

## INFORMATION COMMUNICATION TECHNOLOGY ADOPTION AND WORK VALUES AMONG MIDDLE LEVEL ACADEMIC MANAGERS IN SELECTED PRIVATE AND PUBLIC UNIVERSITIES IN NAIROBI COUNTY, KENYA

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### ABSTRACT

The study investigated the relationship between information technology adoption and work values among middle level academic managers in selected private and public universities in Nairobi County. The null hypothesis of no significant relationship between information technology adoption and work values among middle level academic managers was tested. This study also determined the level of information technology adoption as well as the level of work values in these universities, the study also sought to establish if there is a significant relationship between information technology adoption and work values. Descriptive correlation design was used in this study, from the analysis of the means and the pearsons correlation coefficient, the findings revealed that there is low level of information technology adoption in the universities, fair levels of work values was also discovered. The study also revealed a significant positive relationship between information technology adoption and work values. The study recommended that Universities should comprehensively respond to change by embracing innovation technology adoption. The study further recommended that university management should review their work environment policies so as to align their employees work values to their corporate strategy subsequently improving their productivity.

**KEYWORDS:** Information Technology Adoption, Good Innovation Practices

### INTRODUCTION

"Innovation" is broadly defined as any change in structure, design, products, or processes in which there is a definable new element introduced into the system; the process is essentially the same for technologies of all degrees of "hardness" although the specifics may vary. The classic definition of the term "adoption" is found in Rogers with Shoemaker (1971): "Making full use of a new idea as the best course of action available". The adoption of innovation is very beneficial to an organization in general and employees in particular. Information technology Adoption therefore, refers to a technology-enabled process and/or products of such a process that bring into the marketplace new products, processes or services representing a significant departure from the previous state by the middle level academic managers included in this study. People's values play an important role in their behavior, attitude, and motivation in their life. Values are regarded as a complicated system that comprises many specific value components, that is, subsystems. Work values are considered one such subsystem, particularly those associated with judgment toward the desirability of work rewards and the work. Work values are defined as "beliefs about the desirability of specific outcomes of working" (Hatrup, Mueller & Jones, 2007, p. 481), and they "occupy a more central place in a person's cognitive system and may be

more closely linked to motivation" (Fields, 2002, p. 263). Focusing on workers work values is crucial when considering effective ways to encourage them to work harder and enjoy their workplaces. Work values are sometimes classified into several categories; the typical dimensions are extrinsic and intrinsic (Gahan & Abeysekera, 2009; Hegney, Plank & Parker, 2006). Extrinsic work values are defined as "the traditional pursuit of success by advancing up the organizational hierarchy to achieve prestige, status, and high income" (Watts, 1992, p. 51). In contrast, intrinsic work values are referred to as the "employees natural desire to actualize, develop and grow at the work place (i.e. self development), to build meaningful and satisfying relationships with colleagues (i.e. affiliation) and to help people in need (i.e. community contribution)" Although some researchers adopt the more complicated dimensions of work values, as reviewed by Yamazaki (2011), extrinsic and intrinsic work values are admitted to be the most basic classification.

## LITERATURE REVIEW

### Information Technology Adoption

Contemporary firms are making significant investments in information technology to align business strategies, enable innovative functional operations and provide extended enterprise networks. These firms have adopted information technology to foster changes in managing customer relationships, manufacturing, procurement, the supply chain and all other key activities (Agarwal & Sambamurthy 2002) and to enhance their competitive capabilities (Sambamurthy *et al.* 2003). A number of information systems researchers have posited information technology as an important ingredient of innovation development (e.g., Corso & Paolucci 2001; Dewett & Jones 2001). Firms implement information technology to enhance and/or enlarge the scope of their products and services.

