

Realizing Business Value from Information System

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Abstract

The purpose of this study is to help managers to create a better understanding of their employees towards organizational goals and achievement, so that employees may realize information system benefits which will lead to improve organizational performance. The study intended to explore the moderating role of Line of Sight (LoS) between Information System Benefits (strategic benefits, informational benefits and transactional benefits) and Organizational Performance. A cross sectional field survey was conducted which was administrated personally. The survey was based on a sample of 256 full time employees from private and semi-government organization. The results show that information system is positively related to organizational performance and line of sight is also positively associated with organizational performance. However, the hypothesized relationships of strategic and informational IS benefits with organizational performance are not confirmed. The results of the study indicate that line of sight moderates the relationship information system benefits and perceived organizational performance. Managerial implications and future research directions are given at end.

Introduction

The impact of information systems on organizational performance has been a major subject of research among most of the scholars (Melville, Kraemer & Gurbaxani, 2004). The scholars in this line of research have focused on the organizational benefits (strategic, informational and transactional) of the information systems which ultimately has an impact on organizational performance (Weill, 1992). Information system creates business value by delivering three types of organizational benefits (Mirani & Ledger, 1998). The IS benefits has provided strong evidence to the concept that organizational performance is strongly influenced by IS benefits. Line of Sight (LOS) is a recent domain of research, which has received special attention in the organizational behavior and strategic researches. Line of sight has become a vital variable in the determination of organizational performance. Line of sight and organizational performance is widely discussed in strategic management domain. It has been revealed that line of sight is the predictor of organizational performance (Steers & Porter, 1991, Colvin & Rosewell, 2007). On the bases of the existing relationship between these variables, it can be inferred that both variables can be experienced currently and simultaneously in the organizational context. The issue arises about the moderation of line of sight between information system and organizational performance. Keeping this as the focus of the research, the moderating effect of line of sight on IS-performance relationship is explored in this study. The study is an effort to discuss and explain the effects of information system benefits and line

of sight on organizational performance. More precisely, this study investigated the moderating effect of line of sight between information system benefits and organizational performance. Information system usage has significance impact on the performance of information system hence the line of sight of the employees can be considered an important element to effect information system usage. Information system is being manipulate by the human resource (employees) of the business organization how their line of sight affects the organizational outcome is the focus of the study. This study is an attempt to help managers to create a better understanding of their employees towards organizational goals and achievement, so that employees may realize the benefits of information system which will lead to improve organizational performance

Theoretic Framework

The impact of information systems on organizational performance has been a major subject of research among most of the scholars (Melville, Kraemer & Gurbaxani, 2004). Organizational employees while using different types of information systems might go through various classifications of the received information which may lead to change in the user thinking style as well as their behaviors which have an impact on not only information system' performance but also on the organizational performance (DeLone & McLean, 1992; Mason, 1978; Lucas, 1975). The scholars in this line of research have focused on the organizational benefits (strategic, informational and transactional) of the information systems which ultimately has impact on organizational performance (Weill, 1992). Information system creates business value by delivering three types of organizational benefits (Mirani & Ledger, 1998). These benefits has provided strong evidence to the concept that organizational performance is strongly influence by IS benefits.

Strategic Benefits of Information System

Organizations are working in highly dynamic business environments now days and managers require comprehensive information to respond to the needs of the dynamic market of the global business environment. Managers require vast and comprehensive information to achieve the strategic objectives (Kaplan & Norton, 1996). Information systems provide variety of strategic benefits to the managers specially MIS and ESS. Information systems enhance competitiveness or create strategic advantage, provide business alignment towards organizational goal, provide the benefits in order to compete with the competitors provide new products and services to customer and enable the organization to respond more quickly to change (Mirani & Lederer, 1998; Parker & Benson, 1987). Strategic applications of Information systems have tremendous effect of organizations success or failure by influencing and shaping a business strategic goals and objectives (Choe, 2003). Strategic benefits of information systems have positive impact on organization outcomes (Zaidi-Chourou & Bouzidi, 2010). So on the basis of above review of literature; it can be argued that strategic benefits of the information system will positively influence perceived organizational performance of the employees.

