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INFORMATION AND COMMUNICATION TECHNOLOGY: A PANACEA FOR ALLEVIATING UNEMPLOYMENT IN NIGERIA

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Abstract
The study explores information and communication technology: a panacea for alleviating unemployment in Nigeria. This nation that has been entangle with various issues of unemployment affecting most citizens. Many vibrant citizens with strong potential and zeal to contribute to the status of Nigeria are not cohort into the working class. There is need to acquaint themselves with the information and communication technology that add value to them. It has various opportunities for job seekers in the area of web design, business centre, graphic design; data programming etc .Unemployment creates negative impact on the standard of living of entire citizenry. Unemployed can be describe as numbers of the economically active population who are without work but available for and seeking work, including people who have lost their jobs and those who have voluntarily left work. The study adopts desk top opinion method with conceptual framework and utilized secondary sources to enrich the fact concerning this pertinent issue. The study signifies that information and communication technology is machinery that curbs unemployment. This paper attracts the following recommendations among others: Nigerian government should initiate information and communication technology center for the benefit of it citizenry and the youth should develop interest in acquiring more knowledge in information and communication technology.

Keywords: Information, Communication, Technology and Unemployment

Background to the Study

Information and communication technology has created impact in Nigeria. It has various opportunities for job seekers in the area of web design, business centre, graphic design; data programming etc. Information and communication technologies (ICT) are electronic technologies used for information storage and

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retrieval. Development is partly determined by the ability to establish a synergistic interaction between technological innovation and human values (Esharenana & Emperor, 2010).

Unemployment creates negative impact on the standard of living of entire citizenry. Unemployed can be described as numbers of the economically active population who are without work but available for and seeking work, including people who have lost their jobs and those who have voluntarily left work. International Labour Organization (ILO) defines the unemployed as numbers of the economically active population who are without work but available for and seeking work, including people who have lost their jobs and those who have voluntarily left work (World Bank, 1998). According to Fajana (2000), unemployment refers to a situation where people who are willing and capable of working are unable to find suitable paid employment. It is one of the macro-economic problems, which every responsible government is expected to monitor and regulate. The higher the unemployment rate in an economy the higher would be the poverty level and associated welfare challenges. An unemployed person is a person that is qualified for job (whether the job is physical or mental) and willing to work at the current rate of wages but does not find job. Along with unemployment are different dimensions to it, there are underemployment cases in which people can earn income that is inadequate to take care of their basic needs in terms of food, clothing and shelter. There are cases of disguised unemployment where people take up jobs that are not commensurate with their educational qualification and training, while the most serious case is one where some who are willing and ready to work do not find jobs (Monday & Johnson, 2013)

The new information and communication technologies (ICTs) are widely perceived as major tools for kick-starting ailing economies and consequently assist developing societies `catch up' with the developed world, including those groups that have lost out of the mainstream of development. (Levi, Inayatullah &Tony, 2013). Accordingly, information communication technology crises affecting the ranging levels of people's standard of living, poverty level has now gained the attention of economic observer's throughout the world. They have linked the problems of under employment and socio-economic crisis to information inadequacies. In this context, Information Communication Technologies (ICT) have been perceived as availability and accessibility of internet facilities, telecommunication equipment's and services media and broadcasting, libraries and documentation centres, commercial information providers, network-based information services and other related information and communication activities (Odufowokan, 2010).

ICT applications offer a number of opportunities for creating employment and alleviating poverty. Nevertheless, ICTs must not be perceived as panacea to all the ills of unemployment and poverty, but as a tool that can only be effectively used in

conjunction with adequate national policy frameworks and local measures aimed at employment creation and poverty alleviation. Information and communication technologies (ICTs) serve as new tools for escaping from poverty, empowering impoverished communities, and providing access to vital resources and information. By creating new jobs, reducing unemployment, establishing new distribution channels and providing new competitive advantages, ICT applications geared towards employment creation and poverty alleviation will eventually contribute to reducing the gap between the rich and poor in the third world countries (united nations, 2005) http: / / www.un.org / millenniumgoals / .
This paper tends to display information and communication technology: a panacea for alleviate unemployment in Nigeria.