As many innovation activities involve adding new services, expanding existing ones and/or improving the service delivery process, the success of an organization hinges on how well it implements its service innovation (Berry *et al.* 2006) to create new markets. Good innovation practices help enhance a firm's competitive advantage (Afuah 1998). However, there is little theoretical work on the development of nomological relationships between information technology, and work values. Systematic empirical investigations of these relationships are also scarce and no dominant pattern has emerged (Preissl 1999). To address these gaps and advance understanding of information technology adoption and specific service innovation practices, there is need to explore work values as a coordination mechanism (Galbraith 1973), which has led to changes in innovation-related activities. Within social systems, organizational factors present an important dimension of inquiry where Employees involvement in innovations are concerned. Rogers (1995) defines an organization as: "a stable system of individuals who work together to achieve common goals through a hierarchy of ranks and a division of labor" (p. 403). Rogers and Jain (1968) describe the growth of an organizational perspective in diffusion research: "Organizational theory, systems analysis, structural effects, and matrix multiplication," once "beyond the pale," have gained acceptance in research.

An important aspect of innovation adoption in an organization is its "makeup and norms" (Rogers & Jain, 1968, p. 8). For example, Organizations that are more cosmopolitan may differ from non-cosmopolitan in terms of having a faster rate of innovation diffusion (Henrichsen, 1989; Rogers & Jain, 1968). Leadership style is another relevant variable. Authoritarianism in the decision-making structure is negatively correlated with Innovation diffusion, whereas a more open leadership style based on the "principle of supportive relationships" (Likert, 1961, p. 103, in Rogers & Jain, 1968, p. 22) contributes to "full and efficient" diffusion. Rogers (1995) and Fullan (1993) both suggest that a more convergent-style of

Organizational leadership, connected across levels, facilitates diffusion. With regard to the potential of administrators in educational organizations to serve effectively as change agents, Preissl (1999) suggests that they are more likely to be gatekeepers while others like Hyde and Hsieh (2010) suggest that being a change agent is fundamental to the job description of education Managers. The presence of adaptive units in an organization has been also correlated with more efficient (Rogers & Jain, 1968, p. 24). In addition, the size of the educational organization may also be a key factor (Rogers, 1995): "Larger organizations are more innovative" (Rogers, 1995, p. 379). Finally, staff characteristics like morale are important factors in educational diffusion.

**Work Values**

Work values have been found to influence various work outcomes. For example, Kiddon (1978) demonstrates that work values, defined as the Protestant Ethic of the worker, have a significant relationship with commitment. Wang, Hyde, and Hsieh (2010) also indicate that work values significantly influence normative commitment and that turnover intention mediates pay satisfaction. In contrast to the almost consistent findings of the positive effect of intrinsic work values on desirable work outcomes, some researchers found that extrinsic work values had no effect on desirable outcomes, or a positive effect on undesirable work outcomes. For example, watts (1992), reveal that extrinsic work values are associated with negative work outcomes (i.e., higher emotional exhaustion, short-lived satisfaction after successful goal attainment, and turnover intention). Plank & Parker, 2006 examines the effects of both extrinsic and intrinsic work values and shows that only the latter are related to positive career development. Moreover, using data collected from Japanese workers, Berry *et al.* (2006) also reveal that extrinsic rewards have a negative effect on various work outcomes, while most intrinsic work values almost consistently have positive influences.

**Null Hypothesis**

The study tested a null hypothesis of no significant relationship between Information technology Adoption and Work values among Middle level academic managers in selected private and public universities in Nairobi County, Kenya.

**Methodology**

Descriptive correlational survey design was used in this study. Data on information Technology adoption was collected using an a standardized questionnaire from Chen and Tsou (2007), A researcher devised questionnaire, following the reviewed literature on indicators of work values was used to collect data on work values. Out of 3,810 middle level academic managers, a sample size of 362 was arrived at using slovenes formula. By simple random sampling, the researcher selected middle level academic managers serving in the capacity of a dean, a head of department or their equivalents. The validity of the questionnaire on work values was tested using content validity index and it was 0.82 using means, the levels of information technology adoption and the levels of work values were ascertained, while the hypothesis was tested using pearsons linear correlation coefficient.

