

**A CRITICAL EVALUATION OF SMEs ATTITUDES TOWARDS INFORMATION TECHNOLOGY
INTEGRATION IN NIGERIA****Ugwu Chukwuemeka Ihesiene***Department of Business Management
School of Business and Economics
Atlantic International University
Hawaii, USA***Jackson Akpojaro****Department of Mathematical and Physical Sciences
College of Basic and Applied Sciences
Samuel Adegboyega University
Ogwa, Edo State
Nigeria**Corresponding author: Jackson Akpojaro; jakpojaro@yahoo.com**ABSTRACT**

Globally, there is a growing trend towards high dependence on knowledge, information, IT skills and application of these resources within business environments. It is alarming that many small and medium scale enterprises (SMEs) in Nigeria are either unwilling or slow at integrating effective IT innovations and practices as indicated by reduced rate of IT expert engagements, trendy preference for hiring computer biased non-professionals to drive IT function as well as infusion of IT units into other departments. This paper therefore discusses these attitudes of SMEs towards IT as bases for recommending remedial approaches to the phenomenon. While the research questions addressed the extent to which inadequate financing, competence, limited knowledge, management perception, nature of business and resistance to change constitute major factors contributing to these attitudes, it posits that trend reversal can be achieved through competitive IT education, adaptive IT framework for SMEs, establishment of IT office as a statutory requirement for SMEs, adequate funding, etc. The study employs a descriptive research design using 100 randomly selected registered SMEs across all sectors of the Nigerian economy. Simple percentages, mean distribution and Chi-Square were used in the statistical analysis to predict factors influencing the undesirable SMEs' attitudes towards IT. The research results identify management perception as the greatest factor contributing to SMEs' attitudes. Therefore, this paper is relevant and of interest to all who have a stake in Nigeria's emerging knowledge based economy.

Keywords: *SMEs, innovation, integration, information technology, sustainable development***INTRODUCTION**

SMEs are globally recognized as catalysts of sustainable economic development. In Nigeria, SMEs are widely accepted as keys to economic prosperity and sustainability of overall development (Agwu & Emeti, 2014). The SME sub-sector under-performance since the adoption of the economic reform framework in 1986 has been attributed to problems of funding, policy, multiple levies and taxation, hostile economic environments, management, infrastructure, innovation integration and skills gap, communication and so on. While advanced countries maintain competitive advantage through innovation, knowledge remains a key driver of productivity leading to enhancing importance of information, technologies and learning for economic performance (Zitek & Klimova, 2011). Nowadays, the main source of economic prosperity is not natural resources such as silver, gold, crude oil or land but human capital (knowledge & technology). This explains why, for instance, computer-mediated communication has inspired economies by providing the necessary fast interactions between businesses and persons regardless of geographical distance than any natural resource. Leonardi, Huysman & Steinfield, (2013) remarked that IT has impact on daily communication and provide framework for organizational interactions. In emerging knowledge driven economy as Nigeria, effective integration of IT innovations modifies virtually all aspects of any SME business: businesses outlook, brand image, talent hunt as well as reduction in labor mobility of top talents. It is therefore alarming that despite the huge benefits of information technology, most Nigerian SMEs display attitudes that discourage its best practices and development. The disastrous implication is that the key IT transformational advantages of partnership, corporate

image enhancement, transactional speed, and innovation, improved return on investment (ROI) and access to available talent communities remain untapped.

Despite huge transformational impact of IT innovations, SMEs continue to approach integration with lukewarm attitudes compared to the larger organizations. The reasons for differences are associated with the basic small business characteristics of limited information access (Guijarro et. al, 2009), lack of innovative management methods (Blili and Raymond, 1993), resource scarcity, and socio-legal constraints. Others defining characteristics of SMEs include; owner-manager influence, little appreciation for professionalism, dependence on contingency planning, support for informal strategies, resistance to change, and lack of articulated operational procedures (Dibrell et al., 2008; Morteza et al., 2011). It is behind this background that this study discusses SMEs attitudes towards IT innovations.