Statement of the Problem

The issue of unemployment in third world countries has become bottleneck, which affect the standard of living in these countries. Many citizens of these nations are ever ready to work but job provision is not there. This issue brings unsecured economy. Protection of life and properties are not guarantee. As problem linger, it motivate the author of this paper to explore on information and communication technology: a panacea for alleviating unemployment in Nigeria. Many vibrant citizens with strong potential and zeal to contribute to the status of Nigeria are not cohort into the working class. There is need to acquaint themselves with the information and communication technology that add value to them

Objectives of the Study

The study attracts the following objectives:

1. To examine the impact of information and communication technology in Nigeria
2. To assess various ways information and communication technology creates employment to Nigerian.
3. To evaluate the benefit derive from information and communication technology by Nigerian citizenry.
4. To recommends the necessary action to be taken by government to actualize the prospect of information and communication technology.

Conceptual Framework

Nature and Prospects of Information and Communication Technology (ICT)

Information and Communication Technology can be defined as computer based tool used by people to work with the information communication processing needs of an organization. It includes the computer hardware and software, the network and several other devices -video, audio, photograph cameras, computer set, laptops, and so on, that convert information -texts, images, sounds motions and so on into common digital form (Odufowokan, 2010). Today, the role of the ICT in developed

and developing societies has become the subject of academic focus and research, regional and international seminars and conferences. As the new millennium approaches and as we contend with the expanded uses of the information superhighway, the interface between communication and development calls for serious reconsideration.

Many sub-Sahara Africa countries are expecting the information and communication technology (ICT) revolution to spur their economic development and transition into knowledge base information society's judges by existing ICT for development and ICT in education policies. Never the less, traditional education practice fails to support the use of these technologies for addressing the challenges of youth training and skills development. There are few area of modern work life that have not been subjected to continuous innovation through adopting new technologies in recent years (Hafkin and Taggart, 2011).

Information and Communication Technology (ICT) Jobs

There are various areas in which information and communication technology ameliorate employment problem. These are: Graphics centre, music studio, internet centres, computer training centres, web design, computer technician and business centres.

Graphic Centre

It is one of the area information and communication technology creates employment many unemployed people in third world country. Many Nigerian uses ICT tools like computers, scanners, and other software packages to design graphics. Such Nigerian provides service to some industries like printing press and creating animations for television station. Many young Nigerian have mastered graphics software like CorelDraw, Photoshop, photo paint other graphic tools (Bhatt, Painter & Shui-yang, 1999).

Music Studio

ICT has contribute to the economic wellbeing of third world countries in assisting the people to engage in music studio that involve in the rendering of service to musician, radio station and television stations. Most music that being produced presently has ICT input. This development is a cannon phenomenon in most developing nation. With this development, more individual are gainfully employed. Also, television adverts and programme are now been produced through the use of ICT tools. These tools are areas unemployment can be reduce (Jegede, 2012; Khurshid and Ghani, 2001).

Internet Centre

Internet centre is a centre where ICT tools are utilized. The centre provides internet services for people at a minimal cost. It is way of creating employment for job seekers. The centre serves as information Source Avenue in a nation economy.

Computer Technicians

ICT has created Job avenue for computer technicians to excel. Many people are now earning their living being technicians providing maintenance service for the computer users. Some of these computer technicians can compete anywhere in the world because there are good. This ICT job solve problem of unemployment among third world countries.

Computer Training

Computer training centre have played and still playing essential role in creating jobs and educating the knowledge based users. Moreover, the society in many developing countries like Nigeria, Kenya, south Africa and so on are gradually evolving into information societies that are aware of the latest development in information and communication technology. (Jegede,2012).

Web Design

Web designing is another way ICT create employment. In this contemporary era, many companies need web site address to transact business with their clients. Individual with zeal to add value can develop himself or herself in this ICT package.

Information and communication technology basic Contribution to Third World Countries

1 According to Levi, Inayatullah and Tony (2013) from the previous research posits that almost every interviewee considered ICTs as appropriate to their society for various reasons, even in the face of poverty. The reasons were as follows:
2 ICTs were generally seen as the basic tool for survival in the next century;ICTs were seen to enhance efficiency in the workplace;
3 There was a high belief in ICT ability to increase the ease and speed of social communication and at the same time obviates the problem of transportation;
4 ICTs help solve socio-economic problems;
5 Among university academics, ICTs help them reach out to colleagues in other parts of the world and keep them up to date with developments in their disciplines;
6 There was the belief that ICTs help to monitor crime in society, and
7 There was the ultimate belief that ICT usage will make Africa to become part of the global trend.

