

SMES' ADOPTION OF WEB-BASED MARKETING: EMPIRICAL EVIDENCE FROM KENYA

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ABSTRACT

This paper explores adoption of web-based marketing services in Nakuru Municipality, Kenya. The technology adoption model, theory of planned behavior and diffusion of innovation were used to support the study. An explanatory survey research design was employed. Systematic sampling was used to select 98 SMEs from which, the first four customers who enters to the premise at the arrival of the researcher were selected, providing a sample size of 396 respondents. The study findings indicated that perceived ease of use, perceived usefulness and positively determine the adoption of web-based marketing services, while perceived cost negatively affected adoption of web-based marketing services. The findings indicate that perceived ease of use, perceived usefulness and perceived cost are major determinant of adoption of web-based marketing services. Thus, the study recommends consideration of the four major determinants while firms are launching any new web-based marketing services.

Key words; *Adoption, Web-Based Technology, Perceived Cost, Perceived ease of use, Perceived usefulness*

1. INTRODUCTION

It is widely accepted that employees in small business suffer from a lack of knowledge and skills. This lack of skills means that small companies will miss out on new business opportunities. This is even more evident with respect to the adoption of Internet marketing in Small and Medium Enterprises (SMEs) (Mullins et al, 2007).

Web provides exciting new opportunities for SMEs to extend their business to the global market place. However, introducing web-based marketing into SMEs and combining both off-line and on-line marketing campaigns is not an easy process (Chaffey et al., 2002). This process requires that decision-makers and marketing specialists acquire new skills.

Introducing web-based marketing requires that decision-makers and marketing specialists acquire new skills. While admitting their lack of skills and knowledge in embracing the Internet as a new media for marketing activities, most of the SME believed that training of managers and employees in Internet marketing could considerably contribute to their marketing success and they could achieve further benefits.

According to Ferneley and Bell (2006) previous studies have utilized a variety of theoretical frameworks including Roger's Perceived Attributes of Innovations (PAI) model, the Technology Acceptance model (TAM) and the theories of reasoned action and planned behavior (Hoffman and Novak, 1997; Keeny and Marshall, 2000). More recently, researchers have started to focus on the willingness of businesses to adopt the web for both general and marketing specific (purposes, recognizing that not all businesses will immediately appreciate the advantages of the new technology (Dubelaar et al., 2005; Ferneley and Bell, 2006; Lefebrve et al., 2005).

SMEs have always been recognized as an important segment of the economy and will remain the backbone of economic development in many countries throughout the world (Chong and Lin, 2008). Creative use of the Internet may allow SMEs

to capitalize on market opportunities (Maguire et al., 2007). Smaller firms have been much slower than larger ones in adopting the Internet and e-commerce and also relevant research has been slower in developing countries (Fillis and Wagner, 2007). Most of these studies focus on the barriers that small companies can face in their adoption of the internet as well as the benefits they can realize. Others emphasize the importance of the internet especially for small businesses.

Key themes include barriers to adoption (Kartiwi and MacGregor, 2007), the micro-enterprise and Internet use (Dandridge, 2000) and entrepreneurship and the Internet (Colombo, 2001). ICT including the web is believed to be the most cost efficient tool that can aid companies to gain bigger markets and be able to compete with their larger counterparts in attracting customers to their products and services (Tan et al., 2009). Only a limited number of studies have attempted to analyze the factors that lead small companies to either adopt or not adopt the web for marketing purposes and the level of web adoption by these companies.

However, According to Jutla et al. (2002) SMEs are estimated to account for 80 per cent of global economic growth. Could it be that many of these SMEs have got their online strategies completely wrong? May it even be the case that many SMEs simply do not have an online strategy? Ten years on from the popularisation of the internet, it is surprising that the majority of SMEs don't seem to understand online marketing and many fail to make the most of marketing opportunities that exist online (Fisher 2007; Beckinsale & M. Levy 2004; Tetteh & Burn 2001).

2. LITERATURE

2.1 Perceived Cost and Adoption of Web-Based Technology

Price/costs is one of the single most important factor that influences the consumer adoption of innovation (Alam, Musa and Hassan, 2009). Perceived financial cost with reference to adoption of Web-Based Technology relates to cost of availing the services to customers, time saving and effort. Cost factor may consist of initial purchase price (handset fee), ongoing usage cost (subscription fee, service fee and communication fee), maintenance cost and upgrade

cost (Luarn and Lin, 2005). The lower the transaction charges as well as service fees the higher the rate of adoption.

Pagani (2004) stated that price or cost factor was one of the main determinants of 3G services adoption. Anil *et al.* (2003) also stated that cost is one of the factors influencing the adoption of e-commerce in Singapore. In addition, Wei *et al.* (2009) argued that perceived cost is one of the barriers that prevent Malaysian from using e-commerce.