**FINDINGS**

**Table 1: Level of Information Technology Adoption**

Category	Mean	Interpretation	Rank
<b>Information Technology Infrastructure (ITI)</b>	2.51	High	1
University has allocated a generous budget for purchasing information technology hardware			

Table 1: Contd.,

University has embraced sophisticated internet applications	2.27	Low	2
University has allocated a generous budget for purchasing information technology software	2.23	Low	3
University has emphasized information technology staffing and training	2.18	Low	4
<b>Average Mean</b>	<b>2.29</b>	<b>Low</b>	
<b>Strategic Alignment (SA)</b>			
Your information technology capability has supported organizational strategies that strengthen client service	2.48	Low	1
Your information technology applications have supported organizational strategies to improve product/service offerings	2.39	Low	2
Your information technology applications have supported organizational strategies to improve process management	2.30	Low	3
Your information technology projects have been implemented in compliance with your organizational strategies	2.25	Fair	4
<b>Average Mean</b>	<b>2.35</b>	<b>Low</b>	
<b>Organizational Structure (OS)</b>			
Has been changed to help managers make more timely decisions	2.35	Low	1
Has been changed to enhance employee empowerment	2.34	Low	2
Has been changed to increase operations mobility	2.27	Low	3
Has been changed to enable interdepartmental (cross-function) integration	2.20	Low	4
Has been adjusted for new business practices	2.19	Low	5
<b>Average Mean</b>	<b>2.27</b>	<b>Low</b>	
<b>(Individual Learning IL)</b>			
Your university has provided sufficient training while implementing new information technology systems and applications	2.51	High	1
Your employees have shown little resistance to adopting new information systems and applications	2.30	Low	2
Your employees have been able to adopt new information technology application for their work	2.28	Low	3
Your employees have been able to learn new information technology quickly	2.27	Low	4
Your employees have been able to innovate new ideas and approaches to work effectively by adopting new information technology applications	2.20	Low	5
<b>Average Mean</b>	<b>2.27</b>	<b>Low</b>	
<b>Overall Mean</b>	<b>1.83</b>	<b>Low</b>	

Mean Range	Response Mode	Interpretation
3.26-4.00	Strongly Agree	Very High
2.51-3.25	Agree	High
1.76-2.50	Disagree	Low
1.00-1.75	Strongly Disagree	Very low

Table 1; presents the various interpretations of innovation adoption with respect to Information technology adoption, namely; Information technology infrastructure (ITI), Strategic alignment, organizational structure (OS), Individual Learning (IL). With reference to ITI, the fact that the university has allocated a generous budget for purchasing

information technology hardware ranked highest and interpreted as satisfactory with a mean of 2.51, this could be so due to the fact that most universities world over are striving to a acquire computers since it is perceived as a mark of quality. This was followed by the fact that the universities have embraced sophisticated internet applications with a mean of 2.27, that university has allocated a generous budget for purchasing information technology software followed with a mean of 2.23, and finally, the fact that university has emphasized information technology staffing and training with a mean of 2.18 interpreted as fair. The average mean for ITI was 2.29 interpreted as fair.

As pertains to strategic alignment, the fact that information technology capability of the selected universities has supported organizational strategies that strengthen client service was ranked highest with a mean of 2.48, interpreted as fair. This was followed by the fact that information technology applications have supported organizational strategies to improve product/service offerings, with a mean of 2.39. that information technology applications have supported organizational strategies to improve process management ranked third with a mean of 2.30. that information technology projects have been implemented in compliance with the organizational strategies ranked last with a mean of 2.25.

With reference to organizational structure (OS), that for the past few years, the universities organizational structure by adopting new information technology systems and applications; has been changed to help managers make more timely decisions ranked highest with a mean of 2.35, this was followed by has been changed to enhance employee empowerment, then has been changed to increase operations mobility, then has been changed to enable interdepartmental (cross-function) integration, and finally has been adjusted for new business practices with means of 2.34, 2.27, 2.20, and 2.19 respectively. The average mean for OS was rated fair with a mean of 2.27.

In line with Individual Learning (IL), that the university has provided sufficient training while implementing new information technology systems and applications ranked first followed by the employees have shown little resistance to adopting new information systems and applications, then employees have been able to adopt new information technology application for their work, followed by employees have been able to learn new information technology quickly, and finally employees have been able to innovate new ideas and approaches to work effectively by adopting new information technology applications came last. These had means of 2.51, 2.30, 2.28, 2.27, and finally 2.20. The average mean was 2.27, interpreted as fair. Whereas the overall mean for Information technology adoption was 1.83 interpreted as fair. This finding is in agreement with those of Shanon et. al (2007), who found fair levels of innovation adoption with reference to the Canadian heart health kit. They argue that the decision to adopt an innovation is an active and dynamic process with interactions between the individual, situational factors and contextual factors as well as attributes of the innovation itself.

