

ICT Personnel Competence and Adoption of Digital Online Marketing by Medium Enterprises in Nairobi

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Abstract: SMEs account for around two thirds of total employment, and half of the turnover in the Kenyan business sector. However the sector faces binding challenges that make it impractical for it to realize its full potential and deliver to the government expectations. The aim of this research was to study the influence of ICT personnel competence on adoption of digital online marketing by medium enterprises. Digital online advertising or Internet advertising is an internet-based process by which advertisers communicate, interact with and persuade online users in order to position a brand, which allows a company to promote both customer awareness and preference in a customized and personalized way, and to decrease the time needed to make a buying decision. The study was conducted in Nairobi's central business district using empirical research study with a target population of 14,266 medium enterprises. A sample size of 389 was obtained using Israel's formula. The sample population was stratified depending on the industry in which they operate. Data was collected through use of semi structured and open ended questionnaires. The collected data was edited, coded, classified, tabulated and presented in frequency tables, pie charts, bar graphs using frequencies and percentages, chi-square tests and P-value tables. The findings revealed that ICT personnel competence is a significant determinant of adoption of digital online marketing of digital online marketing. Based on the findings, the study concluded that competent ICT personnel lead to the success of digital online marketing and therefore recommends medium enterprises to hire competent ICT personnel who can fast tract the implementation and use of digital online marketing. Lastly, the study will help medium enterprises in solving the problem of limited market access identified in previous researches and therefore contribute positively to the Kenyan economy.

Keywords: ICT personnel competence, Digital online marketing, Medium enterprises

1. Introduction

Digital online advertising or Internet advertising is an internet-based process by which advertisers communicate, interact with and persuade online users in order to position a brand, which allows a company to promote both customer awareness and preference in a customized and personalized way, and to decrease the time needed to make a buying decision. (Hanafizadeh and Behboundi, 2012). The company website must be well-organized, well-designed and user-friendly in order to attract more target customers. (Rowley, 2006). It may involve mobile friendly web design where web sites are designed that will respond to different sized browsers on mobile devices such as smart phones or tablets, and still look great on desktops. Easy navigation allow users to reach any page of the site from any other page, thus making navigation easier. Slides shows, too, gives the option of awesome transition effects between the slides to have a good look of the product or services. Rotating Testimonials are used to pull customers by providing views of satisfied customers. Marketers create a forum where clients or web visitors can ask questions, get tech support, or post comments. Another fastest method of online marketing today is pay-per-click advertising, utilizing Google Ad Words and Facebook. Search engine optimization can be used to get web site to rank well for certain specific keywords on search engines, so as to get more traffic to the site from those search engines. Social media marketing accounts for business are set up on the websites like Face book, Face book fan page, Twitter, LinkedIn etc. and in addition few websites also allows hooking up of all other social media accounts from one place. Video production can be used to explain what the business does and show their products or services to sell them. Email marketing is sending email to own in-house email lists, i.e. lists of customers and prospects that have been build up over time.

Adoption of technology can be defined as a process that begins with awareness of the technology and progresses through a series of steps that end in appropriate and effective usage. Davis, Bagozzi & Warshaw (1989). Davis, Bagozzi & Warshaw (1989) stated that technology adoption as a five step process that involves awareness, assessment, acceptance, learning and usage. For awareness, the potential users learn enough about the technology and its benefits to decide whether they want to investigate further. Assessment involves evaluating the usefulness and usability of the technology, and the ease or difficulty of adapting to the technology. Acceptance involves users deciding to acquire and use the technology, or decide not to adopt. Learning the technology includes users developing the skills and knowledge required to use the technology effectively and finally usage incorporates users demonstrating appropriate and effective use of the technology. ICT adoption readiness is defined in terms of "the psychological and practical point at which an individual is prepared to proceed to the next stage, which is determined by a particular mix of experience, capabilities, resources, education, age, peer pressure, business imperatives, motivation and circumstance" (Zappala and Gray, 2006).

