Information Technology (IT) Adoption and Work Attitude among Middle level Academic Managers in Selected Private and Public Universities in Nairobi County, Kenya

Tindi Seje Nuru, Nakimuli Amina, Eliezer Nyonsima, Richard Asingwire

Abstract

The Millennium Development Goals (MDGs) which became operational in 2000 were envisaged to be realized by 2015. Several evaluations have shown that many developing countries are likely not to achieve the minimum targets. As such therefore, a study on IT adoption and work attitude of the academic managers would be timely in addressing aspects of the post MDGs challenges. The empirical data from 362 respondents revealed low levels of IT adoption in the universities, good work attitudes and no significant relationship between IT adoption and work attitude. It was recommended that universities should nonetheless respond to change by embracing IT. The study recommended that university management should review their work environment policies to help align their employees’ work attitudes to their corporate strategies subsequently improving their productivity, much as attitude to work may become more favorable even with no adoption.

Keywords: IT adoption, work attitude

1. Introduction

The earliest trace of diffusion of innovations research originates in Europe. According to Rogers (1995), French social scientist known as, Gabriel Tarde, discovered an s-shaped curve that governs the rate of invention and imitation diffusion within a given social context in 1903. In American agricultural research,( Ryan and Gross,1943) cited in (Rogers, 1995) adopted the model as diffusion of innovations. Around the same time, Paul Mort conducted the first study of the diffusion of what he termed as educational adaptations in Pennsylvanian school districts, a study that led him to the following conclusion: "the succeeding waves of ‘reform’ which have come and passed in this century have left discouragingly little mark" (Cornell, 1941, p. 3). During Mort's time, diffusion research's applications to corporate reform efforts had yet to be exploited. As Mort put it: "We have placed our faith in diffusion to a very high extent upon the initiation of individual communities and here given but little attention to the problem of how diffusion comes about" (Mort & Cornell, 1941, p. 25).

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Todays’ 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). Educational systems around the world are under increasing pressure to use Information and Communication Technology (ICT) to teach students the knowledge and skills needed in the 21st century (Mutula, 2006). Development and application of ICT in African institutions of higher learning is critically important if the continent is to reduce the knowledge, technological and economic gaps between itself and the rest of the world (Sutee and et al, 2012).

Higher education was promoted in Kenya because of the crucial role it plays in the development of the human resources of a country. Consequently, universities generally and those in Kenya in particular are expected to train high-level human resources to participate in national development; to teach and create new knowledge through research and advanced training; to act as a conduit for the transfer, adaptation and dissemination of such knowledge; and to respond to the demands of national development and emerging socio-economic needs with a view to finding solutions to problems facing the country (Republic of Kenya, 1998; World Bank, 1994).

The thoughts and feelings people have about work, their jobs, and their organizations determine how they experience work, (Bryson and White, 2006). Some thoughts and feelings are fundamental and broad; they are concerned not so much with aspects of a particular job or organization but with the nature of work in general. These thoughts and feelings called work values, are relatively long lasting. Other thoughts and feelings are more specific. Those that are focused directly on a persons’ current job or organization, called work attitudes, are not as long lasting as work values. Work moods, that is how people feel while performing their jobs from day to day, hour to hour and even minute to minute also determine how people experience their work (Bryson et al., 2009).

This study tested the null hypothesis of no significant relationship between IT adoption and work values among middle level academic managers in selected private and public universities in Nairobi County, Kenya.
2. Review of Related Literature

2.1 Information Technology Adoption

While issues of access and the adoption of new ICTs have tended to revolve around utopian themes of empowerment and the development potential of ICT, it has also raised the accompanying issue of digital divide and the challenges for developing countries to participate in the global information society. ICT, when adopted as one of many complementary strategies in development projects such as health, education and rural development, has the potential to empower communities with improved access to knowledge networks and services (Nelson, 2002). On the other hand, any meaningful participation in this ICT “revolution” is also challenged by very apparent discrepancies, imbalances and inequalities that currently characterize issues of ICT access and adoption. ICT has become a fashionable acronym borne largely out of the Internet and telecommunications “revolution” to describe an electronic means of capturing, processing, storing and disseminating information. Little attention, however, is placed on the fact that ICT is not a recent phenomenon since its broader definition also includes print-media, radio, telephone and television (Pajo and Wallace, 2001).