The cost of adoption is an important factor in the adoption and utilization of the Web (Ernst and Young, 2001). Generally, the higher the costs adoption of the innovation, the slower the pace of innovation expansion is likely to be (Mansfield, 1968; Davis, 1979). The cost factor was studied by various Information System (IS) researchers (Seyal and Rahim, 2006; Premkumar *et al.*, 1997; Drury and Farhoomad, 1996; Cox and Ghoneim, 1996) and found direct and significant relationship between cost and adoption of technology. The lower the cost of adoption the higher the new innovation such as the ICT will be adopted by the company and vice versa. Perceived cost is another independent variable included in the framework. The reason perceived cost is included in the framework is because it plays an important role for SMEs in determining adoption of ICT in their business. The SMEs will less likely adopt ICT when its initial set-up cost is high (Dixon *et al.*, 2002). Poon & Swatman (1996) and Reynolds (1994) stated that small businesses often have difficulty in obtaining financial resources. Any new technology like ICT may be considered too expensive to many SMEs because of their lack of financial resources (Poon and Swatman, 1999). Tidd (1997) expressed that SMEs face specific problems in the formulation of their innovation strategies due to their limited resources and range of technological competencies.

In any situation implementing ICT into SMEs need a huge amount of start-up cost. However, a ready-to-use online package integrating a new system into an existing system is very expensive for SMEs thus increase their financial burden (Mehling, 1998). According to Duncombe and Heeks (2001), survey on US SMEs found that 90 % of the survey SMEs lack of finance and skills are the main constraints for organization to utilize ICT. Some of them cannot afford to buy a computer or make efficient use of it in the short or even medium period of time.

H₀₁: Perceived cost had no significant effect on adoption of web-based technology

2.2 Perceived ease of use and adoption of web-based technology

According to David (1989) Perceived ease of use is defined as the degree to which a person believes that by using a particular system would be free of effort. An individual's perception of web-based technology as easy to operate will lead to automatic adoption. However, if customers perceive web-based technology to be complex, then adoption rate will be very slow.

Attitude plays a major role in an individual's mind as far as simplicity of a new system is concerned. This is demonstrated by Beiginia *et al.* (2011) who revealed that ease of use among other factors plays an important role in attitude towards the adoption of web-based technology;

Kumar and Ravindran (2012) found that perceived ease of use was not significant factor but rather it represents cognitive beliefs formed by second hand information. Also, Perceived ease of use was found to have an insignificant effect on consumer intention to use m-commerce (Wei *et al.*, 2009). Therefore, it was hypothesized that perceived ease of use has no significant effect on the adoption of mobile financial services.

There have been several studies explaining the user acceptance of internet marketing through the Technology Acceptance Model (TAM) (David, 1993; David, 1998; Pam, 2002) which points out that perceived ease of use and perceived usefulness affect the intention to use

H₀₂: Perceived ease of use had no significant effect on adoption of web-based technology

2.3 Perceived usefulness and adoption of web-based technology

The adoption of *web-based technology* for marketing is viewed to be of great benefit to the users because they can enable them to make several transactions anytime anywhere. Perceived usefulness (PU) is defined as the degree to which a person believes that using a particular system would enhance his or her job performance (David, 1989). He further found that perceived usefulness has a strong correlation to user

acceptance of information technology that the perceived usefulness on behavioral intention is different in different countries.

In the past, researchers (e.g. Koufaris, 2002) have validated the construct of PU and they were found to influence the intention of potential Internet shoppers. However, study on Internet retailing from the TAM perspective is limited; nevertheless the PU construct still garnered tremendous support from many other technological applications. For example, Horton et al. (2002) asserted the existence of a positive influence of PU on intention in Intranet media. Additionally, Agarwal and Prasad (1999); Chau and Hu (2002); Davis, et al. (1989); Hu et al. (1999); Igbaria et al. (1995); Igbaria (1993); Mathieson (1991); Mathieson et al. (2001); Moon and Kim (2001); Ramayah et al. (2002); Venkatesh and Davis (2000) also reported that PU is significant and positively influences the behavioral intent. Hence, it is expected that;

H₀₃: Perceived usefulness had no significant effect on adoption of web-based technology

3. RESEARCH METHODOLOGY

Explanatory Survey design was employed in this study to investigate the factors affecting adoption of web based marketing. The study used Nassiuma, (2000) sample size formula where sample of 98 SMEs was selected. Systematic sampling was used in this study to select 4 customers, to assure randomness and avoid bias issue. The study employed structured questionnaires as instruments of data collection.