8 Online technology enables local doctors to consult with their international colleagues and other doctors in the scattered island communities;
9 The most appropriate technologies were seen as the ones that enabled the communities and organisations to communicate more efficiently (example was given of e-mail);
10 ICTs promote distance education at all levels;
11 Instantaneous availability of data through ICTs;
12 The future of education is heavily dependent on ICTs;
13 Internet access helps productivity, innovation and entrepreneurship to n flourish;
14 ICTs are essential for the knowledge era (Levi , and Inayatullah and Tony 2013).
15 ICTs are useful for job search by youths and promote employment: ICTs have a direct effect on the capacity building of impoverished communities, particularly in terms of promoting employment. Indeed, ICT tools play a major role in facilitating the search for jobs. Poor communities are able to benefit from comparable databases, particularly when these include information regarding less-skilled labour opportunities with low literacy or educational requirements. Such databases can be referred to as labour market information systems, which provide details of vacant posts and notify people via email of recently available opportunities.
16 Enhancing government services: ICTs can enhance government services by increasing access to public information and streamlining government procedures. E-government, in particular, is aimed at promoting the transparency of Governments, thereby increasing accountability and reducing corruption. E-government applications can be designed to help impoverished communities, by providing access to vital information on economic activities, for example, information regarding government subsidies, Crop production and livestock breeding (united nation, 2005) http;//www.un.org/millenniumgoals.

Theoretical Framework

The model of ICT benefit signifies that Information and communication technology is the architect of economic development by enhancing the standard of living of Nigerian. This concept has lure individual to engage in diverse skills as sources of employment to earn their living. These ICT jobs are Graphic Centre, Web Design, Internet Centre, Computer Technicians and Computer Training. The model is true representation of ICT jobs creation in Nigeria economy.

Graphic Centre
Web Design

Internet Centre
Computer Technicians

Computer Training
Model of ICT Benefit

Methodology

This paper adopts desk top opinion and utilizes secondary sources such as journals, textbooks etc to boost the theoretical fact of the study. The study is conceptual, using qualitative approach to show the significant of information and communication technology: a panacea for alleviating unemployment in Nigeria.

Conclusion

Information and communication technology is an initiative that tends to save third world countries from unemployment and security problem. It has shown us in the study, that many jobs can erupt form this technology such as web designing, computer technician, business centre, graphic designing, internet service provider etc. According to Levi , Inayatullah and Tony (2013) in his research "respondent commented: ICT help to do things better, they show a measure of development. And if we're going to be plugged into the world, particularly in the next century, on the continent of Africa and..., we necessarily must be part and parcel of the information age. And information technology is an imperative that Africa would miss at its own risk. Also respondents said: … we can't deny that the next century would be a knowledge century and the world is developing towards becoming more and more knowledge-intensive, and IT will be the technology for development of four aspects of man's activities: industry; manufacturing services; farming, agriculture and fisheries; and health services". The new communication technologies have their strengths and drawbacks, they should not be seen as common tools but as embedded in culture, economic tool and our mutual futures.

Recommendations

1) The youths [graduates and non-graduates] should also develop positive attitudinal change towards ICT in all endeavours. In addition, the youths should develop interest in acquiring more knowledge in information and communication technology.
2) Government should intensify efforts at advertising jobs vacancies, create ICT employment awareness, job matching, training of ICT teachers and lecturers in vocational sections

3) Government and Non-government organizations (NGOs) should conducting seminars on ICT, workshops and conferences on strategies that would enhance better living standard of Nigeria citizenry.
4) Procurement of ICT tools should also be minimized by subsidizing payments for easy possession and acquisition.
5) Government should regulate air time payment at the cyber café throughout the third world countries.
6) Nigeria government should initiate information and communication technology center for the benefit of it citizenry.

References

Bhatt ,N., Painter G. & Shui-yang T.(1999), "Can micro credit work in the united state".Harvard Business Review,November-December, 26-27

Esharenana E. A. & Emperor K. (March, 2010). "Application of ICTs in Nigeria secondary schools". Library Philosophy & Practice

Fajana, S, (2000)." Functioning of the Nigerian Labour Market". Lagos :Labonfin & Company.

Hafkin, N .& Taggart ,N.(2001). "Gender, information technology, & development countries". An analytic study. For the office of women in development, bureau for global programs. Field support & research, united states agency for international development. Retrieved on 5/05/2014 fromJune,http//www.usaid.gov/ wid/pubs/it01.hm.

Jegede, J.O. (2012)."The role of information technology & communication technology (ICT) In Entrepreneurship Development".Book of proceeding, 2nd school of engineering conference, July.