2. Medium enterprises in Kenya and their use of Digital Online Marketing

In Kenya, "micro-enterprises" are those with 10 or fewer workers, "small enterprises" have from 10 to 50 workers, and "medium enterprises" have 51 to 100 workers (Mutongwa & Rabah, 2013). The county government of Nairobi gives a more accurate description of businesses in terms of number of employees and premises floor space. The small and medium enterprises (SMEs) play an important role in the Kenyan Economy. According to Longenecker *et. al.* (2006), the sector contributed over 50 percent of new jobs created in the world in the year 2005. SMEs account for around two thirds of total employment, and half of the

turnover in the Kenyan business sector (Wangombe, 2013). However, according to Wangombe (2013), the sector faces binding challenges that make it impractical for it to realize its full potential and deliver to the government expectations. These include limited market access, limited access to information, finances and technology and unfavorable policy and regulatory environment among others (GOK, 2005). There has been increased number of Internet users over the past recent years. According to the Communications Authority of Kenya (C.A.K), 57.1% of the Kenyan population was able to access the Internet by December 2014. Considering the increased number of Internet users over the past recent years, who provide a potential market; SMEs need a mechanism to be able to access the market. Sandberg and Vinberg (2000) acknowledge that for SMEs to survive and grow in the future, it becomes a matter of strategic importance to adopt information technology. Digital online marketing will allow advertisers to communicate, interact with and persuade online users, promote both customer awareness and preference, and to decrease the time needed to make a buying decision.

3. Methodology

The study was conducted in Nairobi's central business district with a target population of 14,266 registered medium enterprises. The research adopted the empirical research study. The study adopted Israel (2013) formula for determining the sample size.

$$n = \frac{N}{1 + N(e)^2}$$

Where n is the sample size, N is the population size and e is the required level of precision. Applying the formula in this research, using a precision level of $\pm 5\%$, the sample size was obtained as:

$$n = \frac{14266}{1 + 14266(0.05)^2} = 389$$

Therefore, the sample size was 389. Stratified random sampling was applied to select the sample as according to Israel (2012), stratified samples are more accurate than random samples because each group or strata is well represented in the sample. The medium enterprises were stratified depending on the type of industry as categorized by the County government of Nairobi. Random sampling was then used to identify the particular enterprises in each stratum to participate in the study. Table 3.1 below shows the summary of the sample frame.

The researcher used questionnaires as a primary data collection tool to collect data from the respondents. A semi structured and open ended questionnaire was developed to collect data on the variables for the study. According to Ogila (2002), a questionnaire is a carefully designed instrument, written and typed or printed for collecting data

from people. The structured, predefined questions allow respondents to provide answers about themselves or some other unit of analysis such as their work group, project, or organization. (Sivo *et. al.*, 2006). The questions contained in the questionnaires followed a definite order for to guide the respondents. This method has a large coverage enabling the gathering of data from a large sample very inexpensive. It also has anonymity which helps to collect more accurate answers than is possible in an interview.

Table 3.1: Summary of Sample Frame (IFMIS, 2016)

<i>Business Category</i>	<i>Number of Medium Enterprises</i>	<i>Percentage Constitution</i>	<i>Segment Sample</i>
General Trade, Wholesale, Retail, Stores, Personal Services.	12561	88.05	343
Transport, Storage, and Communications	514	3.60	14
Agriculture, Forestry, & Exploitation Of Natural Minerals	16	0.11	0
Accommodation and Catering	287	2.01	8
Professional and Technical Services	645	4.52	18
Private Education, Health and Entertainment Services	111	0.78	3
Industrial Plants, Factories, Workshops, Contractors	132	0.93	4
	14266	100.00	389

The collected data was gathered and quantified for ease of manipulation and analysis. The Statistical Package for the Social Sciences (SPSS) version 22.0 was used to analyze the data. The data was edited, coded, classified, tabulated and presented in frequency and percentages. Lastly, chi-square tests and P-values were used to establish the relationship between the independent and the dependent variable.