PROBLEM STATEMENT

Integration of IT innovation into business processes of SMEs is a major component of transformational strategy for advanced economies providing competitive advantage over developing countries like Nigeria. It is important to note that there abound evidences of high indices of overall growth for countries where SMEs adopt or display pragmatic attitudes towards IT innovations. The global ICT ranking of Nigeria in global competitiveness continues to decline, underscoring the magnitude of task in achieving vision 2020. The 2013 World Economic Forum (WEF) report on global information technology shows that Nigeria ranks 113 out of 144 countries surveyed for the Networked Readiness Index (Ajanaku, 2013). This alarming report exposes our technological unpreparedness, economic vulnerability, policy loopholes and slow integration of IT necessary to launch Nigeria into sustainable economic prosperity. The SME dispositions are perceived as largely responsible for our low ranking IT global competitiveness. The 2012 Enterprise Baseline Survey shows that SMEs account for half of the Nigeria's gross domestic product (Elebeke, 2012). In view of the forgoing; does a correlation exist between SME attitude towards IT innovation and viability of the sub-sector? In other words, are there any significant improvements in SMEs that display pragmatic attitude towards IT innovation via integration? What are the factors, if any, affecting the slow integration of IT innovations within the SMEs? These are the concerns this work seeks to address.

PURPOSE OF THE STUDY

This paper aims at investigating SMEs attitudes towards IT innovation. The study provides detailed information about the internal and external factors challenging innovation integration in SMEs. Identifying SME attitudes and their implication as a basis for recommending requisite corrective measures will be of interest to scholars, national policy makers, researcher and other stakeholders of sustainable development.

OBJECTIVES OF THE STUDY

The following specific objectives formed basis for this investigation:

- i) To determine the extent to which SMEs attitudes towards IT innovation affects business activities in Warri
- ii) To identify obstacles affecting adoption of IT innovations in their order of their inhibitions
- iii) To review current IT practices in SMEs in order to recommend requisite remedial actions.

RESEARCH QUESTION

The following research questions were answered in the course of this investigative study:

- i) Do Nigerian SMEs have poor attitude towards integrating IT innovation?
- ii) How can SMEs be encouraged to develop positive attitude to IT innovation?
- iii) What are the factors influencing SMEs attitudes to IT integration according to their order of inhibition?
- iv) What is the implication of SMEs attitudes on sustainability of the sub-sector?

RESEARCH HYPOTHESES

In this study, the basic assumptions of the researcher as stated below are inferentially obtained:

- i) Is there is a correlation between poor attitudes of SMEs towards IT integration and poor sub-sector performance?
- ii) What is the order of intensity for factors influencing the SMEs attitudes towards IT integration?

RELATED WORK

There are numerous studies and perspectives to the topic issues of SME attitudes and IT integration. Brady et al. (2002) suggested that such studies must take into account all relevant perspectives of IT for a meaningful study. This therefore presents IT in various perspectives of economic, managerial, and marketing of which coincide

with key aspects of any SMEs. In this study, IT derives its definition from viewpoint of Porter and Millar (1985) & Brady et al., (2002) that considers IT as a collective reference to spectrum of software, hardware, telecommunication and information practices, equipment, and business solutions employed to generate, analyse, process, distribute, receive, retrieve, store and transform information. Globally, advanced economies continue to be inspired by SMEs that integrate these IT innovations into their business processes. The altering of business aspects provide the desired agility SMEs in developing economies can leverage on for competitiveness and sustainable socio-economic growth. Sanchez et al. (2007) observed that SME economic contributions are enormous as they provide jobs and socio-economic development of host communities and recommended speedy integration of IT into SME business processes.

Global competition in IT industry provides numerous business solutions with outstanding improvements in cost of acquisition and capabilities of making every aspect of SME aspects competitive and innovative. IT is changing communication and coordination patterns as well as stimulating market interactions across SMEs boundaries (Summut-Bonnii and McGee, 2002). Many organizations are increasingly taking advantage of IT capabilities in bringing prosperity through enhanced competitiveness and increased productivity. In developing economies, SMEs cling to traditional business process due obvious characteristics of small businesses. It is pertinent to note that there are certain issues that must be considered before SMEs integrate IT successfully into their business processes. Leenders & Wierenga (2002) identified key considerations as follows: expected benefits of IT innovation over acquisition cost, competencies of IT end-users, interoperability with existing infrastructure, and IT support systems.