Khurshid, A. & Ghani, J. (2001). Lahore: "A public private partnership to enter the global IT market". Background paper, World employment report 2001. Geneva.

Levi, O., Inayatullah, S. & Tony, S. (2013). "Impact of New Information & Communication Technologies (ICTs) on Socio-economic & Educational Development of Africa & the Asia-Pacifice". Privatehttp://www.metafuture.org/Articles/icts.htm.

Monday, A. A. & Johnson A. A. (2013)".Graduate Unemployment in Nigeria". Entrepreneurship & Venture Capital Nexus.Journal of Economics & Sustainable Development, 4(9), 75.Available in www.iiste.org. Retrieved 30/05/2014

Odufowokan, B. A.(2010). "Information & communication technology (ICT) & Graduate unemployment in Nigeria". The 21st century challenges. International journal of creativity & technical development, 2(1-3).

United Nations, (2005).”Information & communication technology (ICT) for employment creation & poverty alleviation in selected escwa member countries”,United Nations millennium development goals. Available at: http://www.un.org/millenniumgoals/.e/escwa/ictd/2005/214. Retrieved 23/10/2014.

World Bank (1998). “Productivity & Unemployment in Nigeria” by Mike

Obadan & Ayodele F. Odusola. “Ibadan: National Centre for Economic Management & Administration”. (NCEMA). Available in www.cenbank.org/out/publications/.../rd/.../abe-00-10.pdf .Retrieved 23/04/2014

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RESOURCES AND MARKET DEVELOPMENT AS PREDICTORS OF ADOPTION OF DRYING TECHNOLOGY FOR TOMATO PRODUCTS BY MANUFACTURING SME's IN NIGERIA

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Abstract
Nigeria is a major player in the production of tomatoes in the World as it ranks thirteenth in 2010 of which much of it is lost annually as none of the local tomato processing SMEs utilize indigenous tomatoes but instead are all engaged in re-packaging imported paste which has limited local consumption rate when compared with dried tomatoes. Currently, sun-drying is the major method employed by farmers to dry their excess and its has been found to be inadequate to develop new market because of poor quality. Adopting drying technology at SMEs industrial level requires studies on resources and market development that can predict adoption in such situation. The objective of the study is to investigate how resources and market development predict adoption of drying technology for tomato products by tomato processing and allied SMEs in Nigeria. The study was exploratory and adopted a descriptive survey research design using stratified random sampling and structured questionnaire measured on a Likert scale. The results which were analyzed using SPSS package for multiple regressions would be useful to government policies, farmer's access, provide entrepreneur guide on resources and market development strategies to engage in such business.

Keywords: Resources, Market development, predictors of adoption, drying technology and tomato manufacturing SMEs.

Background to the Study

Nigeria is making effort to fuel domestic growth in processed tomato market from fresh indigenous commodities which had collapsed and no longer exist, a situation that has led her to be a net importer of tomato paste spending N11 billion annually (CBN, 2013). Incidentally Nigeria is a major producer of tomatoes which ranked her the 13th in World production and second to Egypt in Africa in 2010 (FAO Statistics 2011). However, up to 50% of harvested tomatoes get spoilt annually causing seasonal shortage and fluctuations in supply and prices. (Musa-Makama et al, 2005).

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In reviving tomato processing industries in Nigeria, Aminu et al (2013) had suggested the alternative use of drying technology (Pre-treatment, Solar system, mechanical devices or combinations and packaging) as against the current use of sun-drying that produce un-wholesome products (Oyebanji et al, 2011).

Incidentally, the results of consumer survey of tomato products among urban consumers in Nigeria indicate the pattern of consumption to be highest for fresh tomatoes followed by the combination of fresh tomato and dried only especially between the months of April and October yearly (Aminu et al, 2013).

However, consumers of dried tomatoes demand many of their original characteristics be retained i.e. colour, nutritional content and the level of anti-oxidant compounds which is only possible by use of technologically controlled drying mechanisms (Brooks et al, 2008). Globally, tomato powder is one of the most widely used secondary products in the food and beverage industry having applications in a host of food products e.g. seasonings and savories, sauces and dipping, soup mixes, snack foods, curries and gravies, beverages and baby food which has to be produced to industrial or international standards using technology (UNECE Standard DPP, 2007).

