Impact of Technology Adoption and Its Utilization on SMEs in Ghana

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Abstract
The study used a quantitative approach to identify technology adoption and its utilization effect on market performance of small and medium enterprises in Ghana, La-Nkwantanang municipality. The study combined the construct Of Technology Acceptance Model and Innovation Diffusion Theory to identify some factors which influence small and medium enterprises to adopt and use internet technology. Furthermore, the study examined some factors which also hinder the adoption and utilization of internet technology among small and medium enterprises. Finally, the study determined the relationship between in internet technology usage among small and medium enterprise and market performance. A sample size taken by the researchers was 100 from the small and medium enterprises in Madina La-Nkwatanang municipality. The researchers used structured questionnaires to gather primary data which was analyzed using smart PLS and SPSS and the following results were obtained perceived ease of use, perceived usefulness of internet technology, compatibility and cost effectiveness are some of the factors that influence the adoption and utilization of internet technology, however, there is a positive relationship between internet technology usage and market performance.

Keywords: Adoption, Internet, Market Performance, SMEs, Technology, Utilization.

I. Background
Computer technology has revolutionized human society. Large-scale computerization, perpetuation of the internet, and the worldwide scope of the web has made dissemination of information quick and broad. The internet provides a new economic environment in which digital business can be conducted. Therefore, as more consumers spend more time on the internet, it is crucial for businesses to use online, interactive communications to affect consumers directly at all stages of the consumer decision process and thus to strengthen offline marketing efforts. However, the definition of technology is subjective to individuals understanding of the meaning of technology, but technology is typically understood as a body of scientific knowledge used in the production of goods and services. However, technology can also be interpreted as investment in equipment and production machinery which ultimately can lead firms to grow in sales. Many people perceive 'acceptance' and 'utilization' of technology to have the same meaning. In fact, in the literature 'acceptance' does not have a unique definition. Technology acceptance model (TAM) (Davis, 1989) describes 'acceptance' as 'user's decision about how and when they will use technology'. Martinez-Torres et al. (2008), notice that initial use (acceptance) is the first critical step toward e-learning, while sustainable success depends on its continued use (utilization). Thong and Yap (1995) defines technology adoption in small and medium-sized enterprises (SME's) as applying computer hardware and software solutions that provides support of operation,

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management and decision-making in organization. SME's are also driven to adopt appropriate internet technology for the purpose of improving their internal processes, improving their product through faster communication with their customers, and better promoting and distributing their product and services. Its success is due to the fact that technology has become the heart of economic growth.

Today's business world has been deeply influenced by internet technology adoption. The utilization among business is widespread since technology is rapidly changing global production, work and business methods, trade and consumption patterns of enterprises and consumers. The use of technology can improve business competitiveness with internet providing numerous opportunities for SME's to compete equally with large corporation. There is general agreement that factors driving technology adoption depend on the nature of technology, suggesting that a one-size-fits-all approach is unsuitable and that factors driving the adoption of specific technologies require specific attention (Johnson, 2010). With the advent of global competition, technological advances and demographic changes, the roles of small business have become more important.

Currently, small businesses are increasingly adopting and utilizing technology due to the advent of personal computers, tablets and mobile phones. Leaders who are positively disposed towards e-commerce deployment encourage and support the innovations (Tarafdar and Vaidya, 2006). The information age has transformed how business operates. Business now requires quick response to change consumer and client demands of companies in Ghana's Economy and the world as a whole. Small medium enterprises are equipped to meet this challenge. The internet is a new development that has changed ways and manner of doing things, in commerce, trade, agriculture, and manufacturing and government services. It is to be adopted by business as a matter of responding to world dynamics.

An SME in Ghana would be defined as having annual turnover of between $23,700 and $2,370,000 (Gibson & Van der Vaart, 2008). The Ghana Statistical Service considers firms with fewer than 10 employees as small-scale enterprises and their counterparts with more than 10 employees as medium and large-scale enterprises. Ironically, the Ghana Statistical Service in its national accounts considers companies with up to 9 employees as SMEs (Kayanuala and Quartey, 2000). The significant contribution made by the small and medium-sized enterprise (SME) community worldwide to employment, regional development and innovation is well established. Unfortunately, SMEs are also subject to high rates of business failure and such rates are likely to exacerbate due to the current global economic hardships. Innovative strategies are clearly needed within the SME sector to improve survival, growth and effective deployment of information and communication technologies (ICT) is likely to be a critical part of such strategies (Jones, 2011). Successful small businesses often face a major challenge when they grow into a new space either moving to a new location or increasing the size of the current one. As they expand, they need an IT infrastructure that keeps pace with their growth (Matt, 2016).