H1: Strategic benefits are positively associated with perceived organizational performance.

Informational Benefits of Information System

Information system helps in faster delivery of reports, make communication easier and faster, provide accurate information, and provide various formats for the better understanding of the data (Rivard & Kaiser, 1989). Official work of employees is based on information delivery, communication and IS facilitates them in a promising way. Therefore, organizational productivity is improved by improving organizational communication (Culnan & Bair, 1983). So on the basis of above review of literature; it can be argued that informational benefits of the information system will positively influence perceived organizational performance of the employees.

H2: Informational benefits of information system are positively associated with perceived organizational performance.

Transactional Benefits of Information System

Managers need extensive information that enable or help managers to have a clear insight about the transformational processes within organization (Fuller-Lover & Cooper, 1996; Naranjo-Gil, 2009). Information system save money by reducing travel cost, work force, and communication cost (Smith, 1983; Mirani & Lederer, 1998). As a result organizational productivity is enhanced on the term of ROI and due to developed software IS capable of monitoring accurately the financial as well as operational transactions of the organizations. So on the basis of above review of literature; it can be argued that transactional benefits of the information system will positively influence perceived organizational performance of the employees.

H3: Transactional benefits of information system are positively associated with perceived organizational performance.

Information System Benefits and Organizational Performance

The concept behind information technology investments is to improve organizational performance. Organizational performance is usually measured in terms of productivity and profitability. After handling the IT productivity paradox it is evident that organizational performance is increased in terms of efficiency, customer satisfaction, market share, market growth, customer satisfaction, return on investment (ROI) and sales growth (Kears & Sabherwal, 2007). According to King & Toe (1997) organizational performance is positively affected by information system effectiveness. Although, the research showed a significant relationship between the information system contributions towards the organizational performance but in this research business planning and information planning integration were highly focused. Empirical research has not yet established a direct significant positive relationship between IT / IS investments and organizational profitability (Hu & Plant, 2001; Tam, 1998). However, it is suggested by Sin (2001) that IT / IS must be studied under the influence of other factors. Therefore, manager's perceptions, users involvement, organizational structure, IS integration, IS alignment, etc to understand the information systems on organizational performance. So on the basis of above review of literature, it can be argued that

strategic, informational and transactional benefits of the information system will positively influence perceived organizational performance of the employees.

H4: Information system benefits are positively associated with perceived organizational performance.

Line of Sight (LOS) and Organizational Performance

Now if we talk about the employees of 21st century we must keep in mind that employees are not just employees they are the business partners or business associates of the organizations. It is very important that employees have the clear perspective of their position as the business partners of the organization. For this purpose the employees' line of sight must be aligned with the organizational goals and objectives. Therefore directing or setting the accurate frame of mind of the employees towards better understanding of the organizational strategies and objectives ultimately lead to shaping or aligning employees' behaviors and attitudes (Colvin & Rosewell, 2007). These aligned attitudes and behaviors may result in effective performance. Employees will be able to perform at higher levels if they clearly analyze that their attitudes, acts and behaviors are contributing to the needs, goals and objectives of the organization (Steers & Porter, 1991). So on the basis of above review of literature, it can be argued that line of sight of the individual employees will enhance the overall motivational level and productivity level of the employees, hence will positively influence perceived organizational performance of the employees.

H 5: Line of sight is positively related to perceived organizational performance.

