

## **A Preliminary Study of Relationship between Principals' Gender and ICT integration in Management of Public Secondary Schools: Nairobi County Perspective, Kenya**

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### **ABSTRACT**

*The purpose of this study was to find out whether there exists a relationship between the principals gender and ICT integration in management of public secondary schools in Kenya. Cross-sectional survey design was used in Nairobi County where quantitative research strategy was applied for the collection of data using questionnaires. The target population comprised of 75 secondary schools in Nairobi County at the time of data collection. Simple Random sampling was used to select the public secondary schools with 7(10%) participating in the pilot study. Data collected by questionnaires from 68 principals were analyzed using Pearson's chi square with the help of Statistical Package for Social Sciences (SPSS). The findings of the analysis of data revealed that there was a no significant relationship between the principals' gender and ICT integration in management of public secondary schools in Kenya. Out of this study recommendations were made to the county government and secondary schools in Nairobi County and Kenya in general.*

**Key Words:** - Principals' Gender, ICT integration, Management of Public Secondary Schools

### **1. Introduction**

While this study does not seek to describe in detail the sociological definition of gender, it seeks to contextualize the definition of gender in relation to development and the impact thereof. According to the World Bank (2009), gender refers to the socially constructed roles and socially learned behaviours and expectations of women and men in a particular society. There is a cultural connotation to the definition in that female and male in the African context (and worldwide) have always had different roles associated with day-to-day activities. Societies define roles, value systems and attitudes to determine levels of participation by its members based on sexual orientation (Venter & Marias, 2006). Therefore gender is associated to social and cultural constructs (Venter. et.al, 2006). Gender is a socio-cultural construct of the society that determines the identity, roles or functions, entitlements and deprivation women and men in the society (Mikalista, 2010).

The introduction of ICT into the educational sector created new social stereotypes and gender inequalities (Markauskaite, 2005). According to Markauskaite (2005), the invention of the computer

has been viewed as a male domain. Volman and Eck (2001) argue that old stereotypic gender differences in attitudes and achievements that previously existed in mathematics and technological disciplines were extrapolated to the area of ICT. Several research reviews state that males are more interested in ICT than females, are more frequent users of computers and have more positive attitudes about computers and consequently outperform females in ICT literacy (Shapka & Ferrari, 2003). They further admit that a number of recent studies revealed that ICT-related differences between females and males reduced mainly in the access to ICT and basic computer skills.

With respect to gender, a number of studies have investigated the role of gender in the integration and usage of ICTs (Harris, 1996; Gefen and Straub, 1997; Morris and Venkatesh, 2000; Leonard and Cronan, 2005, Venkatesh et al., 2003; Choudrie and Lee, 2004, Haines and Leonard, 2007). The findings of the previous studies revealed that gender has an important role when considering technology integration and usage in both the organizational and household contexts. Morris and Venkatesh (2000) illustrated that male users used a computer more than females, and suggested the male gender to be one of the most important variables when examining PC integration in the household. Choudrie and Lee (2004) also found that differences in gender were not important in determining integration of broadband. Carveth and Kretchmer (2002) concurs with Choudrie and Lee (2004) that for internet users in the USA, there are approximately equal numbers of men and women using the internet. This study sought to establish if gender of principals of public secondary schools in Kenya had any relationship with ICT integration in management.

Information Communication Technologies (ICTs) are widely seen as having the potential to contribute positively to educational growth and development and to improve the livelihoods and quality of life of individuals and schools. Several studies have sought to demonstrate the relationship between education and the integration of ICT. Although this is acknowledged to be something that starts in the high end of the market, the speed with which new, rapidly deployable wireless technologies have diffused across even developing countries, has been their most distinguishing characteristic. What is clear from various studies (Okewa 2011; Maleka 2012) is that the diffusion of ICT is highly uneven concentrating in urban areas and leaving some rural areas almost untouched. Access to these technologies is constrained by income as is usage, and as they become more complex, they are increasingly constrained by literacy and education. This study investigates the integration of ICT by secondary school principals further, by viewing them through a gender lens.

Of the limited data on Africa that exists, very little is disaggregated on gender lines. This study provides a descriptive statistical overview of integration of ICTs by principals of secondary schools in Nairobi County. Literature review indicated that in a study that were undertaken in five of the 17 countries surveyed in East, Central, South and West Africa, it revealed that there were instances where more women had greater knowledge of the Internet than men such as in Cameroon. More generally however, the study confirms the differences in access by men and women to ICTs especially where they depend on public access. (Maleka 2012) also found out that although men spend more on ICT accessories and computers in absolute terms, women spend a greater share of their monthly income on internet usage. The data highlight some issues pertinent to gender differences in ICT access and usage that are similar to findings in early studies and literature. It is clear from the evidence that although there is gender inequity, male and female principals may have more in common when it comes to ICT integration in secondary schools in Nairobi County.