The pervasiveness of ICT has brought about rapid teleological, social, political and economic transformation, which have eventuated in a network society organized around ICT (Yusuf, 2005). Currently e-learning is becoming one of the most common means of using ICT to provide education to students both on and off campus by means of teaching online offered via web-based systems. Considering the role of education in nation building and the population explosion in the secondary schools these days, the use of ICT in the teaching-learning process becomes imperative. This is true because its adoption by the teachers will enhance effective teaching. Such issues like good course organization, effective class management, content creation, self-assessment, self-study collaborative learning, task oriented activities and effective communication between the actors of teaching learning process and research activities will be enhanced by the use of ICT based technology (Harrison et. al., 2008).

Awareness campaign and sensitization of personnel is a necessary step in developing ICT infrastructure in education. Organization of seminars, conferences and workshops for top management and other critical staff within the Ministry of Education, National Council for Higher Education, and in the universities and with other stakeholders are necessary in ICT infrastructure development (Republic of Kenya, 1998). These workshops, seminars and conferences aimed at raising the level of awareness of the infrastructure challenges, to discuss the users need and various infrastructure options, to promote and encourage multi-stakeholder approaches, to solicit feedback from management and staff (Gesci, 2007).

The effective deployment of ICTs in education will therefore require that Ministries of Education collaborate with other ministries and government bodies responsible for infrastructure and ICT and associated policy development and planning. Ministries and universities also need to establish close working relationships with the
private sector and civil society involved in developing and promoting ICT policies, plans and infrastructure (Abagi, 1998). Ministry of Education should hold meetings with other important ministries and stakeholders. The meetings are important and used as avenues to share the infrastructure needs and requirement, to request for consideration of educational institutions in the National ICT planning process and to keep abreast of national ICT developments. The impact of ICT recent studies have considered ICT in higher education in terms of the benefits for tertiary learners; for example, (Oliver & (Gesci, 2007) investigated the use of mobile learning (m-learning) at Curtin University of Technology in Western Australia. They suggested that “emerging technologies owned and used by students, and incorporated wisely into university curricula, can go some way towards enhancing high quality, face to face learning experiences, where articulated knowledge is constructed and student achievement of intellectually challenging outcomes is effected” (p. 12). Another study conducted at the University of Melbourne (Kennedy, Krause, Churchward, Judd, & Gray, 2006) found evidence of a significant positive association between effective use of ICT and success in tertiary studies. The researchers reported that many students endorsed the use of a number of technologies and technology-based tools in their university studies such as mobile phones were identified as one of the widely accessed technologies; therefore, in higher education, an important aspect of the shift in technological processes has been to the adoption of ICT for learning and teaching.

2.2 Work Attitudes

Work attitudes are collections of feelings, beliefs, and thoughts about how to behave that people currently hold about their jobs and organizations (Bryson & White, 2006). More specific than values, work attitudes are not as long lasting as values because the way people experience their jobs and organizations often changes over time (Williams and Alliger, 1994). Such changes are due in part to changes in the work situation, such as being given or denied a promotion. Workers often change jobs and organizations. Such work changes often result in attitude changes; work values, in contrast, can and often do remain constant from job to job and organization to organization. Two work attitudes that have especially important implications for work experiences are job satisfaction and organizational commitment (Rokeach, 1973).

ICT adoption and work attitudes in any organization are related due to the three components such as feelings, the affective component; beliefs, the cognitive component; and thoughts about how to behave, the behavioral component (Stephen & Timothy, 2003). For example, the affective component of a social worker's attitude is the worker's feelings about his or her job or organization and in any organization it may be due the number of computer equipments available. The cognitive component is the worker's beliefs about the job or organization he or she believes the job is meaningful and important. The behavioral component is the worker's thoughts about how to behave in his or her job or organization (Black and Krivelyova, 2004). Each component of a work attitude influences and tends to be consistent with the other components. Because job satisfaction and organizational commitment are key determinants of the experience of work and are central to understanding and managing organizational
behavior, they are worth in depth study considering that they vary across countries (Stephen & Timothy, 2008).

Other studies have also looked at the impact of innovative work experiences (IWPs) on job quality basing on the level of ICT in an organization and found a mixed evidence (Godard, 2004). Some (Barker, 1993; Godard, 2001) support the pessimistic school of thought finding that some practices are associated with work overload due to minimum use of advanced technology. Others (Appelbaum et al., 2000) have found no adverse effects of some IWPs on stress levels; while Doeringer et al (2002) found that manufacturing start-ups which adopt IWPs offer jobs with relatively high pay, good ICT training, job security and opportunities for participation. Of particular note is Wood’s (2008) study since he uses the Workplace Employment Relations Survey 2004, which is closely linked to the dependent variable of this study.