4. Findings

The questionnaire response rate was 84.06. Babbie (1990) suggested that a response rate of 60% is good while 70% is very good therefore, the response rate was considered acceptable and sufficient for data analysis to provide reliable and unbiased findings.

4.1 Demographic information of respondents

The study shows that 297(90.83%) of the respondents had Diploma or higher as their minimum academic achievement as illustrated in the Figure 4.1 below, and only 30(9.17%) had a certificate. The respondents were therefore able to understand the questionnaire provided and provide the required information appropriately.

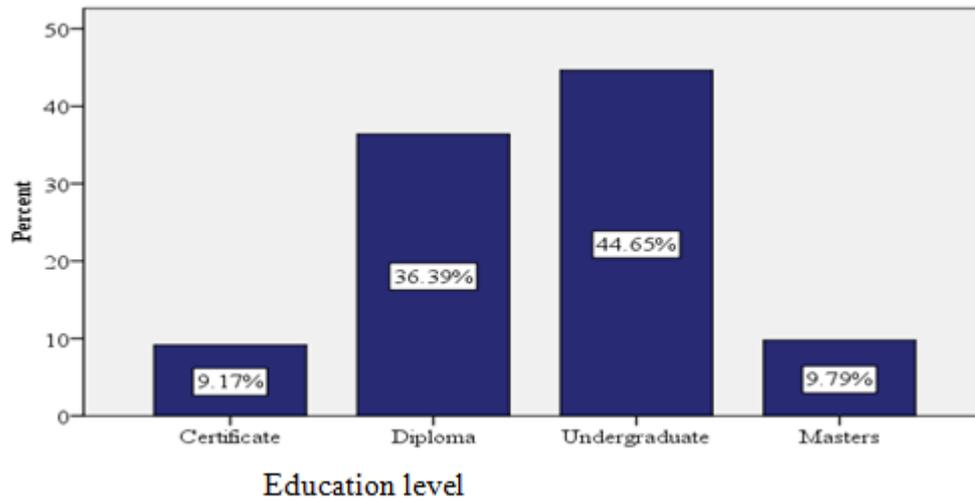


Figure 4.1: Education level of respondents

4.2 Medium enterprises with an ICT department

The researcher examined the number of medium enterprises with an ICT department. Less than half of the enterprises, 152(46.48%) had an ICT department with the majority

175(53.52%) lacking an ICT department. The findings indicate that owning an ICT department by itself is not sufficient to be able to adopt digital online marketing. Figure 4.2 below shows the findings.

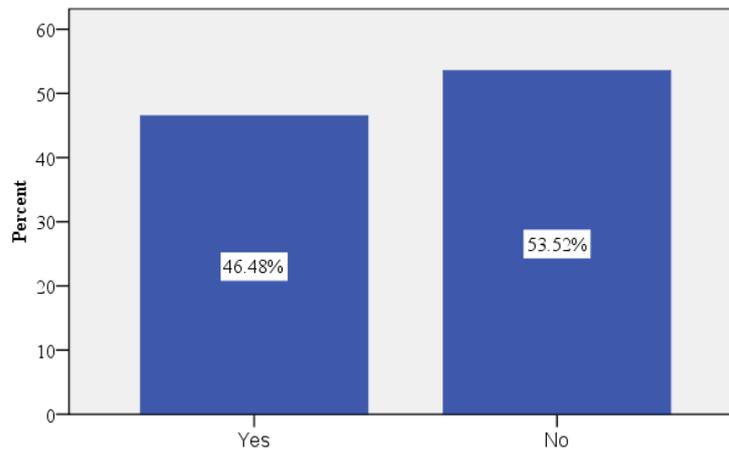


Figure 4.2: Ownership of ICT department by medium enterprises

4.3 Ratio of total employees to the ICT employees within medium enterprises

The researcher sought to establish the number of ICT personnel in comparison to the total number of employees within the medium enterprises. The findings show that only 31(9.63%) of the medium enterprises had less than fifty

employees in contrast to the 6(1.83%) who had above ten ICT personnel. In addition, 27.22% of the medium enterprises did not have even a single ICT personnel as part of their employees. Figure 4.3 and figure 4.4 below shows the findings. These findings imply that there is insufficient ICT personnel hired by medium enterprises which can be a key hindrance to the adoption of digital online marketing.