This study highlights once more the necessity of ICT irrespective of one's gender. Females in general have been the subjects of discrimination for many decades. Differences in male and female interaction with the world at socio-economical, political and cultural levels have been studied globally for many years and continue to be relevant even today. It is also well documented that females in Kenya are exposed to greater magnitudes of gender-based challenges across all areas of their lives. Cultural practices have often favoured males and systematically perpetuated their dominance over females. It could be that this deeply entrenched discriminatory pattern against women has transgressed to impact integration of information and communication technologies (ICT's). Biologically, sex (being male or female) refers to anatomy and physiology, (Kennedy, Wellmen & Klement, 2003) and is not easily altered. Therefore gender is a social identity that changes over time (historically) and space (geographically) and is influenced by media, family, religion, and education in order to frame actions and shape behaviours. Gender is a means to understand the differences between males and females and hence refers to both sexes (World Bank, 2009; Kennedy et al, 2003).

It is important for countries in general to understand women's political, social and cultural perspectives based on their positions in society and the roles they assume in family development, hence the term gender sensitivity (Venter et al., 2006). Gender is a tool is used to measure female and male different relationship in this study in order to understand integration patterns of ICT's by females in secondary schools management in Kenya. Further, little literature exists that investigates gender in ICT Integration by secondary school principals in Kenya. Although in some countries females dominate some areas of ICT's as was evidenced in a research study by Markauskaite (2006), there is a common trend of male dominance of ICT's across the globe (Awolaye, Siyanbola, & Oladipo, 2008 ; NDP, 2007; e-Living Consortium, 2003; Norman, 2002 & Hafkin, 2003) particularly in developing countries. More often than not technology is seen as gender-neutral, therefore there is a lack of coherent research practice to analyze gender disparities in ICT's across human levels of interaction (Fialova, 2006). There has been a slow but steady uptake of the technologies by females in new technologies such as telephones, mobiles or computers (Gupta, 2008). Dholakia, and Kshetri, (2004) in a *Gender and Internet Usage* study state that in Africa, women's participation in internet usage continues to be low, ranging from 12% in Senegal to 38% in Zambia (Dholakia et al, 2004).

Similarly, Markauskaite (2006), investigated gender differences in self reported ICT experience and ICT literacy among first year graduate trainee teachers. The study revealed significant differences between males and females in technical ICT capabilities, and situational and longitudinal sustainability. Males' scores were higher. Jamieson-Proctor, Burnett, Finger and Watson (2006) conducted a study on teachers' integration of ICT in schools in Queensland State. Results from 929 teachers indicated that female teachers were integrating technology into their teaching less than the male teachers. But the situation was different in mid-western US basic schools where Breisser (2006) found that females' self-perceptions about technology competence improved while males' self-perceptions about technological dominance remained unchanged. The study was in agreement with (Adams, 2002) that female teachers applied ICT more than the male teachers. This study confirms report by Yukselturk and Bulut (2009) that gender gap has reduced over the past years, presently, a greater number of females than males have used internet and web 2.0 technologies.

However, some studies revealed that gender variable was not a predictor of ICT integration into teaching (Norris, Sullivan, Poirot & Soloway, 2003). In a research conducted by Kay (2006), he found that male teachers had relatively higher levels of computer attitude and ability before computer implementation, but there was no difference between males and females regarding computer attitude and ability after the

implementation of the technology. He claims that quality preparation on technology can help lessen gender inequalities.

## 2. Objectives of the Study

To establish whether principals' gender is related to their level of integration of Information Communication Technology in management of public secondary schools in Nairobi County, Kenya;

## 3. Research Questions

What is the relationship between the principals' gender and the level of integration in information communication technology in the management of public secondary schools in Nairobi County in Kenya?

## 4. Hypothesis

There is no significant relationship between the principals' gender and the level of integration of information communication technology in management of public secondary schools in Nairobi County, Kenya.

## 5. Findings

From both observation and anecdotal evidence, we "know" that there is gender gaps in the digital divide in several developed and many developing countries, but there are very little data. Without such data, it is difficult, if not impossible to make the case for the inclusion of gender issues in ICT policies, plans and strategies for policymakers. On the research level, the major reason for collecting sex-disaggregated data is to ascertain by measurement if men and women are benefiting differently from ICT interventions and if gender influences the choice of ICT strategies. Garba and Garba (2010) explain that gender influences people's attitudes, social roles and responses to situations.

Table 1 presents the distribution of principals of public secondary school of Nairobi County by gender.