Mbulankende (2007) reported that ICT like most innovations will not work without positive attitude among employees and suggested that continuous training should provide the support from which teachers can continue to keep and update with ICT and its application to subject pedagogy in order to enhance their teaching skills. In all faculties, lecturers should be introduced and trained on how to use various ICT tools common in the classroom such as projectors, computers, electronic white boards, digital cameras and trouble shoot minor problems common with these facilities. The Ministry of Education and Sports should put in place appropriate strategies to ensure that integration of ICTs in teaching and learning process goes together with the recruitment, training and retention of staff. Peansupap and Walker (2005) indicated that the failure of ICT change derives from the traditional beliefs of managers and ICT experts that technology is a magic bullet and so neglect role of people in any change management task. However, solving technical issues can minimise users’ resistance to technological innovation and thus, ICT implementation success is often realized by managers who understand the management of technological change. Thus, if teachers perceive ICT as a beneficial tool, compatible with their current activities, easy to use and have observable outcomes, they could demonstrate positive attitude towards ICT. This can positively influence ICT Implementation in institutions of higher learning.

Finally, where management does not involve unions in the innovation process, worker discontent arising from unmet expectations and perceptions of procedural unfairness may result in lower well-being than in circumstances where the absence of a union is associated with lower worker expectations of involvement (Weiss and Cropanzanzo, 1996). It is difficult establishing the causal relationship between managerial innovation and employee well-being because innovations are not randomly assigned to workplaces and their employees. It is even conceivable that some management innovations are introduced to combat low morale and job dissatisfaction such that innovation is endogenous with respect to well-being. Similarly, union coverage is not randomly assigned to workplaces or to workers (Gordad, 2001). Indeed, there is a
substantial literature which seeks to account for the endogenous unionization in isolating the causal impact of unionization of job satisfaction. Thus efforts to assess the mediating effect of unionization on the links between innovation and worker well-being should account for the potential endogeneity of both innovation and unionization. There is conclusive international evidence that the innovation adoption helps to improve employee productivity, organizational effectiveness and living standards (Bryston et al. 2005).

3. Methods and Techniques

This study included these techniques: (1) the descriptive correlation survey design; (2) standardized questionnaire from Chen and Tsou (2007); (3) a researcher devised questionnaire, following the reviewed literature on indicators of work values; (4) 362 middle level academic managers (dean, a head of department or their equivalents) as respondents out of 3,810; (5) simple random sampling; (6) validity test using content validity index (0.82) and Cronbach’s reliability coefficient for the research tools and (7) statistical tools such as the computation of the means for the levels of information technology adoption and work attitude, while the null hypothesis was tested using the Pearsons’ linear correlation coefficient.

4. Findings and Interpretations

4.1 Level of IT adoption

The level of IT adoption was determined based on four constructs namely: IT infrastructure, strategic alignment, organization structure and individual learning. Each of these questions was based on the Likert scale, where the respondents were asked to rate the level of ICT adoption if high or low by indicating the extent to which they agree or disagree.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Interpretation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Learning</td>
<td>2.83</td>
<td>Low</td>
<td>1</td>
</tr>
<tr>
<td>Strategic Alignment</td>
<td>2.78</td>
<td>Low</td>
<td>2</td>
</tr>
<tr>
<td>Organization Structure</td>
<td>2.59</td>
<td>Low</td>
<td>3</td>
</tr>
<tr>
<td>Information technology infrastructure</td>
<td>2.57</td>
<td>Low</td>
<td>4</td>
</tr>
<tr>
<td><strong>Average mean</strong></td>
<td><strong>2.69</strong></td>
<td><strong>Low</strong></td>
<td></td>
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Source: Field data 2015
The results in Table 1 revealed that the level of IT adoption is generally low (overall mean = 2.96), implying that majority of the academic managers are yet to adopt IT at acceptable levels. Within the context of the specific constructs, the low levels are on acquisition of IT infrastructure; IT applications are yet to be fully appreciated in universities in Nairobi County, Kenya; security of the IT infrastructure is compromised; IT equipments are yet to be well appreciated in the decision-making and improvement of the working conditions of employees.

Majority of the respondents explained that the usage of infrastructure interest café was low implying that responsiveness from staff was not good, a fact that indicates ICT adoption may be at a low level. The respondents did not seem to be aware of an existing intranet or extranet within their universities and some staff appear to have minimal or no computer basic skills.