SME's play a major role in economic development throughout the employment creation and income generation. SMEs are the most important source of job creation in the US economy as it is reported that nearly 98 percent of all businesses are classified as SMEs (Neumark et al, 2011). Small businesses are seen to be imperative in stimulating entrepreneurial development, contributing to the transformation of the traditional sector into a modern one, creation of employment, reducing rural and urban migration and serving as the training ground for managerial skill acquisition (Akande, 2013). In spite of exponential growth of technology within SME's, the rate of technology adoption by these businesses have remained relatively low (Mac-Gregor and Vrazalic, 2005) and this makes SME's generally have limited access to the market and hence obtain low market share which affects market performance.

This study examined the factors that affect technology adoption and its utilization, the extent to which the technology adopted affects market performance of SME's at Madina la-Nkwantanang municipality. Researchers in several studies have identified benefits of technology adoption and its utilization by SME's in developing Countries as a means of business growth. As cited by Ghobakhloo, et al (2011), today's technological progressions, the implementation and application of Technology is a significant driving force behind many socioeconomic changes (Dierckx and Stroeken, 1999). Studies have revealed that, large organizations generally have the ability to adopt technology, whereas SME's that are desirous to adopt are handicapped by financial and human resources but are seeking to improve competitively. Nowadays, both large organizations and small and medium-sized enterprises (SMEs) are seeking ways to reinforce their competitive position and improve their productivity (Premkumar, 2003). Although the use of technology has become no news presently thus a competitive necessity, technology still represent a considerable investment for SME's that usually lack such funds. Besides, SME's usually do not have the appropriate skills available in-house and thus, have to train existing staff or outsource which is perceived by them as an additional overhead cost which reduces net profit. This study examined the role of technology on market performance.

2. Study Area

Ghana is a country located along the Gulf of Guinea and Atlantic Ocean, in the sub-region of West Africa, only a few degrees north of the Equator, therefore giving it a warm climate. Ghana is geographically closer to the "center" of the world than any other country even though the national centre, (0°, 0°) is located in the Atlantic Ocean approximately 614 km (382 mi) south of Accra, Ghana, in the Gulf of Guinea. The research was limited to SME's in the Madina la- Nkwantanang Municipality, their

adoption and utilization of internet technology. The study was limited to one hundred (100) retail shops which was chosen based on convenient sampling.

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Source: African Map images

(It is a non-probability sampling method where individuals are chosen on a convenience basis i.e. people who are easy to reach and would allow sharing information with.) This work makes various contributions to the literature on the acceptance of technology within the internet scope. First, it provides a complete and chronological view of the evolution of the two most popular models of acceptance and use of technology, from the 1970s. From a theoretical point of view this study combines the construct of the TAM and IDT models which influences owners and managers of a business to adopt and utilize the internet and from an empirical point of view it debates improvements in the explanation of use of technologies as a key indicator for a high market performance resulting in business growth. It is essential for any survey that the study population be clearly defined and according to Collis and Hussey (2003) this is as precisely defined set of people or collection of items which is under consideration. The target population was all registered SME's in la-Nkwantanang municipality, Accra, Ghana

Source: Ghana net.com

3. Literature Review

A number of theories and literature are available with reference to the topic under consideration. The object of this section is to review these theories and also to bother this work on the existing literature. For this purpose, this section is thus, divided into two sub sections- theoretical literature and empirical literature. While theoretical literature will explain the various concepts and theories from relevant textbooks and existing literature articles, empirical literature will attempt to evaluate previous work on this topic and also examine the extent to which existing empirical evidence buttress or otherwise disagree with the findings of this work.

Venkatesh et al. (2003) proposed the unified theory of acceptance and use of technology (UTAUT) to explain what encourages people to accept and use technology in the workplace. Venkatesh et al. (2003) posited four major constructs that influence acceptance and use of technology: performance expectancy (which describes how much users believe the technology will aid them in their work), effort expectancy or the perceived ease of using the technology, social influence (which describes subjective norms relating to technology use within the social environment) and facilitating conditions or the structural features of the environment (such as training, support, and access to technology). But for the suitability and purposiveness of our work, the technology acceptance model (TAM) and the innovation diffusion theory (IDT) were the main two theories that were fused to better explain the acceptance and utilization.

4. Technology Acceptance Model (TAM) and Innovation Diffusion Theory (IDT)

This is an information systems theory that models how users come to accept and use a technology. The technology acceptance model (TAM) is one of the central theories in technology Adoption research (Davis, 1989). TAM suggests that two beliefs, namely, perceived usefulness and perceived ease of use, are instrumental in explaining user's attitude and intention to use new technology. Its main advantage over others is that the two related beliefs can be generalized across different settings. Thus, many argue that TAM is the most robust, parsimonious and influential model for explaining technology adoption behavior (Elliot and Loebbecke, 2000; Rao Hill et al., 2011). Indeed, since its development, it has received extensive empirical support through replications (Venkatesh et al., 2003).

