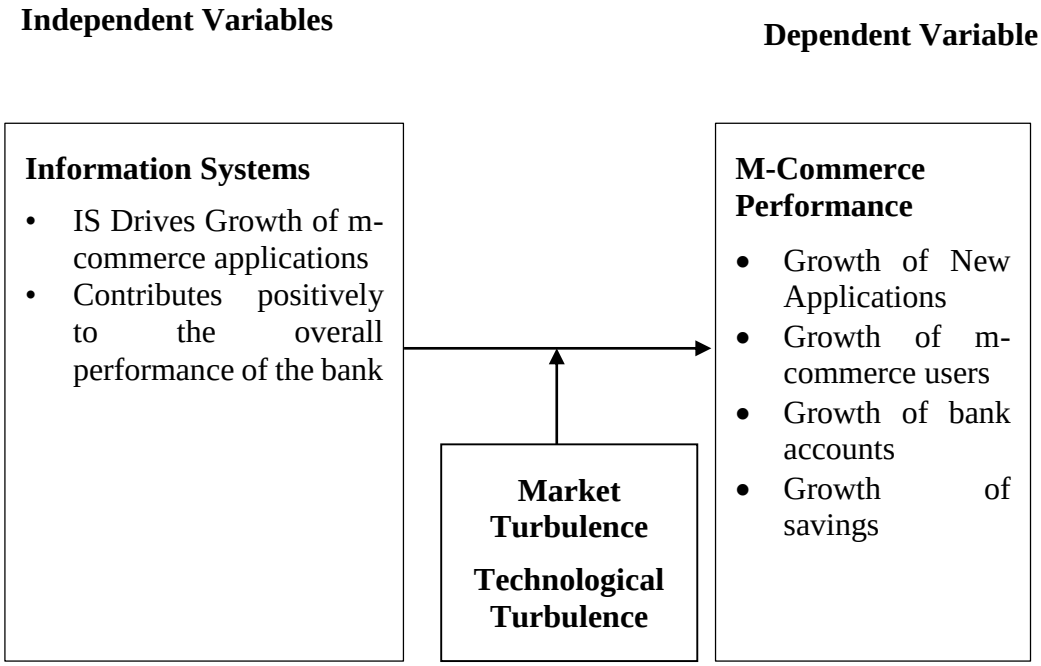

Figure 1: Conceptual Framework

2.6 Information Systems

Information Systems (IS) can be defined as a group of components in an organization that interact to produce information that support the businesses achieve their goals and objectives (Kroenke, 2011). According to Kroenke (2011) the components of an information system include computer hardware, software, data, procedures and people.

Information system in the last decade has assumed an increasingly strategic role in organizations. IS helps organizations to conduct their daily activities, provide proper functions and supports decision making (Altameem, Aldrees & Alsaeed, 2014). According to Fisher and Kenny (2000), organizations that have information systems as part of their operations enhance competitiveness and generate business growth and success. Organizations have varying information needs and therefore have different information systems, however they all strive for

competitive advantage through continuous improvements, re-evaluation of the efficiency and effectiveness of their business information system (Chaffey & Wood 2005).

A study undertaken by Olugbode, Elbeltagi, Simmons and Biss (2008), sought to establish impact of implementing new information systems to streamline operations, increase internal efficiency, facilitate sustained growth and increase profitability. The study concluded that information system improved operational processes and efficiency of the company.

A study by Altameem *et al*., (2014), confirmed that in the last 10 years, there has been an increase in recognition of information system and its role in the strategy of organizations. The study avers that information systems can be regarded as a strategic resource in an organization as it provides the following opportunities; competitive advantage, improvement of productivity and performance and enables new ways of managing, organizing and developing new businesses (Altameem *et al*. ,2014). In addition, the study demonstrated that an organization which had a better information system had less problems with their chosen hardware and had smoother and more effective implementation of their plans.

Different factors have transformed the IS from data processing systems to decision support systems, creating the foundation of the new business environment. The transformation of information systems has been stimulated by technological breakthroughs such as the advancements in telecommunications through the internet, the globalization, growth of economies and the rise of competitive digital firms (Munirat, Sanni, & Kazeem, 2013).