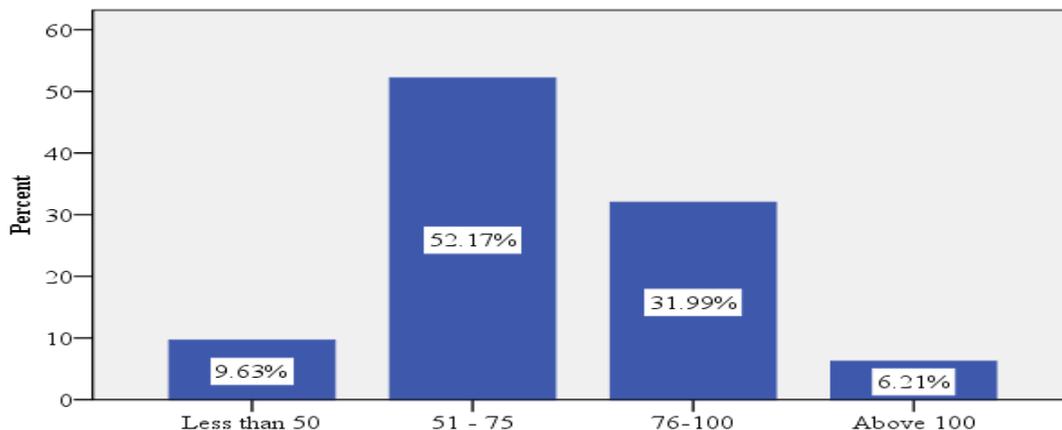


Figure 4.3: Total employees within medium enterprises

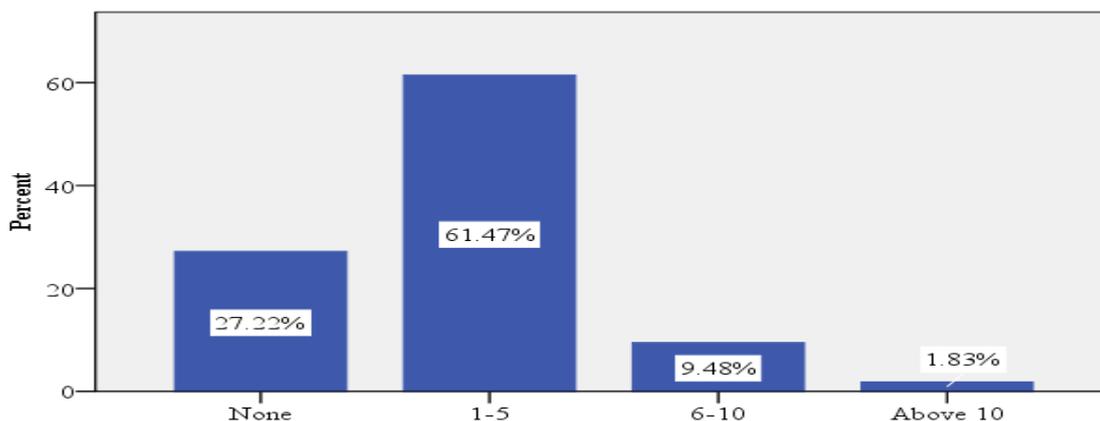


Figure 4.4: Total ICT personnel within medium enterprises

4.4 Highest academic level of ICT personnel

The researcher sought to establish the highest academic level of ICT personnel hired by the medium enterprises. As the figure 4.5 below shows, majority (58.72%) had an undergraduate degree as their highest academic level,

followed by diploma at 26.81%, certificate at 13.62% and only 0.85% had a master's degree. The academic level is deemed sufficient for ICT personnel to be able to implement digital online marketing technology.