A major theoretical limitation of TAM is the "exclusion of the possibility of influence from institutional, social and personal control factors" ((Elliot and Loebbecke, 2000, p. 49). Thus, the suitability of the model for predicting general acceptance needs to be re-assessed as TAM constructs do not fully reflect the specific influences of technological and usage-

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context factors that may alter acceptance patterns (King et al.,1994). TAM models in the last decades have been widely used, extending their application to a multitude of technologies, especially to web site applications. TAM models have found a lot of support within the literature. Proof of this are more than 4,100 citations inside the Social Science Citation Index database in November 2013, and more than 17,600 identified by Google Scholar for the article of Davis (Davis, 1989). Over time, the TAM model has been implemented in a variety of contexts, beyond the mere acceptance of computers in the workplace. Therefore, TAM has become well established as a robust, powerful, and parsimonious model for predicting user acceptance.

TAM is complementary to the innovation diffusion theory (IDT), integrating common constructs and ideas (Moore and Benbasat, 1991). The IDT theory plays an important role in increasing adoption intention and actual adoption of technology. Innovation by definition includes change, either in the media we use or the means by which we engage a traditional process. Based on the IDT theory, the innovation attribute compatibility was examined in this study. IDT considers the social systems and behavioural processes by which people adopt new technologies, stating that the individuals' perceptions of relative advantage, trialability, observability, complexity, and compatibility of a technology affect adoption (Rogers, 2003). Extensive research has shown the applicability of IDT across various contexts (Agarwal and Prasad, 1998), leading to a research stream arguing the need to integrate TAM and IDT, acknowledging similarities between the two when investigating ICT adoption (Cheng and Cho, 2010). In particular, relative advantage, that is, the perception of superiority of new technology against its predecessor, is closely related to perceived usefulness, while complexity determines the perceived difficulty of usage and is directly associated with TAM's perceived ease of use (Cheng and Cho, 2010; Koenig-Lewis et al., 2010). Given the overlap between IDT and TAM, this research integrates the TAM constructs of perceived usefulness and perceived ease of use with IDT's compatibility construct and cost effectiveness. Trialability and observability are not considered since previous research has not consistently confirmed their relevance in technology adoption (Koenig-Lewis et al., 2010).

Perceived usefulness is "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 14). That is, prospective adopters assess the consequences of their adoption behaviour based on the ongoing desirability of usefulness derived from a technology (Venkatesh and Davis, 2000). In fact, technology adoption research suggests that technology that does not help individuals carry out their jobs is unlikely to be received favourably (Fang et al., 2005). Usefulness is important because it has been found to have a strong direct effect on the intention of adopters to use the technology (Davis, 1989; Dwivedi et al., 2009).

Perceived ease of use is the "degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 14). Perceived ease of use may contribute towards performance whilst lack of it can cause frustration and impair technology adoption (Venkatesh and Davis, 2000). The impact of perceived ease of use on user's intention to adopt a technology has been documented well in the literature. However, its role in TAM research remains controversial. For example, Fang et al. (2005) found that the nature of a technology may influence its perceived ease of use. In fact, perceived ease of use can be explained by usability characteristics which have been empirically validated by Lederer et al. (2000).

Compatibility have been shown to be an important driver of acceptance in consumer contexts (Vijayasarathy, 2004) and is commonly defined as the "degree to which the innovation is seen as consistent with potential users existing values, previous experiences and needs (Wu and Wang, 2005, p.721), also according to Roger (1983) compatibility refers to the degree to which innovation fits with the potential adopter's existing values, previous practices and current needs. The greater the fit between the individual work style and technology, the more likely acceptance is going to occur (Saaksjarvi, 2003). In this study, compatibility means that if the technology is seen as a well-suited to the current way of working, individual is likely to be motivated to integrate it into their activities (Meuter et al., 2005). Empirical confirmation of the impact of compatibility on technology acceptance is mounting, with studies confirming a direct impact on compatibility on intention to use mobile commerce (Cheng and Cho, 2010; Koenig-Lewis et al.,2010). For instance, Brown and Russell (2007) highlighted the effect of compatibility on the adoption of radio frequency identification technology in the South African retail sector and argued that for the RFID adoption and implementation to be successful, it is necessary that organization develop a flexible IT infrastructure that will be able to accommodate RFID systems. Hsu, Lu and Hsu (2007) found the significant effect of compatibility in MMS adoption in the groups of potential MMS user and indicated that they will adopt MMS if they feel that using MMS in compatible with their values and beliefs.