It is a key requirement to introduce the subject matter of IT integration into SMEs with copious foreknowledge on part of the stakeholders for proper management of expectations and associated risks of integration. Organizational receptivity, work culture, internal business ethics, ease of use and management openness to change are additional critical factors that should be considered.

In 2001, the Nigerian government approved the National Policy on Information Technology, alias "Use IT". This document revealed intention of the federal government to integrate IT into every facet of the national economic life – agriculture, health, tourism, investment, educational and banking sectors (FRN, 2001). It primarily recommended an initial grant of about \$158 million and two percent of country's national budget for document execution. This was a giant and all-inclusive initiative that needs political will and tenacity across successful administration to actualize its laudable mission and vision.

It is therefore observed that reluctance to accept IT innovation and change is sure recipe the underdevelopment of the SME sub-sector. The power of positive attitude to IT integration cannot be over stressed. Such attitudes inspires confidence in technology end-users, makes better SME adaptability, ensures top management commitment (Dong, 2001; Mchowan & Durkin, 2002), better stakeholders' expectation management, speedy conflict resolution, better risk identification and mitigation as well as greater chances of implementation success. Though related studies on IT innovation in SMEs are copious and available, it is hard to reconcile SMEs adopt a lukewarm attitude towards IT innovation since they struggle for global competitiveness. Government, as a key umpire in business arena, must act deliberately and in partnerships for survival of the SMEs through stimulating integration of IT innovation. It is against this background that this study considers empirically circumstances around IT integration in Nigerian SMEs.

SMEs ATTITUDES AND IT

The small and medium enterprises (SMEs) form integral parts of economic and transformational activities of any nation. It is pertinent to observe that SMEs contribution to economic prosperity will significantly be enhanced by integration of IT innovations since no business is shielded from global competition. In advanced economies such as European Union (EU), it is estimated that SMEs account for 99.8 percent of companies, generate 60 percent of GDP and employ 70 percent of private sector workers (Turner & et. al., 2012). This statistics underscores the urgent need for change in attitudinal posture assumed by SMEs towards IT innovations in order for Nigeria to actualize Vision 20:20. Innovations provide platforms for transformational experience in aspects of organizations and should form significant part of all economic activities. It is pertinent to observe that significance of timely integration of IT is yet to receive enough attention within Nigerian SMEs. There is a perceived correlation between attitudes of SMEs and level of overall development of an economy.

SMEs attitudes and perceptions are powerful in driving and supporting IT practices such as integration. These factors are viewed as central to the implementation of new technologies. To implement IT innovation efficiently in SMEs, all stakeholders must develop positive attitudes and view information technology as a transformational

tool for businesses. Though business environment has been revolutionized by information technology, and forces of for globalization and competition continue to dominate, most SMEs feel uncomfortable with innovation integration because use of IT challenges methods, roles and all aspects of business. For instance, IT project implementation may require change of role, staff downsizing from process review, further training and certifications, government agencies' attention, and business information exchange among so on. It is pertinent to observe that most small businesses tend to have positive attitudes to those IT innovations and practices that closely align with owner/manager objectives than business requirements. In SMEs, resistance to change is strong for obvious reasons and it can be reduced when the transformational benefits of integrating IT innovation are clearly understood by business owner/managers. There is a direct correlation between knowledge/time spent utilizing IT and SMEs attitudes toward technological innovation and vice versa. Increased knowledge and IT usage by SMEs remain the most formidable catalyst for SME positive attitude to IT innovation and practices.