Al Meetany (2004), undertook a study on the impact of management information system on the efficiency and effectiveness of the Arab Bank. The study concluded that users of management information systems must have highly skilled and qualified staff to enable them perform effectively in their decision-making and that there was a positive relationship between IS and the bank's profits.

A study by Gharaibeh and Malkawi (2013), on the impact of management information systems on the performance of Jordanian Ministry of Planning, found that there was a strong relationship between systems and performance and in addition, that there was a strong relationship between management information systems and improving performance within governmental organizations.

Chou, Chuang, and Shao (2014) carried out a study using a panel data from 30 Organizations of Economic Cooperation and Development (OECD) countries over a period of 10 years to empirically test the relationship between information systems and Total Factor Productivity (TFP) link. The study findings were that computerization had reshaped the competitive landscape into a network economy with IS-induced externalities that benefited all stakeholders. The results indicated that there was a significant positive association between IS and TFP.

Collaborating the above is a study by Eruemegbe (2015), on the effect of information and communication technology (ICT) on Organization Performance in Banking industry. The findings were that ICT in the banking services had a positive effect in the development and growth of the organization. From the results, it was concluded that ICT leads to efficient and effective performance of banks and leads to competitive advantage and thus increasing banks profitability.

A study by Binuyo and Aregbeshola (2014) on the impact of information and communication technology (ICT) and Information and Communication Technology Cost Efficiency (ICTE) on

commercial bank performance was carried out in South Africa. This was done using a review of existing data (of 22 years) sourced of from Bankscope-world banking. The study conclusion was that it increased return on capital employed and return on assets. The results indicated that the most contribution to performance came from cost efficiency. Their recommendation was that banks should emphasize policies that will enhance proper utilization of existing ICT equipment rather than additional investments. Contrary to this study is one by Monyoncho, (2015), who avers that adoption of technologies had a positive influence on the performance of commercial banks in Kenya. The study recommended that Kenya's commercial banks should continue investing in information systems.

3.0 RESEARCH METHODOLOGY

The study adopted a positivism research philosophy because positivism research philosophy assumes that one can test hypothesis without interfering with the phenomenon itself (Saunders Lewis and Thornhill, (2012). In addition, explanatory research was used. Explanatory research design was used in order to establish causal relationship between information systems and m-commerce performance. The target population, for the study were the 40 licensed commercial banks in operation as at the end of December 2015. The rationale for using all the operating commercial banks was to ensure that all banks' views were represented in the final results. The units of analysis for this study comprise of five managers from different management levels of all the 40 commercial banks in Kenya. The rationale for choosing the selected managers was because they were responsible for the strategy implementation and this team is assumed to have a clear understanding of how strategy implementation would influence M-Commerce performance. In addition, these are the staff that monitor the implementation in their various business units.

4.0 RESEARCH FINDINGS AND DISCUSSIONS

A total of 210 study tools were distributed and 178 were returned which represented 84.76 percent response rate. According to Graham (2005), a response rate above 50 percent of the total sample size is justified for gathering of sufficient data that can be generalized to represent the opinions of respondents in the target population of the study. This study's response rate of 84.76 percent was therefore deemed acceptable. The study sought to investigate the influence of information system on m-commerce performance in Kenya's commercial banks.

The study presented descriptive statistics for information systems and results for factor analysis, correlation, ANOVA and SEM. 89 percent of respondents agree that bank's information system supports the growth of customers and 90 percent of the respondents agreed that bank's information systems contributes positively to the overall m-commerce performance of the bank as illustrated in table 1.

Table 1: Frequency Distribution for Information Systems

No.	Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)
IS3	Bank's information system supports the growth of customers	0	1	10	69	20
IS5	Bank's information system contributes positively to the overall m-commerce performance of the bank	0	1	9	72	18

Factor analysis was used to reduce items of Information Systems influence on m-commerce performance. Information systems influence construct was measured using eight items in order to ensure the construct was factor analyzed to arrive at an appropriate measure. Exploratory factor analysis using PCA with promax rotation revealed that out of the eight items, only two items (IS1 = 0.787, IS5= 0.769) returned factor loadings that were above the acceptable threshold of 0.5.