**Table 2: Levels of Work Values**

Category	Mean	Interpretation	Rank
<b>Intrinsic</b>			
You believe that your work enables you to make important contributions to your family	2.60	Satisfactory	1
You enjoy responsibility and autonomy in your work.	2.42	Fair	2
Your work is more challenging	2.36	Fair	3
Your work allows you to be creative	2.33	Fair	4
You reach your full potential at work	2.28	Fair	5
You find your work Interesting	2.23	Fair	6
You like your work because it enables you learn new things	2.20	Fair	7

Table 2: Contd.,

Average Mean	2.34	Fair	
<b>Extrinsic Work Values</b>			
You like your job since it gives you social contacts	3.86	Very satisfactory	1
Your like your job since it gives you time with your family.	2.78	Satisfactory	2
Your work offers you high Pay	2.44	Fair	3
Your work gives you status in the wider community	2.40	Fair	4
You like your work since it has job benefits such as good pay	2.30	Fair	5
You love your work because it has job security.	2.23	Fair	6
Your Job gives you time for hobbies	1.96	Fair	7
<b>Average Mean</b>	<b>2.56</b>	<b>Satisfactory</b>	
<b>Overall Mean</b>	<b>2.45</b>	<b>Fair</b>	

### Legend

Mean Range	Response Mode	Interpretation
3.26-4.00	Strongly agree	Very satisfactory
2.51-3.25	Agree	Satisfactory
1.76-2.50	Disagree	Fair
1.00-1.75	Strongly disagree	Poor

Table 2 shows that work values in terms of extrinsic work values was confirmed positive with a mean of 2.56 interpreted as satisfactory. This was followed by intrinsic work values, rated as fair with a mean of 2.34. The only Item that rated satisfactory under intrinsic work values was the belief that work enables the middle level academic managers make important contributions to their families, with a mean of 2.60. this was followed by six items that all ranked fair and they include; enjoying responsibility and autonomy at work (2.42), work being more challenging (2.36), work allows one to be creative (2.33), reaching full potential at work (2.28), finding work Interesting (2.23), finally, work enabling one to learn new things (2.20).

As pertains to extrinsic work values, liking ones job because it gives social contacts rated very satisfactory with a mean of 3.86. this was followed by liking ones job since it gives time with family, with a mean of 2.78, interpreted as satisfactory. All the remaining items in this construct ranked fair including; work offers high Pay (2.44), work gives the academic managers status in the wider community (2.40), liking work since it has job benefits such as good pay (2.30), loving work because it has job security. (2.23), and finally, Job giving time for hobbies (1.96).

The overall mean however for work values was 2.45, interpreted as fair. These findings are in line with Yutaka et. al (2012) who found a high level of work values among the Japanese seniors. They reiterate that Work values are considered one such subsystem, particularly those associated with judgment toward the desirability of work rewards and the work Journal of International Business and Cultural Studies environment.

Table 3: Relationship between Information Technology Adoption and Work Values

Variables Correlated	r' Value	Sig. Value	Interpretation	Decision on Ho
Information technology adoption vs Work Values	0.59	0.17	Significant relationship	Accepted

Table 3 above shows an  $r'$  value of 0.59 and a significant value of 0.17. This implies a significant relationship at 0.05(2 tailed), revealing a positive relationship between information technology adoption and work values. The null hypothesis was thus rejected leading to a conclusion that information technology adoption in universities is highly desirable so as to facilitate work values.

## CONCLUSIONS

Embracing information technology in universities is a prerequisite in the contemporary higher education setting. Freeman and Kleiner (2000) reiterate that employees and managers are substantial beneficiaries from workplace innovations, and that the benefits for the organizations are moderate at best. The second strand of the literature is more critical towards the benefits for employees. Some claim that firms adopt workplace innovations to increase profits and productivity, while employees bear the cost through increased work intensity, increased job strain, and reduced satisfaction (see e.g. Ramsay et al. 2000).