Line of Sight (LoS) moderates between IS and Perceived Organizational Performance

Organizational employees while using different types of information systems might go through various classifications of the received information which may lead to change in the user thinking style as well as their behaviors which have an impact on not only information system' performance but also on the organizational performance (DeLone & McLean, 1992; Mason, 1978; Lucas, 1975). Organizations adopt information systems to bring transparency in decision making process. Data transparency has dissolved organizational hierarchy and has given each employee the authority to access organizational data. In this way companies motivate and empower their business partners or employees, for example: mySieble which was initially created by Siebel System is information system software through which employees could log onto mySiebel to get access to company, market and competitors information, thus up to date information help to employees to align individual behavior with the organizational goals and objectives (Pasmore, 2010). Therefore, information systems provide a lot of knowledge to the employees and the informational benefits of IS increase the employee's understanding of latest happenings about not only inter-organizational activities but also the market trends and competitors position. This vast knowledge sharing activities can tremendously affect the line of sight of employees because through information systems employees are empowered, motivated and clearly understand the importance of their work in order to achieve, enhance or maintain organizational goals and objectives. As discussed before that information system usage has an effect on the value creation process of information system and ultimately influence perceived organizational performance. Hence employee's line of sight (LOS) may affect information

system usage and affect the value creation process of information systems which ultimately lead to influence organizational performance. So on the basis of above review of literature, it can be argued that line of sight of the individual employees will enhance the overall motivational level and productivity level of the employees, hence will positively influence the all three types of information system benefits and perceived organizational performance of the employees. It is also expected that line of sight will moderate the overall information system and perceived organizational performance by enhancing the normal magnitude of effect between the two variables under investigation in this study. Hence following hypotheses are proposed to test the phenomenon.

H 6: Line of sight moderates the relationship between strategic benefits and perceived organizational performance.

H 7: Line of sight moderates the relationship between informational benefit and perceived organizational performance.

H 8: Line of sight moderates the relationship between transactional benefits and perceived organizational performance.

H 9: Line of sight moderates the relationship between overall information system and perceived organizational performance.

Data Collection and Measures

The study sample consisted of personnel working in 4 well-recognized organizations of Pakistan. The institutions incorporated private sector and public sector universities and multinational banks. It was ensured that all the respondents were using information system technology. This made the data appropriate and from relevant and reliable source. Overall, out of the 400 questionnaires, 256 were returned. After removing 36 inappropriately filled or partially filled questionnaires and ensuing in 220-paired useable responses resulting in effective response rate of 55 %. About 70 % of the respondents had 16 years of education. Most of the respondents were at supervisory and Managerial level. All responses were acquired through self-report measures. Responses on organizational performance and IS benefits were acquired on 7-point likert-scale while responses on line of sight (LoS) were acquired on 5-point likert-scallle which is adopted as the validated scale by Armstrong & Foley, 2003. The alpha reliability on data collected in this study was ($\alpha = 0.88$) for 3-items of line of sight (LoS) scale. To measure Information System (IS), a 33-item measure by (Mirani and Lederer, 1998) is adopted and reduced to 25 items for this study. The alpha reliability for overall information system was found to be ($\alpha = 0.92$). Organizational performance was measured on the basis of the perceptions of the employees. The items used for perceived organizational performance were taken form the study of Green (2002) which was based on 7-item scale for the measurement of the organizational performance (perceived). The reliability for performance in current data was ($\alpha = 0.92$). One-way analysis of variance is use to control employees' age which showed significant impact on outcomes, and the moderator variable perceived line of sight (LoS).

Results

Correlation results revealed tha informational system is positively correlated with organizational performance ($r = .29, p < 0.05$). Line of sight is positively correlated with organizational performance ($r = .48, p < 0.000$). According to the first hypothesis of the study, regression results showed ($\beta = -.10, \text{ns}$) and ($\Delta R^2 = .29$). This result revealed no significant support for this hypothesis. According to the second hypothesis, regression results showed ($\beta = .084, \text{ns}$) and ($\Delta R^2 = .29$). It explained 29% unique variance in perceived organizational performance. Results revealed no significant support for this hypothesis. In hypothesis three of our study, regression results showed ($\beta = .28, p < 0.05$) and ($\Delta R^2 = .03$) it explained 3% unique variance in org. performance. So this hypothesis proved to be true. In fourth hypothesis, regression results showed ($\beta = .37, p < 0.05$) and ($\Delta R^2 = .015$) it explained 1.5% unique variance in perceived organizational performance. So this hypothesis proved to be true. As per the hypothesis five in our study, Regression results showed ($\beta = .50, p < 0.001$) and ($\Delta R^2 = .29$). It explained 29% unique variance in perceived customer trust. So this hypothesis is proved by these findings.