At present, none of the over 100 registered local tomato processing SMEs process from fresh indigenous tomatoes but are all engaged in re-packaging tomato paste imported from China due to its competitive advantage. (Uba, 2010). Should Nigeria government decide to reduce or ban importation of tomato paste today, many of them may collapse again hence the need to identify affordable alternative of using drying technology for possible adoption. Coincidentally, the transformation agenda 2011-2015 identified the need to exploit and utilize available agricultural resources and enhance the development and dissemination of appropriate and efficient technologies for rapid adoption in the processing value added chain (http://www.usgf.gov.ng). It becomes pertinent therefore to have knowledge of resources and market development strategies that may predict adoption of drying technology at the level of manufacturing SMEs to guide would-be entrepreneurs and adopters of drying technology for tomato products.

Several works of scholars have identified many determining factors to consider at bridges to technology adoption and these include resources as well as ICT usage, market dynamics and others. According to resource-based theory, individual level of skills as a resource have been shown to influence organizational competence and business capability to adopt (Caldepira and Ward, 2013), while the means-end chain theory relates the choice/adoption of market oriented product to consumers and benefits accrued through market development strategies (Gutman, 1986, Sondergaard, 2013).

Statement of the Problem

The transformation agenda of government 2011-2015 desires to utilize it's abundant agricultural resources by adoption of efficient technologies in the process of value added processing chain of indigenous commodities. The situation is even more daring with indigenous tomatoes where current efforts are being made to fuel domestic growth of processed tomato products to replace imported paste as well as seek for alternative processing technique like use of drying technology at industrial level to meet global quality competitiveness of product, more so that none of the registered tomato processing SMEs participate in industrial dehydration of tomatoes leaving farmers alone to continue to use sun-drying for their excesses despite its inadequacies. (Oyebanji et al, 2011)

To achieve this requires knowledge of the influence of the resources and market development strategies that may predict adoption at that level hence the gap for this study.

Objectives of the Study

1) To determine how resources predict the adoption of drying technology for tomato products by SMEs in Nigeria.
2) To establish the influence of market development in predicting adoption of drying technology for tomato products by SMEs in Nigeria

Research Hypotheses

Ho1: Resources do not significantly predict the adoption of drying technology for tomato products by SMEs in Nigeria.
Ho2: Market development does not significantly predict the adoption of drying technology for tomato products by SMEs in Nigeria

Literature Review

Grant (2001) describes firm resources that include relevant skills of individuals employees, capital equipment, patents, brand names, finance, market share and service capabilities including infrastructures.

Some relevant theories of resources to technology adoption include theory of Human capital which according to Lulfermann and Keasler (2002) is viewed as the capacity to adopt in a changing environment and workers have to adopt to this. Papageorgion (2000) explored a model in which growth is determined by a combination of human capital and technology adoption. Only countries or firms that posses sufficient know-how that allow them to adopt exciting innovation and grow fast.

Mercer (2008) conducted a study of the possibilities and pitfalls of using solar drying in developing countries at the individual farm level using tomatoes and identified lack of skill workers to handle the component of technology transfer and therefore recommended training modules for food industry workers as potential recipients for training in order to make an in-road into creating a base for future technology transfer and uptake. Mhazo et al (2012) in collaboration with the University of Reading in the United Kingdom conducted a study on the constraints to small-scale production and marketing of processed food products in Zimbabwe and identified the following constraints to effectively process and market fruits and vegetables to include appropriate processing and handling equipment, processing skills, packaging materials and marketing information.

Christopher (2010) on the Impact of Microfinance on SMEs in Nigeria revealed that significant number of the SMEs benefitted from MFIs loan even though only few of them were capable enough to secure the required amount needed towards promoting their market share, product innovation, expansion including technology adoption for competitive advantage.

Market development is the expansion of the total market for a product or company by (a) entering new segments of the market (b) converting non users into users and / or increasing usage per user (www.businessdictionary.com). The Means-end chain Theory (MEC) of consumer behavior is based on the assumption that consumer demand products because of the expected positive consequences of using products (Sondergaard, 2013). The theory is widely used in consumer research and for the development of market (advertising) strategy. The model has been developed which builds on positioning products in terms of personal relevance to the consumer (Gutman,1982).

Murad and Thomson (2011) on external environmental factors influencing the Technology Adoption – Diffusion Decision in Malaysian Manufacturing SMEs found the following factors to influence adoption of new technology: Customer demand, competitive, Malaysian Government regulation and economy. Others are new geographical market, new product development or packaging, new distribution channels and different pricing policies to create a new market segment.