Cost effectiveness; Previous research highlighted the importance of cost in the adoption and utilization of the technology (Ernst and Young, 2001) and found direct and significant relationship between cost and adoption of technology (Alam and Noor, 2009). Studies have found cost effectiveness to be an important variable in the adoption of new technologies (Chong and Chan, 2012; Premkumar and Roberts, 1999). The internet is suitable for SMEs if it requires low cost, low barriers to participation and low level of IT skills required to use them. Dixon et al. (2002) argued that the SMEs will less likely adopt ICT if its initial set-up cost is high. In the context of Malaysia, Alam (2009) found the cost of adoption having a significant effect on internet adoption among SMEs. In contrast, Tan et al. (2009) found that cost had no significant effect with the ICT adoption. In a similar study by Alam and Noor (2009) perceived cost was found to have no direct impact on ICT adoption.

However, the internet is a cost-effective technology and organizations can have direct communication with customers at relatively low costs (Kaplan and Haenlein, 2010), it is most likely for an organization to use it.

From the above, findings show that the main determinants of adoption of ICT are the size of the firm as indicated by firm employment, formal registration, and if a manager has some internet training. Another study also suggested that, technology satisfaction model (TSM) by including 'user satisfaction' rather than 'actual usage', since in a mandatory environment technology 'usage' is determined by the user satisfaction, that is why the empirical results suggest that perceived loss of control has a negative effect on user satisfaction and perceived market performance is influenced by user satisfaction and perceived usefulness. The third study, found that without dynamic capability for managing the resource, technology adoption will be less effective. Consequently, manager should provide some supporting "hardware" content such as externalities, resources and leadership, and should improve firms. Relating the various empirical studies to our work, it is seen that SMEs adopting technology can be viewed from whether the technology is compactible to the aims and objectives of the firm, if the technology is cost effective. Also, the utilization of the technology can be very effective and efficient if the firm has the available internal and external resources to support the adopted technology.

5. Methodology
This section highlighted the means by which we would obtain the information needed for the research. It gives vivid description about the research design, target population, research instruments, primary and secondary data, sampling techniques, validity and reliability and data analysis.

6. Research Design
The research design is the blueprint for satisfying goals and giving knowledge to answer the research purpose (Cooper & Schindler, 2011). According to Saunders, Lewis, and Thornhill (2012), the purpose is most often exploratory, explanatory or descriptive. As this study is to examine the relationship between internet usage and sales performance it is therefore an explanatory study, which attempts to explain the reasons for the phenomenon (Saunders, Lewis, & Thornhill, 2016). Hence, the researcher tries to use the social capital theory or at least the hypotheses to account for the relationships (Cooper & Schindler, 2014).

Yin (2003) states that there are five different strategies in collecting and analyzing data to serve as empirical evidence, namely, experiment, surveys, archival analysis, history and case studies, and each can be used for exploratory, descriptive and explanatory research. Since this study was based on the verification of relationship, data collected from a large sample size to enable generalization, the survey approach was deemed appropriate (Saunders, Lewis, & Thornhill, 2009). According to Collis and Hussey (2013), a survey refers to a methodology where participants are drawn from a population and studied to make inferences about the population. Thus, a survey is a method for acquiring information about the characteristics, actions, or opinions of a substantial gathering of individuals, alluded to as a populace (Malhotra & Birks, 2007). Survey designs might be recognized as cross sectional or longitudinal contingent on whether they reject or incorporate unequivocal thoughtfulness regarding a period measurement (Robson, 2002). For this study the researchers adopted a cross-sectional survey research design which facilitated the collection of primary data through structured questionnaires. The study was conducted in la Nkwantanan municipality, Accra.

7. Data Analysis
Data was organized and processed using SmartPLS version 3.2.3 and IMB Statistical Package for Social Sciences (SPSS) 21. The IBM SPSS was used for descriptive statistics including frequency tables, measures of central tendency and regression. Smart PLS 3 was used for partial least squares (PLS) structural equation modelling (SEM) to examine the structural component of the measurement and the structural model (Hair, Sarstedt, et al., 2014). From a more applied angle, PLS could be considered as a family of regression-type data analysis methods (Sanchez, 2015). According to Jöreskog and Wold (1982), PLS is well suited to handle highly complex predictive models and is helpful, compared to covariance based structural equation modelling (CB-SEM), when analysing predictive research models that are in the stages of theory development (Gimbert, Bisbe, & Mendoza, 2010). Another advantage of the PLS SEM approach is that it has no assumptions about data distribution (Hair, Sarstedt, et al., 2014; Vinzi, Trinchera, & Amato, 2010). PLS is also a good alternative when the sample size is small (see in Hwang, Malhotra, Kim, Tomiuk, & Hong, 2010; Wong, 2010; Hair, Sarstedt, et al., 2014), thus, PLS-SEM can be utilized with much smaller sample sizes, even when the models are highly complex. However, Hair et al. (2013) indicated that sample size can be determined by the following factors in a structural equation model design:
- The significance levels
- The statistical power
- The minimum coefficient of determination (R^2 values) used in the model
- The maximum number of arrows pointing at a latent variable

7.1 Analysis and Presentation of Findings

This chapter summarizes the data collected and the statistical treatment of analysis, using the methodology espoused in the previous chapter. The study sought to examine the relationship internet technological adoption and its utilization on market performance of SME. One hundred and three (103) questionnaires were administered managers and owners of SME at La-Nkwatanang municipality using a purposive sampling technique to ensure that those with knowledge of internet usage where selected

7.2 Demographic Information

In this section, the study presents the profiles of the respondents, this is important as it provides data regarding research participants and is also necessary for the determination of whether the individuals in a particular study are a representative sample of the target population for generalization purposes (Lee & Schuele, 2010).