In practice, there are some isolated IT practices regarding innovations that confirm poor SMEs attitudes and are as follows:

- Merging of IT function into other departments with attendant implication of reducing visibility of IT operations and benefits
- Preference for computer literate non-IT professionals who lack appropriate skills to deliver on innovation integration
- Use of outdated or pirated computer software, hardware due to low economies of scale
- Poor and inefficient IT practices due to non-regularized labor practices within the SME context
- Poor understanding of global business environment and impact of delayed assimilation of IT innovation on SME survival
- Poor compliance monitoring by responsible private and public agencies
- Poor handling of IT projects such as upgrades and migrations

Smart SMEs are increasing employing technological strategies for survival and continued relevance in the global business arena. Freeman and Soete (1997) succinctly outlined key technological integration options available to SMEs. These include:

- The choice of strategy is linked to the objectives of their executives and shareholders;
- Companies considering strategy options that respect their experience, business season and segment of activities;
- The companies may decide to use their technical, managerial and financial capacities to seek alternatives that maximize return on investments at short term or thinking about building a technological basis for the future;
- They may turn to alliances with different partners or act independently;
- They may acquire technological packages or start developing their own solutions; and,
- Such decisions depend on financial and human available resources, on the characteristics of the markets, on the technological dynamics and on the explicit or implicit strategy that the company decides to follow.

In Nigeria, SMEs employ various IT innovations aimed at increasing market share and strengthening competitiveness. A careful study identifies common SMEs activities as relating to IT integration:

- Integration of computer-mediated communication, such as social networks, into business processes such as marketing, customer service and sales
- Use of email, instant messaging and website facilities in improving the corporate image of the business
- Upgrade of existing infrastructure to a current and robust option such as migrating from Windows 7 to Window 8.
- Use of genuine operating system instead of patronizing pirated versions despite additional cost of the later choice
- Integration of online conferencing and manpower training into business processes
- Incorporation of internet facility at workplaces
- Official use of miniaturized computer systems such as Ipad, Ipods and iphones
- Outsourcing of IT support in line with best practices
- Establishment of autonomous IT office to regulate best practices within organization

FACTORS INFLUENCING IT INTEGRATION IN SMEs

Despite the huge benefits IT can offer SMEs, most SMEs in developing economies are slow to integrate IT innovations. This attitude of slow adoption is linked to knowledge divide between IT suppliers and SMEs. In the course of this study, it was observed that many factors affect SMEs dispositions towards IT integration. It is the exclusion of the perceived IT benefits from the SMEs that has been the bane of the sub-sector with its attendant implications on the overall national economy. The eleven key factors influencing IT integration in SMEs as observed include:

i. National Infrastructural Deficit

The poor communication infrastructure limits access of IT innovation via prohibitive cost. The obsolete public and private owned infrastructures are expensive and coverage is limited to urban areas such as communication networks and electricity supplies. This discourages SMEs from integrating IT innovation.

ii. Dearth of SME-tailored IT Innovations

It is observed that most IT innovations are based on larger companies who can afford robust budgets for implementations and not on SMEs. These solutions are often too expensive and complex for use in SME context. This is why SME sub-sector in developing countries are starved of benefits of IT and explains why developing economies like Nigeria lack the competitive edge in the global business arena.

iii. Management Perception

The management disposition challenges the capacity of SMEs to make requisite choice of technology based on benefits to the business. The mentality that IT is meant for big companies creates skepticism in mind of top management and hinders efficient integration. Top management attitude to IT innovation is related to their IT knowledge, experience, desire for competitiveness and innovativeness. The more experienced the top management on IT, the likely SME is willing to try new ways of doing things (innovations integration).

iv. Limited IT literacy

Though the SME owners may have strategic positive attitude towards IT innovation, the huge cost associated with training of illiterate IT end-users may hinder adoption of innovation to the detriment of the organization.

v. Resistance to change

Integrating IT into business process may be a painful decision and experience most SME owners may feel reluctant to undertake. For instance, the SME may be required in process of integration to lay off staff, change vendor-management understandings, change in staff roles and outsourcing of non-core business activities. This is very true for innovation that are cost-saving, efficiency-building capabilities as well as work measurement like ERPs.

LIMITED FINANCE

Inadequate financing is a formidable inhibition as it limits ability of most SMEs to purchase IT innovations that are critical to its business survival. It inhibits developing economies from engaging the full advantages of IT, especially as IT integration is not a one-off expense due to associated continuing maintenance, upgrading and end-user training costs.