3.1 Measurement of Variables

A total of 16 questions were developed to capture the four adoption factors under investigation. Each question was measured by five-point Likert scale. For instance, “1” denoted as strongly agree, “2” denoted as agree, “3” denoted as neutral, “4” denoted as disagree and “5” denoted as strongly disagree and statements will be positively stated.

A total of four questions were developed to measure the actual behavior of adoption. Cao and Mokhtarian (2007) stated that actual e-shopping behavior mainly includes three dimensions: adoption, spending, and

frequency and most studies examined one or more of these three dimensions directly while a few studies constructed a latent variable to measure actual e-shopping behavior. Frequency of using *web-based technology* and the future plans to increase the usage was measured using a five point ordinal scale.

Table 3.2: Questionnaires Sources and Number of Items

Constructs	Items	Sources
Perceived Ease of Use (PEOU)	4	Davis (1989); (Kumar and Ravindran, 2012)
Perceived Usefulness	(PU) 4	Davis (1989);(Kumar and Ravindran, 2012)
Perceived financial cost (PFC)	4	Poon (2007); Wei et al. (2009)
Adoption of web-based technology financial services	3	Board of governors of the federal reserve system, March (2012)

Source: Author (2013).

Analysis of data was done using descriptive statistics specifically mean and standard deviation. Inferential statistics was Pearson correlation coefficient and multiple regression analysis

The multiple regression models were explained as follows.

$$y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 Z + \varepsilon$$

Where;

y- This is web-based technology financial services adoption.

α -This is the constant of an equation.

X_1 = Perceived financial cost

X_2 = Perceived Ease of Use

X_3 = Perceived Usefulness

Z= customers age

$\beta_1, \beta_2, \beta_3, \beta_4$, - These are the coefficient of regression for web-based technology such as perceived ease of use, perceived usefulness, and perceived financial cost respectively.

ε – This is random error term.

4. DATA ANALYSIS AND DISCUSSION

This section presents the analysis of the data and discusses it accordingly in relation to the hypotheses and with the aim of achieving the objectives stated.

4.1 Normality of Data and Multi-collinearity

This study involves a relatively large sample (98 SMEs) and therefore, the Central Limit Theorem could be applied and hence there is no question on normality of the data. In order to determine the presence of multicollinearity among independent variables in this study, the study calculated both Tolerance test and Variance Inflation Factor (VIF) (Kleinbaum et al, 1988). The results of this analysis are presented in Table 2, where values of tolerance are more than 0.2, while all VIF values are well below 10. Thus, the measures selected for assessing independent variables in this study do not reach levels indicate of multicollinearity. The acceptable Durbin – Watson range is between 1.5 and 2.5. In this analysis Durbin – Watson value of 1.722, which is between the acceptable ranges, show that there were no auto correlation problems in the data used in this research. Thus, the measures selected for assessing independent variables in this study do not reach levels indicate of multicollinearity

4.2 Descriptive and Correlation Statistics

Table 1 indicated low level of adoption of web-based technology, while perceived cost, perceived ease of use and perceived usefulness was very high among the SME customers regarding adoption of web-based technology. In addition, from the table it is clear that there is positive and significant relationship between the various independent factors and adoption of web-based technology financial services at 0.01 level of significance. The table shows that perceived ease of use contributes up to 49.1% to the change in the adoption of web-based technology in marketing services, perceived usefulness contributes 46.8%, and perceived cost contributes 16.5% to the change in adoption of web-based technology in marketing services

4.3 Test of Hypothesis

Table 2 showed the direct effect of the independent factors on the adoption of the web-based technology. The model summary indicated that the value of R-square of the model was 0.339 which indicated that the model contributed 33.9% of the total variation in the adoption of the web-based technology (adjusted R-square = 0.332). This represents less variation than expected although the model was shown to be significant considering the F-value of 44.839 with a p-value of 0.000 at α value of 0.05.

The value of $\beta_1 = -0.165$ (p-value = 0.001 which is less than $\alpha = 0.05$). This implies that we reject the null hypothesis stating that there is no significant relationship between perceived cost and the adoption of web-based technology marketing services. In addition, the effect of perceived cost is stated by the t-value = -3.222 which implies that the effect contributed by the estimated parameter related to perceived cost is over -3 times that contributed by the error associated with the parameter. Thus, there was a significant relationship between perceived cost and adoption of web-based technology marketing services. As pointed out by Alam, Musa and Hassan (2009), price/cost is one of the single most important factor that influences the consumer adoption of innovation. These findings agree with those of Kimenyi and Ndung'u (2009) who argued that the rapid growth of web-based technology is evidenced by great need for low-cost financial services.