The security of the IT infrastructure is compromised in terms of privacy and one informant advised that the universities ought to invest money in purchasing genuine software, faster bandwidth and better computers. Universities then ought to monitor and control the purchasing processes or procedures. In relation to organization structure, interviews did not seem to support the notion of any vivid changes put in place to facilitate interdepartmental (cross function) integration. With respect to individual learning, generally, the workers of these universities have not yet adopted new computer skills and applications.

Many of the respondents agreed to the fact that ICT adoption enhances decision making and that ICT adoption makes work easier and efficient thereby improving working conditions or experiences. Their support systems indicated that it was not by any levels adopted in their working conditions. At the time of the study, there was no apparent program on board to incorporate IT adoption but there were projections of new course units like animation and mobile computing.
4.2 Level of Work Attitude

The level of work attitude were measured on a 4-point scale (1=strongly agree, 2=agree, 3=disagree and 4=strongly disagree) within three constructs namely: turnover intentions, job satisfaction and organizational commitment.

Table 2: Level of Work Attitude

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Interpretation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover intentions</td>
<td>2.60</td>
<td>Good</td>
<td>1</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>2.54</td>
<td>Good</td>
<td>2</td>
</tr>
<tr>
<td>Organizational commitment</td>
<td>2.52</td>
<td>Good</td>
<td>3</td>
</tr>
<tr>
<td>Average mean</td>
<td>2.56</td>
<td>Good</td>
<td></td>
</tr>
</tbody>
</table>

Source: Field data 2015

Turn over intentions had the highest rating (mean of 2.60) implying that at any given opportunity, the employees stand a risk of leaving their current jobs for other greener pastures. Job satisfaction ranked second (a mean of 2.54) implying that the employees are somehow satisfied with some aspects of their jobs much as they still have reservations, they have good feelings and are proud of their jobs. Organizational commitment though good, ranked lowest (mean 2.52) implying that the employees may be having divided loyalty in their organizational commitment. This is compounded by the fact that most faculties are involved in moon lighting activities so as to make up for their little earnings.

4.3 Relationship between IT adoption and Work Attitude

Using the Pearson’s linear correlation coefficient (PLCC) the null hypothesis of no significant relationship between IT adoption and work attitude was tested. Except for the construct on individual learning under IT adoption, the null hypothesis is accepted at 0.05 level of significance implying that for the academic managers to develop work attitude, IT adoption is not among the factors they must consider therefore other factors could as well be considered but not necessarily IT adoption.

From the qualitative data however, majority of the respondents admitted that adoption of ICT positively influences their work attitude because work seems to be done faster and in smarter ways. Actually one said they just cannot work without ICT. Another person just the thought of getting output by simply clicking a button brings a smile to her face. However, many of them were not certain whether their university had a mission statement that addressed ICT adoptions. On the other hand, someone advised that the mission be made clean about the ICT interests of the university members.
The results of this study are congruent with such studies of Nakate, 2001; Nakimuli 2006, and Ssemogerere, 1996 in Ariko, 2002, though at variance with a few studies (Nafuna, 2002, Gwokyla, 2002, Inyaga, 2000). This study thus dismissed the position of those who assert that ICT adoption by individuals or organizations necessarily impacts on the adopter thus improving their attitude to work. However, when making changes in the workplace, managers need to take into account workers’ values. Managers may try to increase workers' motivation by making their work more interesting, giving workers more freedom to make their own decisions, or expanding the number of activities a worker performs (Henry & Neal, 2003).

5. Conclusions

The adoption of ICT in the universities in Nairobi County does not necessarily impact on the work attitude of the academic managers, implying that the existence of some other variables that positively affect on the academic managers’ work attitudes in these universities should be established and promoted.

Information technology infrastructure, strategic alignment and individual learning all as components of ICT adoption are crucial in promoting good work attitude, though they do not do so to a significant level. Individual learning as an element of ICT adoption on the other hand, is important in promoting such good attitude to work at a significant level. As such therefore, attitude to work become more favorable as more ICT is adopted, therefore, universities that want to improve and make the work attitude of their academic managers’ favorable need to improve their ICT adoption to levels that satisfy these managers in the areas of acquiring information technology infrastructure, strategic alignment, organizational structuring but most importantly in the domain of individual learning.

6. Recommendations

The universities under study should comprehensively embrace positive ICT innovations. Information technology was originally perceived as merely a supporting tool in universities and other educational organizations; however, to date, it has become an important element in the provision and delivery of educational services. Organizations on the other hand, 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 intrinsic and extrinsic work values.

The university management should review their work environment policies so as to align their employees’ work attitudes to their corporate strategy subsequently improving their work life and productivity. The future researchers can embark on a similar study in another research locale with keen selection of rural- based universities.
References