Furthermore, the above review and other relevant research theories were used to derive the conceptual framework for the study which include resource-based theory / model (Calderin & Ward, 2001), Human Capital theory (Lulfermann & Kesster, 2002), Technology Adoption and Growth theory (Papaeorgion, 2000) and Conceptual Model for Means-End Chain theory (Gutman, 1981). The review guided the conceptual frame work in Fig. 1

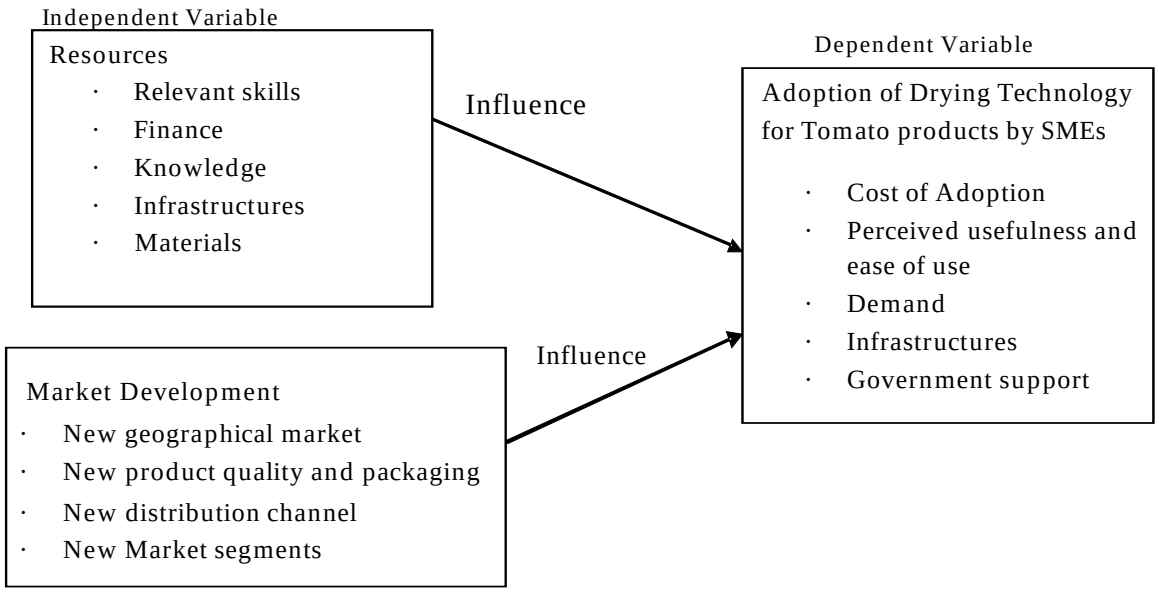

Fig. 1 Conceptual Framework for Adoption of drying technology by SMEs

Methodology

The Research Design

In this study, an exploratory descriptive survey research design was adopted to investigate the two objectives. The design was used to explore and help picture current perspectives of the SMEs and to yield preliminary qualitative and quantitative information on current situation as expressed by respondents which were used to explore or predict probable determinants (predictors) with respect to resources and market development being investigated. The use of the research design is justified by the exploratory nature of research since there are few or no studies in the study area. The focus is on gaining insights and familiarity in this preliminary stage for detail investigation in the future (Anam et al, 2014).

Target Population

In this study, the target population used was the Chief Executive / Owner, Managers or designated staff of the 118 registered tomato processing and allied SMEs in Nigeria (NAFDAC, 2010). The main reason being that they are the decision makers and therefore the only one that can authorize response from the perspectives of their enterprise or organizations especially on adoption decisions / issues as required by the studies.

Sampling Technique

Pilot test of content validity was through consultation with 3 experts in measurement and evaluation, statistics and management whose comments were used to adjust the questionnaire before sending out to 8 Chief Executives / Managers of tomato processing SMEs whose feedback were adjudged satisfactory. In the main survey,

the Cochran's formalar (1977) was used to obtain the most efficient, representative sample size. Thus:

$$n = ¼ (Z\ \alpha 2)2$$
$$\sigma$$

where n is the minimum sample size required,
Z a / 2 is the value of the standard normal ordinate
α% is the level of significance and
σ is the predetermined margin of error.