The study conducted KMO and Bartlett's test for information systems and found KMO sample adequacy of 0.5 which was within the threshold of the accepted 0.5 and Bartlett's Test of Sphericity, with p=0.005, indicating suitability of data for structure detection. The results are presented in table 2

Table 2: KMO and Bartlett's test for Information Systems Influence

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.5
Bartlett's Test of Sphericity	Approx. Chi-Square	8.019
	df	1
	Sig.	.005

Correlation Analysis between Information Systems and M-Commerce Performance

Correlation was used to test the strength of relationship between information systems and m-commerce performance. The correlation results were positively and significantly related with m-commerce performance. The results are presented in table 3.

Table 3: Correlation between Information Systems and M-Commerce

		M-Commerce Performance	Information System
M-Commerce Performance	Pearson Correlation	1	.451**
	Sig. (2-tailed)		.000
	N	178	178
Information System	Pearson Correlation	.451**	1
	Sig. (2-tailed)	.000	
	N	178	178

Chi Square test was used to test the strength of association between Information Systems and m-commerce performance. The results demonstrated that there was a strong association between information system and m-commerce performance. The results are presented in table 4.

Table 4: Chi Square Test on Information Systems Influence

	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	941.573[a]	711	.000
Likelihood Ratio	354.330	711	1.000
Linear-by-Linear Association	36.053	1	.000
N of Valid Cases	178		

a. 798 cells (99.8%) have expected count less than 5. The minimum expected count is .01.

ANOVA test was carried out to test relationship between information systems and m-commerce performance. The results of the study indicated that there was a significant relationship between the two variables. The results are presented in 5.

Table *5:* ANOVA between Information System and M-Commerce Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.044	1	36.044	44.695	.000[b]
	Residual	141.934	176	.806		
	Total	177.978	177			

SEM Results for Influence of Information Systems on M-Commerce Performance – Unmoderated

The study sought to establish the influence of information system on m-commerce performance and tested the following hypothesis.

Hypothesis: There is no significant relationship between information system and m-commerce performance in Kenya's commercial banks.

In order to ascertain the relationship of the construct under study, the path coefficients generated from the SEM was used to determine the direction and strength of the relationship, while t-statistics provided information on the significance of the relationship between information system and m-commerce performance. The path coefficient value was 0.164 indicating that the relationship between information system and m-commerce performance was positive and significant (t = 2.031, p=0.043). In this respect the study rejected the hypothesis. Results are presented in table 6 and figures 2 and 3.

Table 6: Relationship between Information System and M-Commerce Performance

	Path	**Path coefficient**	**Standard Error**	**T - Value**	**P - Value**	**Hypothesis**
Un-moderated	IS -> MC-P	0.164	0.081	2.031	0.043	Supported
Moderated	IS -> MC-P	0.117	0.084	1.403	0.161	not supported
	IS*Market-> MC-P	0.048	0.119	0.4	0.69	not supported
	IS*Technology	0.045	0.126	0.355	0.723	not supported

SEM Results for Influence of Information Systems and M-Commerce Performance – Moderated Path

The direct relationship of IS and M-Commerce performance had a positive regression weights of 0.117, but insignificant (t=0.084 and p=0.161). The relationship between IS and M-Commerce when moderated by Market Turbulence (MT), was found to be positive regression weights=0.048 and statistically insignificant (t=0.4, p=0.69). Moderating IS and MC with

Technological Turbulences, revealed regression weights=0.045, and statistically insignificant (t=0.355, p=0.723). The moderators failed to moderate the variables. The study supported the hypothesis. The results are presented in figures 2 and 3.