RISKS

It is pertinent to observe that IT integration is associated risks and impact may be catastrophic to organization unless mitigated. Nguyen (2009) observed that appropriateness of IT innovation need be decided before implementing new IT. Failure to consider this may cause a situation Ghabakhloo et al. (2011b) referred to as asset sinkhole. Some of these risks are related to technical underperformance, implementation errors, and incompatibility problems.

MARKET PRESSURE

The global competition subjects all SMEs to pressure to continually invent new ways of doing things such as change management, customers' feedback, delivery systems and advertising services to ensure survival. SMEs strategically integrate IT innovations for different reasons due to variance between firms' functions in different business settings and their operations in varied ways (Nguyen, 2009).

IT SUPPORT NEEDS

SMEs are most likely to integrate innovations with support services within reach at cost-effective manner. Hence, a firm may develop negative attitude to IT integration if any of the following is the case:

- Perceived costly external support after integration such as Point of sales (POS) machines in some SMEs playing in the hospitality industry
- Low internal IT expertise to intermediate between company and external vendor
- Evidence of integration failures in similar SMEs that is verifiable;
- DeLone (1981) advised that external vendor support should be considered as essential before SMEs integrate technologies for areas they have no sufficient internal expertise.

GOVERNMENTS

Governments play key roles in stimulating SMEs' integration of IT through providing competitive national IT policy, tax and customs duty exemptions, favourable technology transfer policies, proxy technical partnerships, financial incentives, and controlled economic climate necessary for healthy competition; thereby providing some protection for the SMEs from stiff global competition.

NATURE OF SME

The characteristics of an SME influence its disposition towards IT integration. Such features include: age, industry, experience, information need, style of administration and locations. For instance, an SME in information-intensive industry with branches dispersed across a geographical area is more likely to integrate IT innovations than one that is labor-intensive and with only one branch.

Advantages of IT Integration in SMEs

IT integration into business processes provides four key advantages:

- Improved productivity and effectiveness of business aspects necessary for competitive advantage (Brady et al. 2002). Transactional and operational costs are reduced while business- to - business and business-to -customer interactions are reliable and fast.
- It is believed that adoption of new developmental models can be made easier, available and more adaptable.
- IT integration facilitates access to opportunities and business strategies necessary to increase market share (Corbitt, 2000).
- Increases human capital necessary to efficiently drive business competitively (Vilaseca, 2003).

The earlier enumerated form the bases for competitive edge of SMEs of the advanced economies of the world.

METHODOLOGY

Research Design

The researcher employed a descriptive research design in this study. Data were collected in order to determine SMEs' attitudes towards IT innovations and to evaluate their corresponding performances in concrete economic terms. It was adopted in order to enable the researchers administer questionnaire on a number of SMEs that forms sample of the population for inferential purposes.

Population

The population for this study consists of 70% of SMEs in Warri, Delta State, Nigeria.

Sample and Sampling Procedure

Seven hundred (700) questionnaires were administered across one hundred (100) SMEs and this number is considered a fair representation of the entire population. The simple random sampling method was employed in the selection of the samples.

Instrument

A research instrument (questionnaire) was devised as recording tool and administered on the respondents for the purpose of collecting information about the variables under investigation. The questionnaires as a primary data source gathered the required facts adequately with utmost confidentiality. Secondary data sources used by the researcher included books, internet, and personal interviews during site visitations. The questionnaire solicited respondents' opinion on SMEs' perceptions of IT innovation, IT practices, causes and effects of SMEs' negative and positive attitudes and way forward. Most questions were based on the five-point Likert scale which aimed at more definitive respondents' response, thereby increasing reliability and credibility of the study.

Validation and Reliability of the Instrument

The content validity of research instrument was established in conjunction with other experts from related fields who confirmed adequacy, relevance and comprehensiveness of instrument with respect to the research questions and hypotheses.

Data Analysis and Result Presentation

Seven hundred copies of the questionnaire were administered among the randomly selected 100 SMEs, 532 responses were retrieved at a response rate of 76%. This outcome is reasonable considering the research constraints of time interval, cost, and biases towards research process by business owners as well as geographical spread of the research environment.