Since N = 118 comprising all tomatoes and allied SMEs in Nigeria, the predetermined margin of error is 15%, o = 0.15 and at the 5% level of significance, Za / 2 = Z 0.025 = 1.96
The following computation give the sample size determination:

$$n = ¼ [Z\alpha 2)2 = ¼ [1.96]2 = 42.68 \sim 43$$
$$0.15$$

Therefore the sample size of 43 was used with a sampling error of at most 15% for the study.

The proportionate stratified random sampling was adopted to select sample size already determined across states as shown:

Table 1: Sampling Procedure

	Population	Proportion	Sample Size (n = 43)
South West	89	0.754	33
South East	16	0.136	6
North	13	0.110	4
TOTAL	118	1.00	43

N.B. Actually over 50 questionnaire s were distributed in the target population over 3 months period until retrieving the sample size of 43 (100%).

Data Collection Procedure
A structured questionnaire was used which has three sections. Section A consists of background information of Enterprise, while Sections B and C are structured questionnaires arranged in two parts in line with the research objectives. Measurements was by Likert Scale with range of 4 to 1.

Data Analysis
The data were processed using SPSS Version 20 with the following regression Model:

$$y = \beta o + \beta 1X1 + \beta 2\ X2 +$$

Where y = Adoption of drying technology

βo = constant
β1 = corresponding coefficient for resources as predictors of adoption of drying technology
X1 = Resources as predictors of adoption of drying technology
β2 = Corresponding coefficient for market development as predictors of adoption of drying technology
X2 = Market development as predictors of adoption of drying technology
= Error term
α = 0.05

Assumptions

1. Coefficients must be linear in nature
2. Response error should follow a normal distribution
3. Error should have a common distribution
4. There is equal variance assumption
5. The values for the 2 variables are independent

Regression Analysis and Discussion

Table 2: Contribution of Resources and Market development as predictors of Adoption of Drying Technology for Tomato products by manufacturing SMEs in Nigeria.

Model	Unstandardized coefficient B``	Standard error	Standardized coefficient Beta	t	S:g
1 (Constant)	14.064	13.916		1.011	.369
Resources	-.193	.475	-.202	-.407	.705
Market development	.104	.497	.103	.208	.845

Table 1 above shows the contribution of Resources to be -.193 and market development to be .104 as predictors of adoption of drying technology

i.e Y = 14.064 – 0.193x1 + 0.104x2

where

Y = Adoption of drying technology
X1 = Resources
X2 = Market development

1. Holding X2 constant it shows that a unit increase in resources will cause a decrease of 0.193 units of influence in adoption of drying technology.
2. Holding X1 constant, it shows that a unit increase in market development will cause an increase of 0.104 units at influence in adoption of drying technology

To check if the predictors are statistically significant, since P-values i.e. (sig) are 0.705 and 0.845 i.e. for Resources and market development are greater than & = 0.05. It shows they are statistically significant. Hence, both predictors have significant influence on adoption of drying technology.

Table 3: Model summary of Independent variables on dependent variables.

Model	R	R Square	Adjusted R square	Std. Error of the Estimate
1	.212[a]	.045	-.433	9.73526

a. Predictors: (Constant), Market development, Resources

Table 2 above shows Weak positive correlation of 0.212 of both resources and market development to adoption of drying technology. Also, with regression coefficient (R2) = 0.045 x 100 – 4.5%, It shows that the variability of Y on resources and market development is explained by 4.5% while the remaining (100 – 4.5 = 95.5) is explained by other variables not measured by the model.

Table 4: ANOVA table of the variation of Independent Variables on Dependent variable

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	17.756	2	8.878	1.094	.913[b]
Residual	379.101	4	94.775		
Total	396.857	6			

a. Dependent Variable: Adoption of Drying Technology
b. Predictors (constant): Market Development, Resources

Conclusion

This explorative study was conducted to investigate if resources and market development predict adoption of drying technology for tomato products by registered tomato processing and allied SMEs in Nigeria. It was found that both resources and market development predict adoption of drying technology since both are explained by 4.5% in influencing adoption of drying technology. It also shows that both variables are significant in predicting adoption of drying technology for tomato products by manufacturing SMEs in Nigeria. These information would assist on where emphasis should be placed between resources and market development by would-be entrepreneurs as well as policy technocrats on adoption of drying technology for tomato products by manufacturing SMEs in Nigeria.

Recommendation

1. Between resources and market development emphasis should be placed more on market development in any attempt to promote adoption of drying technology for tomato products by manufacturing SMEs in Nigeria via the followings:

a Developing new geographical market for product such as export market
b New product quality and packaging of products
c New distribution channels
d New market segment by different pricing
e Improve competitiveness of product through meeting international specifications
f Taking measures to curtail seasonal changes in prices of commodities to enhance constant supply for processing.