Table

Measure		Frequency	Percent (%)
Gender			
	Male	54	52.4
	Female	49	47.6
Age			
	18 – 25	36	35.0
	26 - 35	29	28.2
	36 - 45	18	17.5
	46 – 55	13	12.6
	56 +	7	6.8
Business type			
	Trading	30	29.1
	Manufacturing	10	9.7
	Hairstyling	14	13.6
	Dressmaking	8	7.8
	Carpentry	5	4.9
	Other	36	35.0
Position			
	Owner	61	59.2
	Manager	42	40.8
Level of education			
	No qualification	6	5.8
	BECE	8	7.8
	SHS	18	17.5
	Vocational/Technical	24	23.3
	Tertiary	47	45.6
Number of employees			
	No employees	15	14.6

1-2 employees	23	22.3
2-4 employees	29	28.2
5-6 employees	12	11.7
7 + employees	24	23.3

From the table above, out of a sample population of 103 respondent, 53 were males representing 52.4% of the total sample population while 49 respondents representing 47.6% were females.

With respect to the age groupings of respondents, 36 of them fell within 18-25 years representing 35%, 29 for 26-35 years representing 28.2%, 18 for 36-45 years representing 17.5%, 13 for 46-55 years representing 12.6%, and finally 56 years and above for 7 representing 6.8% all out of a sample population of 103 respondents.

Following the type of business operated by the respondent SME's trading amounted to 30 representing 29.1%, manufacturing amounted to 10 representing 9.7%, hairstyling amounted to 14 representing 13.6%, dress making amounted to 8 representing 7.8%, carpentry amounted to 5 representing 4.9% and other businesses amounted to 36 representing 35.0%, all out of a sample population of 103 respondents. Looking at the position of various respondents I the various SME's, owners of SME's amounted to 61 representing 59.2%and managers amounted to 42 representing 40.8%, all out of sample population of 103 respondents. Considering the level of education of various respondents, respondents with no qualification amounted to 6 representing 5.8%, respondents who had Basic Education Certificate amounted to 8 representing 7.8%, those who had Senior High School Certificate amounted to 18 representing 17.5%, those who had Vocational Or Technical Certificate amounted to 24 representing 23.3% and finally those who had Tertiary Certificate amounted to 17 representing 45.6%. In respect to number of employees of SME's, respondents with no employees amounted to 15 representing 14.6%, those who fell between 1-2 employees amounted to 23 representing 22.3%, those who fell within 2-4 employees amounted to 29 representing 28.2%, those who fell within 5-6 amounted to 12 representing 11.7%, and those who had more than 7 employees amounted to 24 representing 23.3%.

7.3 Reliability Analysis

Prior research has stated the importance of testing the validity and reliability of the measurement, since the structural model may be meaningless unless it is established that the measurement model holds (Bagozzi & Yi, 2012; Jöreskog & Sörbom, 1996). Therefore, the assessment of the measurement models is the first step in any SEM process as it ensures that statements (unobserved variables) are actually measuring construct (observed variables). The measurement models were assessed with the use of three main criteria: (1) Convergent validity; (2) Reliability; and (3) Discriminant validity following the suggestion of Hair et al. (2013). Table 4.2 depicts the assessment of the measurement model. Convergent validity of the items was assessed by outer loadings and average variance extracted (AVE). The outer loading analysis is driven by the theoretical relationships among the observed and unobserved variables (Schreiber, Nora, Stage, Barlow, & King, 2006). With the outer loadings, the measurement model is revised by dropping items that shares a high degree of residual variance with other items (Koo, Chung, & Kim, 2015). All outer loadings for items are above 0.7, which are above the minimum threshold value of 0.70 as suggested by Hair, Sarstedt, et al. (2014). This, therefore, provided support for convergent validity (see in Hair, Sarstedt, et al., 2014). The AVE values of 0.737 to 0.863 are well above the minimum required level of 0.50, as suggested by Fornell and Larcker (1981), thus also demonstrating the convergent validity for all constructs. The reliability of each item was assessed by calculating Cronbach's alphas (CA) and composite reliability (CR). The reliability measures in this study are above the acceptable satisfactory levels (Cronbach's alphas > .70, composite reliability > .70) as recommended by scholars (Hair et al., 2013; Nunnally, 1978).