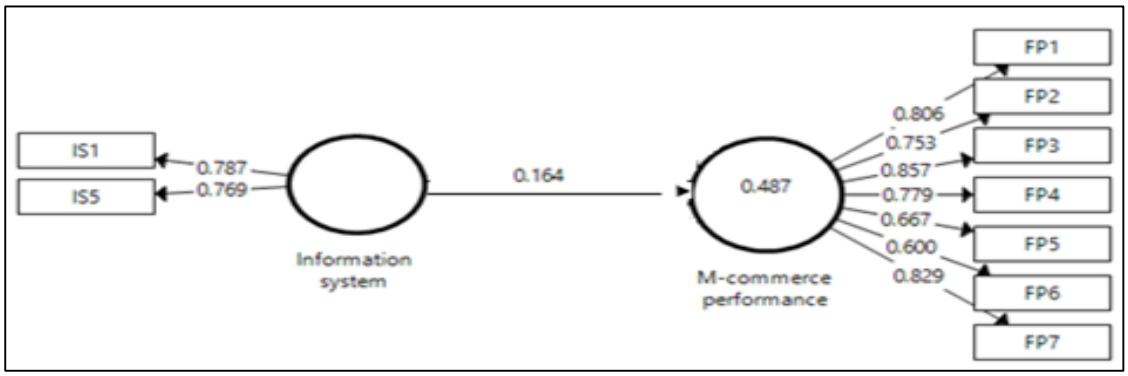

Figure 2: Path Coefficient

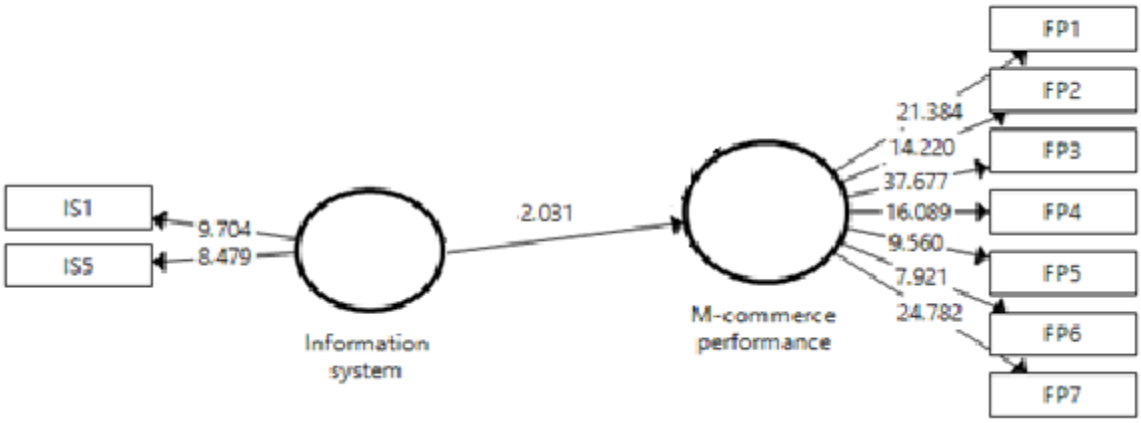

Figure 3: T-Values

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Organization strategies fail because of inadequate strategy implementation and not because of insufficient formulation. Strategy implementation factors are seen as the drivers of excellent performance of m-commerce in commercial banks in Kenya, and as such this calls for better understanding of strategy implementation. Most of the work done in strategy and m-commerce has been in the area of customer adoption of m-commerce both locally and globally. This study therefore is adding knowledge into the growing need to understand strategy implementation and m-commerce performance in Kenya. The study developed parameters that can be used to evaluate m-commerce performance.

The study results demonstrated that information systems drive the bank's growth of new M-Commerce applications, that the bank's information systems support the growth of customers

and thus contributes positively to the overall m-commerce performance of the bank. The study found that the correlation between information systems and m-commerce performance for the unmoderated model to be positive and statistically significant. The findings mean that information systems drive the bank's growth in m-commerce. It means that the information systems influence on strategy implementation is significant because information system is a single factor that links all elements in banks together from the people to operational activities. Information systems facilitates and aids in attaining efficient decision making in banks.

5.2 Recommendations

The study recommends that banks need to advance their agility level by improving on information systems that will make bank operations efficient and highly effective to meet the constant dynamic changes in the market. This would be achieved by enhancing current information systems or adopting new information systems that would facilitate the provision of services and the speed of the adoption should be expected to grow faster because of the current technological expansion. A critical areas of focus would also be in empowering staff to support m-commerce applications. It is also recommended that banks should integrate the information system activities with the overall strategy of the bank to maximize opportunities presented by the changing technologies.

REFERENCES

Alavi, S., Wahab, A. D. Muhamad N., & Shirai, A. B. (2014). Organic Structure and Organizational Learning as the Main Antecendents of Workforce Agility.*International Journal of Production Research*. 52(21), 6273-6295.