Key Survey Results:

Table 1: This shows a survey response to ‘Nigerian SMEs have poor attitudes towards integrating IT innovations.’

Description	Code	Frequency	Percentage %	Cumulative Percent %
Correlation				
Strongly Agree	1	31	5.83	5.83
Agree	2	398	74.81	80.64
Undecided	3	19	3.57	84.21
Disagree	4	73	13.72	97.93
Strongly Disagree	5	11	2.07	100
Total		532	100	

Source: Field Survey, 2014

In table 1, 31 respondents representing 5.83% of the sample size strongly agreed, 398 respondents representing 74.81% agreed, 19 respondents representing 3.57% were undecided, 73 respondents representing 13.72% of sample disagreed with proposition and 11 respondents representing 2.07% strongly disagreed. Hence, the majority (80.64%) of the respondents agreed that Nigerian SMEs have poor attitudes towards integrating IT innovations.

Table 2: This shows a survey response to ‘There is a correlation between poor attitudes of SMEs towards IT integration and poor sub-sector performance.’

Description	Code	Frequency	Percentage %	Cumulative Percent %
Correlation				
Strongly Agree	1	25	4.70	4.70
Agree	2	264	49.62	54.32
Undecided	3	28	5.26	59.58
Disagree	4	198	37.22	96.80
Strongly Disagree	5	17	3.20	100
Total		532	100	

Source: Field Survey, 2014

Table 2 above indicates that 25 respondents representing 4.70% of the sample size strongly agreed, 264 respondents representing 49.62% agreed, 28 respondents representing 5.26% were undecided, 198 respondents representing 37.22% of sample disagreed with proposition and 11 respondents representing 3.20% strongly disagreed. Hence, the majority (54.32%) of the respondents agreed that there is a correlation between poor attitudes of SMEs towards IT integration and the SME sub-sector underperformance.

Table 3: This shows a survey response to ‘kindly rank factors influencing SMEs attitude towards IT integration in descending order. Assign one (1) to highest influence and eleven (11) to the least influence.’

Influencers	Sample Size	Mean	Minimum Ranking	Maximum Ranking
Management perception	532	1.63	1	3
Limited finance		1.92	1	5
Resistance to change		2.67	1	5
Risk		3.33	2	7
Market pressure		3.45	2	9
Limited IT literacy		3.89	3	9
Government		4.34	3	10
IT Support need		5.88	4	10
Nature of SMEs		6.34	5	11
Dearth of SME tailored innovations		7.03	6	11
National Infrastructural Deficit		7.55	7	11

Source: Field Survey, 2014

Table 3 presents a highly critical distribution of this study. It shows the eleven identified factors influencing SMEs’ attitude to IT innovation and grading order. Managerial perception has mean distribution value of 1.63 and therefore identified by respondents as the greatest inhibition in SMEs’ IT integration. Other factors in their descending order of inhibition are as follows: limited finance, resistance to change, risk, market pressure, limited IT literacy, government, IT support need, nature of SMEs, Dearth of SME tailored innovations, national infrastructural deficit.

Hypotheses Testing:

The hypothesis testing restates, validates and confirms dependability of investigative process. The statistical techniques employed are simple percentages, chi-square and mean distribution.

Hypothesis Test 1

H₀: There is no correlation between poor attitudes of SMEs towards IT integration and poor sub-sector performance.

H₁: There is a correlation between poor attitudes of SMEs towards IT integration and poor sub-sector performance.

Table 4: Contingency Table

	O	E	(O-E) ²	(O-E) ² /E
SA	25	106.4	6625.96	62.27
A	264	106.4	24837.76	233.44
U	28	106.4	6146.56	57.77
D	198	106.4	8390.56	78.86
SD	17	106.4	7992.36	75.12
Total	532			507.46

Whereas the Chi-square (X^2) test value at 5% significance level and 4 degrees of freedom is 9.49, the test statistic is 507.46. Decision rule is to reject H₀ and accept H₁ since test statistic (507.46) > critical value (9.49). Therefore, it was concluded that there exists a relationship between SMEs’ attitudes towards IT integration and underperformance of the SME sub-sector. This implies that SMEs will experience sustainable growth if they show positive attitude towards IT innovation integration.