Table 1

### *Distribution of Principals' of Secondary Schools of Nairobi County by Gender*

Gender	F	%
Male	33	48.5
Female	35	51.5
Total	68	100.0

Although the teaching profession has almost equal distribution of gender, (ratio of male to female), the findings of this study show that the leadership positions in secondary schools in Nairobi which is an urban area is slightly higher for female (51.5%) than for male (48.5%). The presence of more female principals may be attributed to the fact that TSC has a policy of encouraging teachers to work close to where their spouses are and majority of civil servants and other employees work in Nairobi city and may have married female teachers. In order to test whether there was a significant relationship between the gender of principals and level of ICT integration in secondary school management, chi square test ( $\chi^2$ ) was used to test hypothesis one. Table 14 indicates the relationship between the principals' gender and level of integration of ICT in secondary school management in Nairobi County.

Table 2

*Relationship between the Principals' Gender and Level of Integration of Information Communication Technology Cross Tabulation.*

	Level of ICT integration							
	High		Moderate		Low		Total	
	N	%	N	%	N	%	N	%
Male	12	17.6	17	25.0	4	5.8	33	100.0
Female	10	14.7	24	35.2	1	1.4	35	100.0
Total	22	34.3	41	60.2	5	7.2	68	100.0

From Table 2 it can be observed that 17.6% of the respondents are male against 14.7% of the female respondents who have highly integrated ICT in management of public secondary schools. Examining those who have moderately integrated ICT reveals that 25.0% males and 35.2% were female. The result reveals that both genders were up to the task and the gender gap was closing gradually. Results from Chi square tests were tabulated in Table 15. The Chi square test confirms that there is no relationship between gender and level of integration of ICT in public secondary school management. Table 3 indicates the results of testing the hypothesis on relationship between the gender of the principal and level of integration of information communication technology in management of public secondary schools.

Table 3

*Chi Square Tests on Gender of the Principals and ICT Integration.*

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.181 <sup>a</sup>	2	.204	.196	
Likelihood Ratio	3.312	2	.191	.196	
Fisher's Exact Test	3.027			.214	
Linear-by-Linear Association	.010 <sup>b</sup>	1	.919	1.000	.543

The null hypothesis ( $H_{01}$ ) was tested using Chi square test ( $df=2$ , Pearson Chi square value ( $\chi^2$ ) =3.18 and  $p= 0.204$  at 0.05 level of significance) indicated that the finding was not significant. The Null hypothesis ( $H_{01}$ ) '*There is no significant relationship between the principals' gender and the level of integration of information communication technology in management of secondary schools*' was therefore accepted. The gender of the principal is therefore not significantly related to the level of integration of information communication technology in management of secondary schools. The reason behind this may be that both male and female principals may have equal access to ICT and share related work tasks. This study revealed that the gender gap is closing up gradually. On the other hand, research question one that was answering the question on whether there was a relationship between the principals' gender and the level of integration of information communication technology in management of public secondary schools had item (a) 5 that seeking information on whether ICT integration in secondary school management was affected by gender. Responding to this item, 3 (33.3%) out of 9 indicated that ICT integration in secondary school management was affected by gender whereas 6 (66.6%) indicated that ICT integration in secondary school management was not affected by gender. (See Table 4)

Table 4

*Responses from Interviewees on relationship between the principals' gender and the level of integration of ICT in management of secondary schools*

Impact of gender on ICT integration	% responses from the 9 sampled principals
Agree that gender affect ICT integration	33.3%
Those who disagreed	66.6%
Total	100.0%

Results of the Chi Square test based on hypothesis 1 and research question 1 (item a(5)) are in agreement that gender of principals has no relationship with ICT integration in management of public secondary schools in Nairobi County. The results from analysis of this study show that there is no significant relationship between the principals' gender and integration of information communication technology in management of secondary schools. The gap of gender disparities in ICT integration among principals in management of secondary schools in Nairobi is insignificant. Both female and male principals of secondary schools in Nairobi have integrated ICT in their schools at an almost equal level.

## 6. Discussions and conclusions

The findings of this study show that secondary schools in Nairobi County which is an urban area are dominated by female principals (51.5%) while male principals were 48.5%. The majority of principals (58.8%) were aged between 41-50 years. The results show that there is no significant relationship between the principals' gender and integration of information communication

technology in management of secondary schools. The results indicate that the Pearson  $\chi^2 = 3.18$ ,  $P=0.204$  at 0.05 level of significance ( $df=2$ ). The null hypothesis ( $H_0$ ) was therefore not rejected. It was accepted. The gender of the principal is therefore not significantly related to the level of integration of information communication technology in management of secondary schools. However other research studies revealed that male teachers used more ICT in their teaching and learning processes than their female counterparts (Kay, 2006; Wozney et al., 2006). From the findings of the study, it was concluded that gender and principals' educational level were not significantly related to their level of integration of ICT in Nairobi County secondary school management. Equal opportunities need to be given to both male and female in the management of ICT integration in public secondary schools

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