Factor Analysis

	Loadings	AVE	CR	CA
Perceived Usefulness		0.836	0.938	0.902
Using the internet in my job enables me to accomplish tasks more quickly	0.776			
Using the internet improves my job performance	0.785			
Using the internet in my job increases my productivity	0.778			
Using the internet enhances my effectiveness on the job	0.627			
Using the internet makes it easier to do my job	0.778			
I find the internet useful in my job	0.790			
Perceived Ease of Use		0.771	0.871	0.705
It is easy to learn how to operate the internet	0.734			
I find it easy to use the internet to do what I want it to do	0.737			
My interaction with the internet is clear and understandable	0.777			
I find the internet to be flexible to use for interaction	0.742			
It was easy for me to become skillful at using the internet	0.577			
I find the internet easy to use	0.740			
Compatibility and Cost Effectiveness		0.773	0.911	0.853
The internet is compatible with the company's infrastructure	0.756			
The internet usage is consistent with the company's beliefs and values	0.762			
The internet usage is consistent with the company's business strategy	0.767			
The internet is more cost effective than other types of marketing or customer service technologies	0.784			
Organization can avoid unnecessary cost and time by using internet	0.819			
The internet saves costs (time and effort in marketing, branding and customer service)	0.652			
Market Performance		0.737	0.893	0.819
Internet use has increased sales transactions	0.780			
Internet use has increased sales volume	0.734			
Internet use has increased sales enquiries	0.777			
Internet use has increased the number of customers	0.711			
Usage (Single-item construct)				
Frequency of usage per week	1.00		1.00	1.00

Source: Field Data, 2

Source; Field data,2019

7.4 Discriminant Validity

Discriminant validity was evaluated based on the Fornell-Lacker criterion and cross loadings. The Fornell-Larcker criterion suggested by Fornell and Larcker (1981) states that the square root of AVE should be greater than the correlation shared between the construct and the other constructs. The diagonals in Table 4.3 below presented the square root of the AVE and the correlations among constructs. The correlations among the constructs are less than the square root of the AVE, an indication of discriminant validity.

Table 4.3 Pearson's Correlation

| Construct					
Perceived Usefulness	**0.748**				
Perceived Ease of Use	0.562	**0.762**			
Compatibility and Cost Effectiveness	0.607	0.409	**0.858**		
Market Performance	0.409	0.575	0.562	**0.914**	
Usage per week	0.725	0.572	0.486	0.833	**1.00**

Source: Field Data, 2019

In table 4.3 above, the square root of AVE of every multi-item construct is shown on the main diagonal; usage behavior is a single-item construct.

7.5 Structural Model

Once the construct measures had been affirmed as dependable and substantial, the next line of action was the assessment of the structural model results. This included the evaluation of the model's predictive capabilities and the relationships between the constructs (Hair et al., 2013). This was done following Hair et al.'s (2013) suggestion for assessing structural models. A bootstrapping (5000 re-sample) was performed to assess the path coefficients' significance and R2, by applying the PLS–SEM algorithm (see in Rezaei & Ghodsi, 2014; Ainin et al., 2015). There are two main measures for assessing the structural model: these are the R^2 of endogenous latent values and the path coefficients (Ainin et al., 2015). The R^2 refer to the explanatory power of the predictor variable(s) on the respective construct. All the three constructs for this study, perceived usefulness, perceived ease of use and compatibility and cost effectiveness explain 70.7 per cent per cent of internet usage ($R^2 = 0.707$). Thus, the R^2 values shows that perceived usefulness, perceived ease of use and compatibility and cost effectiveness highly predicts internet usage of SMEs (see Chin, 1998). Whereas internet usage explains 38.7 per cent of market performance ($R^2 = 0.387$). The path coefficients were assessed based on signs and magnitude. The path coefficient and t-value for significant (alpha) level of 0.05 is 1.96 and alpha level of 0.01 is 2.575. The results show that, all four path coefficients statistically significant at 0.05 alpha level. Thus, there was a statistically significant relationship between perceived usefulness and internet usage at 95 percent significant level with a t-value > 1.96 (2.103). Perceived ease of use had a statistically significant relationship with internet usage (3.442) and, also compatibility and cost effectiveness had a significant relationship with internet usage (3.326) at 99 percent significant level with a t-value > 2.575. There was a statistically significant relationship between internet usage and marketing performance (2.01) at 95 percent significant level with a t-value > 1.96.
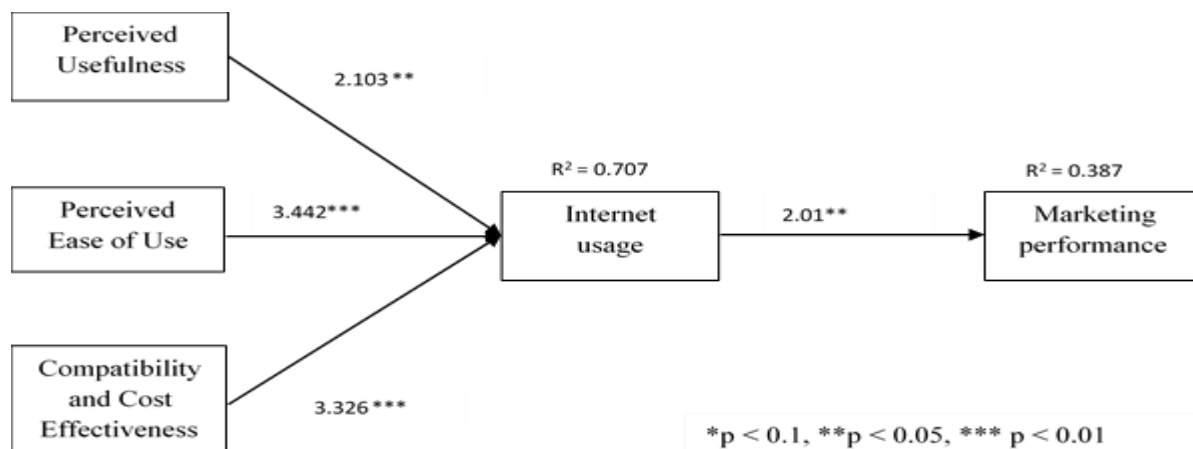
Source; Authors contract