Hypothesis Test 2

H₀: SME Owner’s perception and SME’s attitude towards IT integration are not related

H₁: SME Owner’s perception and SMEs attitude towards IT integration are related

The hypothesis tested is based on the response to the questionnaire statement; ‘SMEs integration of IT innovations are based on consistency with SME owners’ personal goals rather than corporate objectives.’

Table 5: Contingency Table

	O	E	(O-E) ²	(O-E) ² /E
SA	127	106.4	424.36	3.99
A	316	106.4	43932.16	412.90
U	23	106.4	6955.56	65.37
D	47	106.4	3528.36	33.16
SD	19	106.4	7638.76	71.79
Total	532			587.21

The Chi-square (X^2) test value at 5% significance level and 4 degrees of freedom is 9.49. The test statistic is 587.21. Decision rule is to reject H_0 and accept H_1 since test statistic (587.21) > critical value (9.49). It is convenient to conclude that SME owners' perception directly influences SMEs attitude towards innovation. That is, SMEs are likely to integrate IT innovations that are consistent in time with Owners' dispositions.

Table 6: A summary of other survey responses as provided by the 532 respondents

Response Solicitations	Responses			Conclusions
	Yes	No	Not sure	
The Operating environment and national infrastructural deficit negatively influence SMEs attitudes towards IT integration	253(47.56%)	247(46.42%)	32(6.02%)	The majority of the respondents do not consider infrastructural deficit and operating environment serious influencers
Government is doing enough to assist SMEs to avail of the potential benefits of IT innovations	312(58.65%)	205(38.53%)	15(2.82%)	Majority of the respondents believe the government is not doing enough to stimulate better attitudes to IT innovations among SMEs
IT innovation integration is more beneficial for larger companies than SMEs	433(81.39%)	89(16.73%)	10(1.88%)	There is an overwhelming indication that respondents believe that IT innovations are best for large firms.
I believe it is important for every SME to have an independent IT department with a functional head	216(40.60%)	308(57.89%)	8(1.51%)	Majority of the respondents do not see the need for an independent IT function.
Integration of innovations such as social networks, corporate email and internet facilities, teleconferencing will increase efficiency and productivity of SMEs	257(48.31%)	232(43.61%)	44(8.08%)	Majority of respondents affirms statement. It is pertinent to observe that more enlightenment on benefits of IT innovations is an incentive to change in attitudes.
SME Owner/Manager dictates what IT innovation to integrate	511(96.05%)	21(3.95%)	0 (0%)	This overwhelmingly confirms that SMEs' attitudes are determined largely by the SME Owners.
I consider IT integration as operationally risky, time wasting, costly and cumbersome for Nigerian SMEs	347(65.22%)	171(32.14%)	14(2.64%)	Most respondents do not have the right perception of IT integration.
IT innovation is generally a threat to any workforce and should be	409(76.88%)	111(20.86%)	12(2.26%)	Most of the respondents are indisposed to change

approached with a lot of caution				and therefore display poor attitudes towards IT innovations.
SMEs with positive attitudes towards IT innovation compete better than those whose attitudes are skeptical	421(79.14%)	93(17.48%)	18(3.38%)	It is ironical that most respondents while not disposed to change acknowledge the competitive edge IT provides to businesses.
Every SME needs an IT policy and annual IT budget to regulate IT practices and development in the organization	259(48.68%)	248(46.62%)	25(4.70%)	Majority of respondents affirm statement though those on the contrary are significant.

Note: The “**YES**” implies “Agree and Strongly Agree” and same for “**NO**” for “Strongly Disagree or Disagree”.

CONCLUSIONS

This study examined key factors influencing SME attitudes towards IT innovation integration in Warri, Nigeria. The research provides insight into numerous challenges towards desired SME perceptions necessary for development of this critical sub-sector of the Nigerian economy.