## RECOMMENDATIONS

- Universities should comprehensively embrace positive innovations such as ICT innovations. Information technology was originally perceived as merely a supporting tool in universities and other educational organizations; however, it has become an important element in the provision and delivery of educational services.
- Organizations should be more responsive in improving and facilitating the working conditions of their employees so as to mitigate circumstances in the work place that could negatively influence their experiences at work specifically with regard to work values- both intrinsic and extrinsic.
- The researchers can embark on a similar study in another research locale with keen selection of rural- based universities.
- The study further recommended that university management should review their work environment policies so as to align their employees work values to their corporate strategy subsequently improving their productivity.

## REFERENCES

1. Afuah, A. (1998). *Innovation management: strategies, implementation and profits*. New York, NY: Oxford University Press.
2. Agarwal, R. & Sambamurthy, V. (2002). *Principles and models for organizing the information technology function*. *Minformation systems Quarterly Executive*, 1(1), 1-16.
3. Berry, L.L., Shankar, V., Parish, J.T., Cadwallader, S. & Dotzel, T. (2006). *Creating new markets through service innovation*. *Sloan Management Review*, 47(2), 56-63.
4. Corso, M. & Paolucci, E. (2001). *Fostering innovation and knowledge transfer in product development through information technology*. *International Journal of Technology Management*, 22(1/2/3), 126-148.
5. Chen J. S and Tsou H.T (2007) *Information Technology adoption for Service Innovation Practices and Competitive Advantage*, *Information Research journal*, Vol.12, No 3, April.

6. Dewett, T. & Jones, G. R. (2001). *The role of information technology in the organization: a review, model and assessment*. *Journal of Management*, 27(3), 313-346.
7. Fields, D. L. (2002) *Taking the Measure of Work: A Guide to Validate Scales for Organizational Research and Diagnosis*, Thousand Oaks, CA: Sage Publishing
8. Galbraith, J.R. (1973). *Designing complex organizations*. Reading, MA: Addison- Wesley
9. Gahan, P. & Abeyssekera, L. (2009). What shapes an individual's work values? An integrated model of the relationship between work values, national culture and self-construal, *International Journal of Human Resource Management*, 20(1), 126–147.
10. Hatrup, K., Mueller, K. & Jones, I. (2007). The effects of nations and organizations on work value importance: A cross-cultural investigation, *Applied Psychology: An International Review*, 56(3), 479–499.
11. Hegney, D., Plank, A. and Parker, V. (2006). Extrinsic and intrinsic work values: Their impact on job satisfaction in nursing, *Journal of Nursing Management*, 14(4), 271–281.
12. Kiddon, A. (1978). Work values and organizational commitment, *Academy of Management Journal*, 21(2), 239–247.
13. Rogers EM: *Diffusion of Innovations*. 4th edition. New York: Free Press; 1995
14. Rogers, E. M. & Shoemaker, F. (1971). *Communication of Innovations*. N.Y.: Free.
15. Rogers, E. M., & Jain, N. C. (1968). *Needed research on diffusion within educational organizations*. (ERIC Document Reproduction Service No. ED 017 740).
16. Fields, D. L. (2002) *Taking the Measure of Work: A Guide to Validate Scales for Organizational Research and Diagnosis*, Thousand Oaks, CA: Sage Publishing.
17. Preissl, B. (1999). Service innovation: what makes it different? Empirical evidence from Germany. In J. S. Metcalfe & I. Miles (Eds), *Innovation systems in the service economy: measurement and case study analysis* (Chapter 7). (pp. 125-147) Boston, MA: Kluwer Academic Publishers.
18. Sambamurthy, V., Bharadwaj, A. & Grover, V. (2003). *Shaping agility through digital options: reconceptualizing the role of information technology in contemporary firms*. *Minformation systems Quarterly*, 27(2), 237-263.
19. Watts, G. A. (1992). Work values, attitudes, and motivations of women employed in administrative support occupations, *Journal of Career Development*, 19(1), 49–63.
20. Yamazaki, Y. (2011). *Soshiki ni Okeru Ishikettei no Shinri*. [Psychology of Decision Making in Organizations]. Tokyo, Japan: Dobunkan Publishing.