Findings showed that perceived ease of use was significant with a p-value of 0.000 considering the standardized coefficients where the t-value was 7.775 which showed that perceived ease of use contributed over 7.7 the amount of variation contributed by the error due to it. These findings indicate that we fail to accept the hypothesis stating that perceived ease of use has no significant effect on the adoption of web-based technology financial services. These findings agree with those of Puschel, Mazzon and Hernandez (2010) who state that the perceived ease of use resulted in a medium effect size from the framework applied to web base marketing users as well as Wang *et al.* (2003) who found out that there was significant effect of ease of use on behavioral intention to use in web based marketing services. However, Kumar and Ravindran (2012) found that perceived ease of use was not significant factor but rather it represents cognitive beliefs formed by second hand information which agrees with the fact that the respondents were not decided on the use of website and that the skewness value was negative.

Table 2 also shows that $\beta_3 = 0.278$ (p-value = 0.000 which is less than $\alpha = 0.05$). This implies that we reject the null hypothesis stating that there is no significant relationship between perceived usefulness and the adoption of web-based technology marketing services. This indicates that the rate of adoption of web-based technology marketing services is 0.278 units with each unit increase in perceived usefulness. In addition, the effect of perceived usefulness is stated by the t-value = 5.195 which implies that the effect contributed by the estimated parameter related to perceived usefulness is over 5 times that

contributed by the error associated with the parameter. Thus, there was a significant relationship between perceived usefulness and adoption of web-based technology financial services. These findings agree with those of David (1989) who found out that perceived usefulness has a strong correlation to user acceptance of information technology and those of Shin, (2010) who found that perceived benefit has influence on user acceptance of mobile payment system.

5. CONCLUSION AND RECOMMENDATION

The purpose of this study is to investigate adoption of web based marketing in the SMEs of one county (Nakuru County) in Kenya. This study also contributes to and extends our understanding of the web based services as means for marketing. The findings based on the TAM model provide relevant findings that perceived ease of use, perceived usefulness, and perceived cost significantly influences customer decision to use web based marketing by SMEs. The research was done under theoretical framework developed based on the previous study. Further, multiple regression model explains 33 per cent of the variance in SMEs customer intention to use web based marketing services.

SMEs adoption of the ICT is invaluable. From the study findings, it was shown that the various factors that affect the adoption of web-based technology marketing services were significant. It has already been pointed out that successful efforts in the adoption of web-based technology marketing services have to be enhanced by ensuring that the customers gain confidence in the services. This can be achieved through ensuring that the issues related to cost are addressed by ensuring that the cost of initial purchase price (handset fee), ongoing usage cost (subscription fee, service fee and communication fee), maintenance cost and upgrade cost (Luarn and Lin, 2005) are lowered to attract more customers. In order to receive greater responses towards web based marketing services by SMEs adoption, it is recommended that relevant authority should educate and provide financial support to SME owners and encourage them to do the same to their employees. . Another way to enhance the to use of Web Based marketing services in the SMEs sectors, that the government should enforce standardized, consistent and uniform policies in all SMEs sectors, agencies or subsidiaries in implementing ICT system. As it is found in this study, respondents mentioned web

based marketing services is a complex system, the system should be made as user-friendly as possible as not all users are familiar with computers and the Internet, especially the old SMEs. Providing online help and giving end users the choice of their preferred language will ease their usage.

This study was confined on the adoption of web-based technology marketing services. However, Baker, Al-Gahtani and Hubona (2007), pointed out that there was a significant effect of age and gender as moderating variables on attitude, subjective norm, and perceived behavioral control as they affect behavioral intention to use technology, though the finding with respect to age was not unexpected. Thus, gender comes in as one of the important moderators in the adoption process. Thus, further studies should be carried out to establish the moderating effect of gender and age on the adoption of web-based technology marketing services. Other aspects that should be considered are those concerning other characteristics of customers such as the background of the customer which include income and sizes of households. This would enable the service providers to develop services that can effectively and efficiently cater for the needs of the various cadres of potential users and thus expand their market niche.

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Table 1 Descriptive and Correlation Statistics

	Means	Standard Deviation	Adoption	Perceived Cost	Perceived Ease of Use	Perceived Usefulness
Adoption	2.22	0.776	1			
Perceived Cost	4.1	0.613	0.491**	1		
Perceived Ease of Use	4.001	0.748	0.468**	0.541**	1	
Perceived Usefulness	3.7	0.763	0.155**	0.042	0.258**	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 2 Multiple Regression Model

	Unstandardized Coefficients	Standardized Coefficients			Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.467	0.313		1.493	0.136		
Perceived cost	-0.181	0.056	-0.165	-3.222	0.001	0.726	1.378
Perceived ease of use	0.613	0.079	0.433	7.775	0	0.609	1.641
Perceived usefulness	0.314	0.06	0.278	5.195	0	0.663	1.509
R Square	0.339						
Adjusted R Square	0.332						
F	44.839						
Sig.		0					

Dependent Variable: Adoption