As shown in Table 3, according to the sixth hypothesis of our study, regression results showed ($\beta = .16, \text{ns}$) and ($\Delta R^2 = .006$). It explained 0.6% unique variance in perceived organizational performance. Results revealed no significant support for this hypothesis. According to the seventh hypothesis, regression results showed ($\beta = .10, p < .001$) and ($\Delta R^2 = .003$). It explained 0.3% unique variance in perceived organizational performance. So this hypothesis proved to be true. In hypothesis eight of our study, regression results showed ($\beta = .25,$

$p < 0.000$) and ($\Delta R^2 = .014$) it explained 1.4% unique variance in perceived organizational performance. This hypothesis proved to be true. In hypothesis nine regression results showed ($\beta = .20, p < 0.001$) and ($\Delta R^2 = .006$) it explained 0.6% unique variance in perceived organizational performance. So this hypothesis proved to be true.

Table 1: Multiple Moderated Regression (MMR) Analysis of Information System and Line of Site on Organizational Performance

Predictors	Org. Performance		
	B	R ²	ΔR ²
Main effects of Information System			
Step 1			
Control Variables		.074	
Step 2			
STB	-.10	.369	.295
IB	.084	.369	.295
TB	.285*	.369	.03*
IS	.372*	.153*	.015*
LOS	.504**	.369**	.295**
Step 3			
STBxLOS	.164	.263	.006
IBx LOS	.109**	.299	.003**
TBx LOS	.252***	.374	.014***
ISx LOS	.203**	.309	.006**

N = 220. Age and Gender were controlled in analysis and used as control variables, ***Correlation is significant at the .000 level (2-tail ** Correlation is significant at the .001 level (2-tailed), * Correlation is significant at the .05 level (2-tailed)

Conclusion

The preceding findings, showed a bit encouraging support for the proposed hypotheses in this research. Among four hypotheses related to types of information system and organizational performance and over all information system influence on perceived organizational performance. All the four hypotheses were accepted by showing consistent results with previous literature on information system and perceived organizational performance. The remaining hypothesis of the link between line of sight and perceived organizational was also significantly supported by the results of this study showing consistent findings with literature of line of sight. The important hypothesis in the study was concerning notion that line of sight has moderating influence between the all three types of information system and perceived organizational performance. These hypotheses were significantly supported from the findings of this study. So it gives a great insight to the scholars in the field of information system, researchers of strategic management and organizational behavior as well as human resource and technology management. If an individual is clear about his or her contribution towards organizational goals and performance and also aware of the contribution in over all success of the organization. This connection of line of sight will play a vital role in reaping out the maximum benefits from any information system or technology being implemented in the organization. Consequently, it will enhance the perceived organizational performance of the employees which will ultimately lead towards enhanced level of affiliation, commitment and maximum utilization of technology in the organization. This proved moderation effect of line of sight will enhance the level of perceived organizational performance and hence depicting a positive image of the organization in the mind of the employees. This awareness of goals and contribution will also help employees to adopt new technological changes in the organization. This study provides insight for CEO's and manager of technology and change in the organization that they can use training as a tool to clear the line of sight of the employees. While implementing any change or improving the information system or managing technology with in the organization, this clarity of line of sight may play a vital role to successful adoption of technology and it will help organizations to successfully implement and improve their information system and for improvement of organizational performance. As a very clear link between perceived organizational performance by the employees and actual performance of the organization managers can take benefits from this study to achieve effectiveness and efficiency in all programs.. The basic limitation of the study is cross sectional nature of study design and perceived organizational performance has been taken into account instead of actual organizational performance. Future research should look into this issue by determining some financial indicators to measure actual performance of the firms along with information system and line of sight combination.