7.6 Discussion

This study delivers several contributions. Findings of the study suggested that perceived usefulness, perceived ease of use and compatibility and cost effectiveness are significantly related to internet usage by SMEs in Ghana. This is an indication that before SMEs decide to use internet services, they must find it to be compatible with their existing infrastructure if not its SME would find it difficult to adopt the internet. Similarly, cost effectiveness is also significant since SME's in developing economies like Ghana have limited financial resources.

The result of the analysis also provides evidence that internet technology, positively impacts SMEs marketing performance. These processes include increase in sales transactions, increase sales volume, increase sales enquiries, and increase number of customers as it helps aligning customer needs with sales and marketing activities. In today's era the digital advertisements especially the internet usage has help reduced the cost of advertising to a great extent which is an important impact factor for SME's considering their financial constraints. Customer relations are improved by allowing customers direct access to information for which they would previously have had to telephone, or e-mail. Moreover, organizations can get the information about their potential customers through google search rating.

7.6.1 Hindrance of Technology Adoption among SMEs

The figure below indicates a detailed descriptive statistic of the results for respondents rating of their perception of the factors hinders technology adoption among SMEs identified in literature. However, in order to determine the most and the least, the researchers applied mean analysis on a 5-point scale. The minimum and maximum for all items were represented by1.00 (lowest)

and 5.00 (highest) respectively. This means that for every item a single or more respondents either selecting the lowest rating and the highest rating, indicating the lowest and the highest of perception for each item.

Hinders of SME Technology Adoption
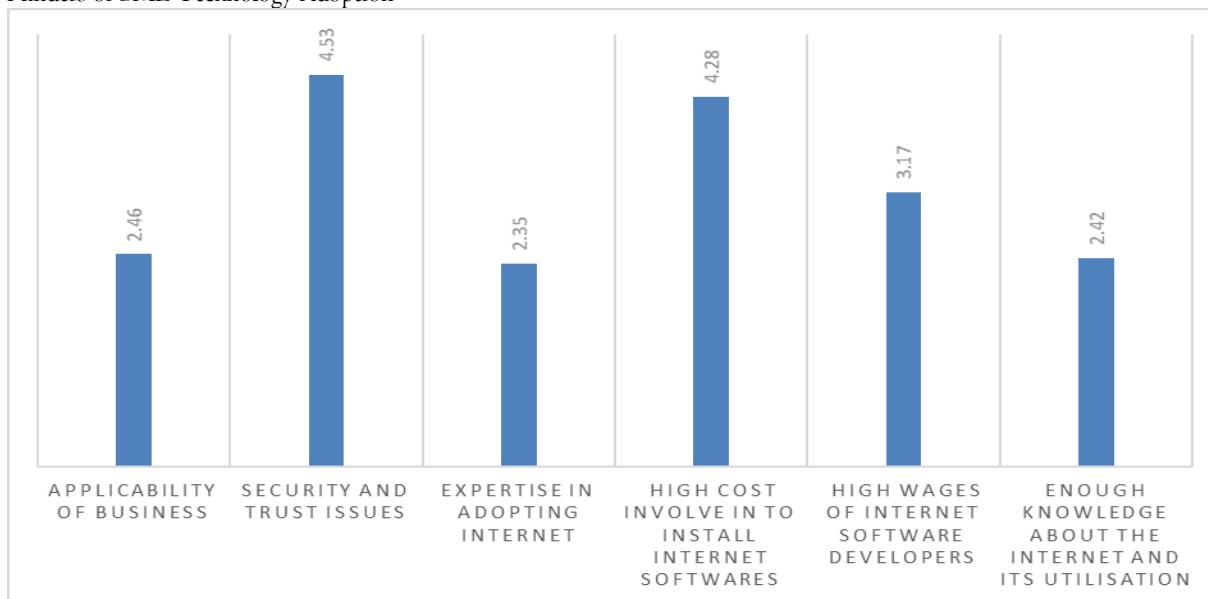
Source: Field Data, 2019