First, management perception was found to be the most inhibiting influence towards IT innovation integration. It is displayed via the following ways: mentality that IT innovation is not small business targeted, limited IT knowledge, experience, lack of stated annual IT budget, low drive for competitiveness and innovativeness. The more experienced the top management on IT, the likely SME is willing to try new ways of doing things (innovations integration). . Second, funding problem was discovered to be a formidable inhibition as it limits ability of most SMEs to purchase IT innovations that are critical to its business survival. It inhibits developing economies from engaging the full advantages of IT, especially as IT integration is not a one-off expense due to associated continuing maintenance, upgrading and end-user training costs. Third, resistance to change is a serious inhibitor to effectiveness integration of IT innovations in SMEs as it sabotages integration efforts. This is so because IT innovation may require change of roles, staff downsizing and distorts status quo in business operations for more elegant business methods and procedures. Fourth, the risk factor is a major concern as IT innovations are inherently risky to implement and as such risk identification and mitigation are key issues to be determined before integrating any innovations. Some of these risks include sabotage, access to privileged corporate information, integration failures arising from inadequate funding or skill gap on side of the IT vendors. Fifth, market pressure was observed as a key factor influencing SMEs attitudes towards integration. Global competition, of which no business is immune, causes SMEs to modify key business aspects to ensure business survival. IT is an efficient portal through which these changes are largely driven. Other influencers in their descending order of gravity as observed during investigation are limited IT literacy, government, IT support need, nature of SMEs; dearth of SME targeted innovations and the national infrastructural deficit.

The researcher concludes that for pragmatic SMEs’ attitudes towards IT innovation integration, the following approaches are required: competitive IT education, adaptive IT framework for SMEs, establishment of IT office as a statutory requirement for SMEs, adequate funding and so on. It is expected that this research will add to the accelerated SME sub-sector development as SMEs develop positive attitudes towards IT innovation and practices.

This research was constrained by time, high logistic costs arising from personal interviews across the city, and inherent poor respondents’ dispositions. The researcher considers outcome as reasonable for generalizations having analyzed retrieved data from 532 respondents out of 700 questionnaires administered.

RECOMMENDATIONS

The findings in this study confirms SMEs’ poor attitudes towards IT integration and the following are recommendations on way forward if the sub-sector must contribute significantly to Nigeria’s economic prosperity:

- i. Governments should stimulate SMEs’ integration of IT through competitive national IT policy, tax and customs duty exemptions, favourable technology transfer policies, proxy technical partnerships, and controlled economic climate necessary for enhancement of competitiveness;

- ii. Design of the IT integration frameworks should recognize local content, need and initiatives and should be business-based in approach than SME owner's personal goals;
- iii. SME sub-sector development stakeholders should ensure capacity development as a way of providing requisite knowledge, information, and skills necessary for effective IT integration;
- iv. Government should prevail on Corporate Affairs Commission (CAC) to make establishment of distinct IT office and headed by a core IT expert for regulation of IT practices as a key business registration requirement.
- v. Integration of IT innovations should follow project management principles as a means of ensuring implementation success via resource optimization, risk identification and mitigations;
- vi. Government should establish by act of parliament IT Management Offices (**ITMOs**) at all levels of government to regulate IT integration efforts of SMEs through necessary partnerships and collaborations with stakeholders;
- vii. Policy makers in government should produce a well articulated national IT development plan for proper alignment and convergence of all IT-based business development efforts;
- viii. Government should ensure a private-sector partnership aimed at improving on our national infrastructural deficits such as communication, electricity generations and so on;
- ix. IT suppliers should be encouraged to develop SME-targeted innovations as a means of improving the poor perception among stakeholders that innovation is beneficially for the large corporations;
- x. Government as a key umpire in development should advance initiatives in partnership with relevant local and international agencies (such as SMEDAN, banks, World Bank, IMF etc.) aimed at adequate financing of the critical SMEs sub-sector.
- xi. Building a responsive and adaptive IT education at all levels of Nigerian education to provide a competitive IT manpower to drive the innovations, practices and initiatives.
- xii. There is need to ensure the alignment of IT innovations by proper locating and structuring within the SMEs for effectiveness in enhancing the business processes and methods.
- xiii. IT innovation effectiveness and productivity should be measured and form bases for new investment justification and effective management.

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