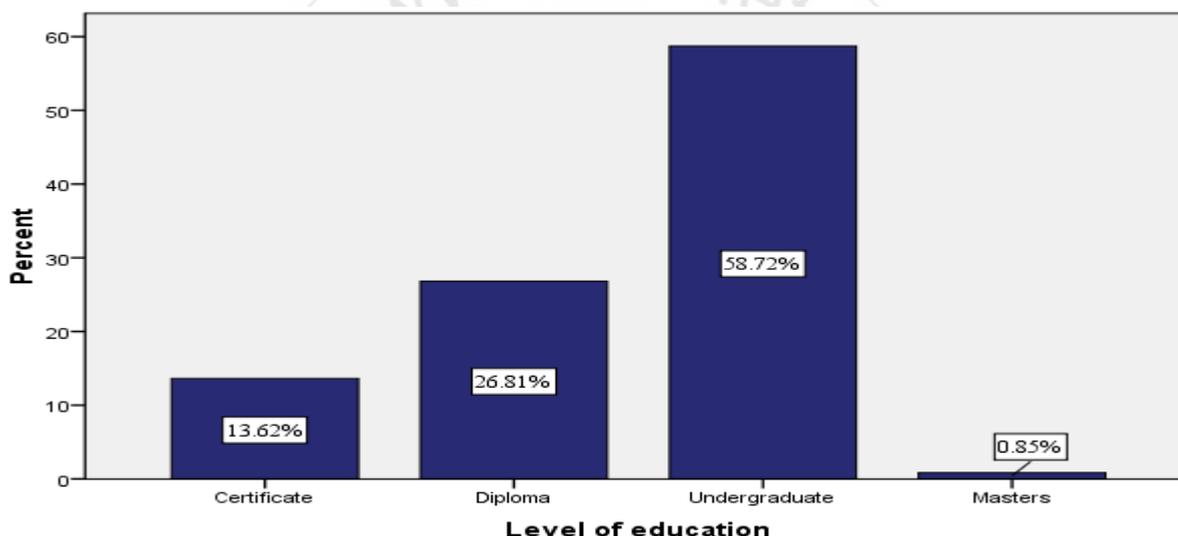


Figure 4.5: Highest academic level of ICT personnel

4.5 Working experience of the ICT personnel

The researcher sought to establish the working experience of the ICT personnel both in general ICT field and specifically in digital online marketing. The findings show that out of the 238(72.80%) who had at least an ICT personnel, 146(61.30%) had one to five years working experience, 80(33.60%) had six to ten years working experience, 11(4.6%) had more than ten years working experience, and 1(0.40%) did not have any working experience in any ICT field. Considering only digital online marketing working experience, 189(79.41%) of the respondents had such experience with the rest 49(20.59%) lacking it. Table 4.1 below summarizes the results.

Table 4.1: Respondents' working experience in ICT field and in digital online marketing

Duration	Any ICT field		Digital online marketing field	
	Frequency	Percentage (%)	Frequency	Percentage (%)
None	1	1.40	49	20.59
1-5 years	146	61.30	175	73.53
6-10 years	80	33.60	11	4.62
Above 10 years	11	4.60	3	1.26
Total	238	100.00	238	100.00

4.6 ICT personnel competence and the adoption of digital online marketing

The researcher sought to establish the relationship between ICT personnel competence and the adoption of digital online marketing through the use of likert scaled questions to the respondents. The ICT personnel competence was analyzed based on the competent and the incompetent. Each aspect was analyzed and its effect on adoption of digital online

marketing established in part and as a whole as discussed. The Chi-Square test statistic was used to assess the significance of the findings at 95% confidence level.

The value of the test-statistic is χ^2 (Pearson's cumulative test statistic) which asymptotically approaches a χ^2 distribution. The degree of freedom (df) being the number of rows (r) minus one multiplied by the number of columns (c) minus one in a contingency table (df = (r-1) (c-1)), a

decision is made after comparing the calculated value of the test statistic to the critical value of χ_{α}^2 . The null hypothesis is not accepted if the calculated chi-square value is greater than the critical chi-square value i.e. $\chi_{\alpha}^2 > \chi_c^2$ otherwise $\chi_{\alpha}^2 < \chi_c^2$ accept H_0 at the stated level of significance (5%) for this study. The chi-square cross tabulation and the P-value are provided in the tables 4.2 and 4.3 below respectively.