2. Since both resources and market development only predict 4.5% other independent variables that could predict remaining factors that account for 95.5% should be explored through further research.

References

Aminu, A. & Musa S.A. (2013). "Tomato commodity chain analysis in Kano River Irrigation Project, Nigeria" (ADENI), French Embassy / NAERLS ABU, Zaria. Retrieved May 9th, 2013 www.hubrural.org / IMG / pdf / nigeria tomato report.pdf.

Bassey, A, Antai, A. S., Diji, C. J., Babajide V. F.T., Yoriyo, K.P., Bashir, F. U., Ekei, J. O. (2014), "Standards for writing Research Proposals" Grants & Field Reports African Research Council on Sustainable Development

Brooks, M.S., Abou. El-Hana and Ghaly, A.E (2008). Effects of tomato geometrics and air temperature on the drying behavior of plum tomato. American Journal of Applied Sciences 5 (10): 1369-1375.

Caldeira, M & Ward, J.M (2001). "Using Resource-based theory to interpret the successful adoption & use of information systems & technology in manufacturing SMEs Global co-operation in the new millennium" The 9th European Conference on Information Systems.Central Bank of Nigeria Annual Report (2011 / 12). www.cenbank.org / out / 2012 / publication reports.

Christopher, I.F (2010), "Impact of Microfinance on Small & Medium - Sized Enterprises in Nigeria" Proceedings of the 7th International Conference on Innovation & Management 1864.

Cochram, W. G. (1972) "Sampling size Determination in Farmers Sampling size" Publisher Wiley pages: 428 Published 1977-01-ISBN-10

FAOSTAT (2011). "List of countries by tomato production accessed in August 2011". en.wikipedia.org / wiki / list.

Gutman, J. (2013 on-line). "A Means-End Chain Model based on Consumer Categorization Processes"

www.marketingpower.com / Resources / library / publications / journal of marketing. Retrieval 12 / 11 / 2013

Grant, R. M (2013). "The resource based theory of competitive advantage" Implications for strategy formulation retrieved 21 / 09 / 13. www.skynet.ie / - karen / articles

Mercer, D.G (2008). "Solar Drying in Developing Countries" Possibilities & Pitfalls. Retrieved on 12 / 6 / 2003. www.iufost.org / publications / books / documents / mercer.pdf

Mhazo, N., Hanyani-Mlambo, B., Proctor, S. and Nazare, R.M. (2012). "Constraints to Small-scale Production & Marketing of Processed Food Products in Zimbabwe" The Case of Fruits & Vegetables. Food Africa, Internet Forum. Mhazodagric.uz.ac.zw.

Murzidah, A.M. & Thomson, J.D. (2011) "External Environment Factors Influencing the Technology Adoption-Diffusion Decision in Malaysian Manufacturing Small Medium Enterprises (SMEs) Progress in Business Innovation & Technology Management" 001, 013-022 APBITMS Homepage:htt / / apbitm.org.

Musa-Makama, A.L. (2006). "Kinetics of convective drying of sliced tomatoes" (Lycopersicum esculentum). Proceedings of the 7th Internal Conference & 28th Annual General Meeting of the Nigerian Institution of Agricultural Engineers. ABU, Zaria 28:289-294. National Agency for Food & Drug Administration and Control (2010).

NAFDAC Green Pages 1st Edition.

Oyebanji, A. O., Ibrahim, M. H., Okanlawon, S.O., Okunade, S. O. & Awagu, E. Z. (2011) Journal of Science and Post-harvest Research Vol 2(10) pp. 200-207

Papageorgiwu, C. (2000). "Technology Adoption,. Human Capital & Growth Theory" Retrieved 15 / 09 / 13. www.chrispapgeorgiou-com / papers / rde / 3e.pdf

Sondergaard, H. A (2013). "Market Oriented New Product Development- How can a means-end chain approach affect the process. The MAPP centre" Aarhus School of Business, Haslegaards vej 10, DK-8210 Aarhus V, Denmark

Uba, G. (2010) "Investing in tomato puree and paste production in Nigeria." www.business day on linc.com / Archive retrieved on 8 / 9 / 2012.

UNECE Standard DDP-19 (2007). "Dried Tomatoes marketing & commercial quality control" New York, Geneva 2007.