From the figure 2 above, the research has shown the following reasons why SME's feel reluctant to adopt and utilize technology. Security and trust issues was the major reason why SME's feel reluctant to adopt and utilize technology with the reason that internet technology can easily be hacked by their competitors in the same industry in order to gain competitive advantage over them. Also, the research revealed that High cost involve in installing internet software was the second reason why SME's feel reluctant to adopt and utilize technology. This is supported by the third main reason which hinders SME's from adopting and utilizing internet technology is the high wages of internet software developers. There's a scarcity of software developers in Ghana as compared to other countries. So, this scarcity turns to attach a prestige to them making them charge outrageously, so most SME's view internet technology as not applicable to the business since most of their production is on a lower scale. Enough knowledge about the internet and its utilization was proved by the research as a hindrance to SME's adopting and utilizing technology. The final hindrance of internet technology notified by the research is the expert in adopting internet technology. This hindrance is at a lower at a lower level.

8. Conclusion
The researchers used a quantitative approach to examine the impact of technology adoption and its utilization on SMEs in Ghana. The study combined the construct of Technology Acceptance Model and Innovation Diffusion Theory to identify some factors which influence small and medium enterprises to adopt and use internet technology. However, the following objectives were set for the study; to examine some factors which also hinders the adoption and utilization of internet technology among small and medium enterprises, to determine the relationship between in internet technology usage among small and medium enterprise and market performance. The researchers used structured questionnaires to gather primary data which was analyzed using smart PLS and SPSS and the following results.

The factors that influence the adoption and utilization of internet technology by SME's are perceived useful of technology, perceived ease of use (compatibility and cost effectiveness). The study shows that all the three constructs were statistically significant at a 0.05 alpha level. This indicates that, before SME's can decide to use internet services, they must find it to be compatible with their existing infrastructure, if not, SME's would find it difficult to use the internet. Also cost effectiveness is a significant factor to internet technology adoption and utilization since most business objective is to minimize cost and maximize profit.

The study also found the relationship between internet technology usage and SME's performance. The result of the analysis also proves that internet technology usage positively impacts SME's market performance. These include increase in sales transaction, increase sales volume, increase sales enquires and increase in volume of loyal consumers. Internet technology enables market research work which helps SME's align their products and services to consumer wants which in the long run increase

consumer loyalty. As internet technology is a global network where digital advertisement is made. SME's are able to reach a larger market which intends increase their market to wide range of consumers. Consumer relations are improved since consumers can have direct access to information through the internet via e-mail or telephone.

Finally, the study proved that the factors that hinder the adoption of internet technology by SME's are applicable of business, security and trust issues, expertise in adopting internet, high cost involve in installing internet software, high wages of internet software developers and enough knowledge about the internet and its utilization. The study proved that security and trust issues are the main hindrance to internet technology adoption and utilization. The internet is a global network which enhances accessibility for those matter hackers can easily break protocol or passwords to access business information. For that fear of hackers and virus corrupting files, SME's will rather not utilize internet technology. The study also found that expertise in adopting internet is the least hindrance to internet technology; this is because most of the employees of SME's have some form of educational background.

9. Recommendations

The challenges of SMEs have been a major limitation to fulfilling the expected goal as a backbone of any economy. Small and medium enterprises are currently the beacon of hope for the struggling economies that are looking for answers to sustainable growth and development. It is critical to recognize the impact of SMEs in the growth of the economy, which includes creation of jobs, increase of GDP (Gross Domestic Product), increase of standard of living, alleviating poverty and achieving societal goals. The growth of the nation's economy, the future of innovation and the sustainability of a growing national population rely on SME's. This is because the business serves as economic growth engine and they need access to the same technology as the big players to level the playing field, be flexible, responsive, and be able to anticipate consumer needs. According to Selase & worlanyo (2018), SMEs must be self-sustaining in all aspects of doing business. However, for SMEs to succeed, rapid innovations using modern technology in all aspect of doing businesses are not left out of the witness box, Creation of internet technology awareness, making internet technology a major field of study in institutions to enable training of web site developers. SMEs should seek to integrate into global network of doing business looking beyond local market alone, because of the advent of globalization. The researchers believe that when the above recommendations are well implemented, it will help improve the performance of SME's and in the long run enhance growth and development of Ghana.

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