Table 4.2: ICT personnel competence and adoption of digital online marketing cross tabulation

ICT personnel competence	Response					Total
	SA	A	N	D	SD	
Competent	8(3.1%)	2(0.8%)	3(1.2%)	138(53.1%)	109(41.9%)	260(100.0%)
Incompetent	3(4.5%)	4(6.0%)	1(1.5%)	25(37.3%)	34(50.7%)	67(100.0%)
Total	11(3.4%)	6(1.8%)	4(1.2%)	163(49.8%)	143(43.7%)	327(100.0%)

Key: SA – Strongly agree, A – Agree, N – Neutral, D – Disagree and SD – Strongly disagree

Table 4.3: P-value of ICT personnel competence and adoption of digital online marketing

	Value	df	Asymp. Sig. (2-sided)	Asymp. Std. Error
Pearson Chi-Square	10.565	4	.003	-
Spearman Correlation	0.036	-	-	0.070

The calculated chi-square value was 10.565 which is greater than the critical chi-square value at 5% significance level with 4 degree of freedom, 9.50. The significance of these findings were reinforced by the fact that P-value 0.003 is less than 0.05 as shown in table 4.3 together with a positive Spearman correlation of 0.036. The findings show enough evidence to reject the null hypothesis that ICT personnel competence does not influence the adoption of digital online marketing at 5% significance level. Therefore the level of ICT personnel competence was statistically a significant determinant of adoption of digital online marketing at 95% confidence level.

The findings are in line with the unified theory of acceptance and use of technology (UTAUT) by Venkatesh *et. al.* (2003) who identified experience as one of the four moderating factors of behavioral intention to use technological innovation. Bassellier and Blaize (2001) found that ICT competence goes beyond the simple execution of a task and requires a broader awareness and attention to non-task-specific competences is needed. Morteza *et. al.* (2012) noted that internal ICT expertise consisting of employees, supervisors, or those from top management teams are powerful determinants of ICT adoption and success.

5. Discussion of Findings

The objective of the study was to establish the effect of ICT personnel competence on the adoption of digital online marketing. The research revealed that low proportion of ICT personnel compared to the rest of the staff members. The study also establishes that there is limited working experience in use of digital online marketing platforms as only 5.88% of the ICT personnel have more than five years working experience as indicated in Table 4.1. The low working experience is in contrast to the high academic level of an undergraduate degree which the ICT personnel have

attained. Lastly, ICT personnel competence was found to be statistically a determinant of adoption of digital online marketing as illustrated in Table 4.2 and 4.3. This implies that for any effective adoption of the technology, competent ICT personnel need to be recruited.

6. Conclusion

The objective of the study was to establish the influence of ICT personnel competence on the adoption of digital online marketing and the following conclusions can be made.

Medium enterprises in Nairobi central business district are not fully prepared with competent ICT personnel to enable them to adopt digital online marketing. Even though a considerable number of them have ICT departments, the department are not fully equipped with the right personnel to enhance adoption of new technologies. Furthermore the available personnel have insufficient experience in digital online marketing technology which is a key hindrance to its adoption. From the findings it is therefore clear that ICT personnel competence influences the adoption of the digital online marketing.

7. Recommendations

Based on the findings, it was recommended that medium enterprises should equip their ICT departments with sufficient personnel relative to the other departments. They should also consider hiring competent ICT personnel with sufficient working experience who can fast tract the implementation and use of digital online marketing. In addition, the management should embrace the adoption of digital online marketing and develop standard operating procedures for its use since they are the main initiators of new technologies and they are key in the implementation of new projects. Lastly, the Kenyan government should establish policies that encourage its medium entrepreneurs to adopt digital online marketing technology since most of their potential customers are frequently accessing the Internet.

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