References

- Choe, J., (2003). The effect of environmental uncertainty and strategic applications of IS on a firm's performance. *Information and Management*, 40, 257-268.
- Colvin, A. J. S. & Roswell, W. R. (2007). The problem of action and interest alignment: Beyond Job requirements and incentive compensation. *Human Resource Management Review*, 17, 38-52

- Culnan, M., J. & Bair, J., H.(1983). Human communication needs and organizational productivity: The potential impact of office automation. *Journal of the American Society for Information Science*, 34, 215-221.
- DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information Systems Research*, 3(1), 60-95.
- Fuller-Love, N. & Copper, J. (1996). Competition or cooperation? Strategic information management international health service : A case study of the Ceredigion NHS trust. *International Journal of Information Management*, 16(3), 219-232.
- Hu, O. and Plant, R. (2001). An Empirical Study of the causal relationship between IT investment and firm performance. *Inf. Resour. Manage. J.*, 14, 15–26.
- Kaplan, R. S., & Norton, D. S. (1996). Using the scorecard as a strategic management system. *Harvard Business Review*, 75–85.
- Kearns, G. S. and Sabherwal, R. (2007). Antecedents and consequences of information systems planning integration. *IEEE Transactions on Engineering Management*, 54(4), 628-643.
- King, W. & Teo, T. S. H (1997). Integration Between Business Planning and Information Systems Planning: Validating a Stage Hypothesis, *Decision Science*, 28, 279-308.
- Lucas, H. C., Jr. (1975). Performance and the use of an information system. *Management Science*, 21(8), 908-919.
- Mason, R.O. (1978). Measuring information output: A Communication systems approach. *Information & Management*, 1(4), 219-234.
- Melville, N., Kreamer, K. & Gurbaxani, V. (2004). Review: Information Technology and organizational performance: An Integrative Model of IT Business Value. *MIS Quarterly*, 28, 283-322.
- Mirani, R. & Lederer, A.L. (1998). An instrument for assessing the organizational benefits of IS projects. *Decision Sciences*, 29 (4), 803-838.
- Naranjo-Gil, D. (2009). Management information systems and strategic performances: the role of top team composition. *International Journal of Information Management*, 29, 104-110.
- Parker, M. M., & Benson, R. J. (1987). Information economics: An introduction. *Datamation*, 33(23), 86-96.
- Pasmore, A., Woodman, W. W. & Shani, A. B. (2010). Research in organizational change and development, *Emerald Group Publishing*, 18, 13
- Rivard, E., & Kaiser, K. (1989). “The benefit of quality IS”. *Datamation*, 35(2), 53-58.
- Shin, N. (2001). The impact of information technology on financial performance: The importance of strategic choice. *Eur. J. Inf. Syst.*, 10, 227–236.
- Smith, R. D. (1983). Measuring the intangible benefits of computer-based information systems. *Journal of Systems Management*, 33(9), 22-27.
- Steers, R. M. and Porter, L. W. (1991). Motivation and Work Behavior. *McGraw Hill*, New York, NY.
- Tam, K. Y. T. (1998). The impact of information technology investments on firm performance and evaluation: Evidence from newly industrialized economies. *Information System Research*, 9, 85–100.

- Weill, P. (1992). The relationship between investment in information technology and firm performance: A study of the valve manufacturing sector. *Information Systems Research*, 3(4), 307-333.
- Zaidi-Chourous, S. and Bouzidi, L. (2010). Information usefulness in an information system: performance at the strategic level of the organization, *IBIMA Publishing Communications of the IBIMA*.