Aliyu, A. A., & Tasmin H. J. B. R. (2012). The Impact of Information and Communication Technology on Banks' Performance and Customer Service Delivery in the Banking Industry. *International Journal Latest Trends Finance, Economics and Science*. 2(1),80-90.

Al Meetani, Y. A. (2004), the impact of management information systems to improve the efficiency and effectiveness of the Jordanian Commercial Banks: A Case Study of Arab Bank, Master, Al al-Bait University, Faculty of Economics and Administrative Sciences, Jordan.

Barney, J. B. (2002), Gaining and Sustaining Competitive Advantage (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

Binuyo, O. A., & Aregbeshola, A. R. (2014). The Impact of Information and Communication Technology (ICT) on Commercial Bank Performance: Evidence from South Africa. *Problems and Perspectives in Management*, 12(3), 59-68.

Chou, C. Y., Chuang, C.H. H., & Shao M. B. B. (2014). The Impacts of Information Technology on Total Factor Productivity: A Look at Externalities and innovations.

Davis, J. H., Schoorman, F.D., & Donaldson, L. (1997). *Toward a Stewardship Theory of*

Management, Academy of Management Review, 22(1), 20-47.

Eruemegbe, O. G. (2015). Effect of Information and Communication Technology on Organization Performance in the Banking Sector. *International Journal of Research in Engineering & Technology*. 3(4), 13-22.

Gharaibeh, S.M.A.AL & Malkawi N.M. (2013). The Impact of Management Information Systems on the Performance of Governmental Organizations- Study at Jordanian Ministry of Planning. *International Journal of Business and Social Science*, 4(17), 101-109.

Gaur, A., & Ondrus, J. (2013). The Role of Banks in the Mobile Payment Ecosystem: A Strategic Asset Perspective.

Hasan, H. (2002). Relating Knowledge Management to Business Strategy by means of an Activity Theory Framework. Department of Information Systems University of Wollongong, Wollongong, Australia.

Hough, J., Thompson, Arthur A. Strickland, A. J. III and Gamble J.E. (2011). Crafting and Executing Strategy. Creating Sustainable High Performance in South Africa (2nd, Ed). McGraw-Hill.

Hrebiniak, L. G. (2006). Obstacles to effective strategy implementation. *Organizational Dynamics,* 35 (1), 12-31.

Chaffey, D. and Wood, S. (2005) Business information management: Improving performance using information systems, Pearson Education Limited, Essex.

Insights, M. (2014). M-Commerce: Building the Revenue Opportunity for Banks. London, UK: Monitise.

Laffont, Jean, J., David M. (2002). The Theory of incentives: The Principal Agent Model. London, Uk; Pinceton, Princeton University Press.

Kroenke, David M. (2011), Using MIS, third edition, New Jersey: prentice hall.

Munirat, Y., Sanni, I.M, & kazeem, A. O. (2014). The Impact of Management Information System (Mis) on the Performance of Business Organization in Nigeria. International *Journal of Humanities Social Sciences and Education (IJHSSE)* 1(2), 76-86.

Naranjo-Gil, D., Hartmann, F. (2006). How Top Management Teams Use Management Accounting Systems to Implement Strategy. *Journal of Management Accounting Research,*18(1), 21-54.

Nardi B., A. (1999). Studying Context: A comparison of Activity Theory, Situated Action Models, and Distributed Cognition.

Olugbode, M., Elbeltagi, I., Simmons, M. & Biss T. (2008). The Effect of Information Systems on Firm Performance and Profitability using a Case-Study Approach. *Electronic Journal Information Systems Evaluation,* 11(1), 11-16.

Olson, E. M., Slater, S. F., & Hult, T. M, (2005). The Importance of Structure and Process

to Strategy Implementation, *Business Horizons*, (48), 47-54.

Saunders, M., Lewis P., & Thornhill A. (2012). Research Methods for business students, (6th.ed.) London, UK: Pearson.

Shekhar, K. C. (2005). Banking Theory and Practice (19th ed.), New Delhi, India: Vikas Publishing House PVT Ltd.

Vroom, V. H. (1964). Work and motivation. San Francisco, CA: Jossey-Bass.