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The Moderating Role of Innovativeness on the Relationship between Entrepreneurship Educations And Student Entrepreneurial Intention

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Abstract: This study examined the moderating role of innovativeness on the relationship between entrepreneurship education and students' entrepreneurial intention among FUD final year students as at 2017/2018 academic session. The study used a cross-sectional research design with a quantitative questionnaire approach to collect the data. To validate the model, data from 282 final year students were analyzed using the Partial Least Squares Structural Equation Modelling (PLS-SEM). Overall, the survey discovered that both entrepreneurship education and innovativeness are significantly and positively connected to entrepreneurial intention. This report also discovered that innovativeness play a part in moderating the entrepreneurship education and entrepreneurial intention relationship. The study used Human Capital Theory HCT as a theoretical basis of the subject. This survey served as one of the pioneering study with regard to HCT in a testing relationship of this nature. This study recommended that other researchers should employ this hypothesis with other antecedent of entrepreneurial intention for further proof. As a

repercussion to policy, the government ought to guarantee not only inspiring students with entrepreneurship education, but also the robust spirit of innovativeness among students as it delivers a direct effect as well as strong interaction with entrepreneurship education in influencing students' entrepreneurial intention.

Keywords: Entrepreneurship Education, innovativeness, Human Capital Theory and Entrepreneurial intention,

1.0 Introduction

The persisting rise in unemployment, high population growth and low entrepreneurial intention, especially among Nigerian graduates has become a major concern to government and other stakeholders. Statistic indicated that unemployment increased from 19.7% in the 3rd quarter 2016 to 21.0% in the 4th quarter of same year (NBS 2017), while employability status of Nigerian university graduate is 36.26% based on (STUTERN Report 2016), the Nigerian population rises from 184.6 million as of 2016 to 188,906,160 as at 2017 (NBS, 2017) while level of entrepreneurial intention is 44% according to GEM 2012 Sub-Saharan African ranking which is low in associating to other African countries like Angola, Botswana, and Malawi with 70, 72, and 70 respectively. This could be the reasons behind the inclusion of entrepreneurship education into the Nigeria tertiary education system. Norman, Douglas, Takaruza and Morgen (2016) posited that the world presently requires people with creative, multifaceted and diversified entrepreneurial knowledge and skills toward answer to the twin challenges of shrinking economics and unemployment.

In view of these, there has been an increase in studies on factors that affects entrepreneurial intention especially in developed economies. Some of these studies include entrepreneurship education (Daniela, Rainer, Norbert, & Birgit, 2015; Peter & Moses, 2014;

Malabena, 2015; Muhammad, 2013), entrepreneurial orientation (Boltone, 2012; Boltone & Lane 2012; Koe, 2016) environmental factors (Fini et al, 2009; Sadeghi et al 2013) among others.

However, with all the reported growth in the number of studies on factors affecting entrepreneurship intention worldwide, the relationship between entrepreneurship education and student intention is still under investigation in Africa, particularly sub-Saharan Africa, including Nigeria and also inconsistencies of research findings (Ajetunmobi & Ademola, 2014; Akande & Alabi, 2015) and specifically northern Nigeria Nuhu, Loon & Bell (2016). Furthermore, the relationship between entrepreneurship education and innovativeness in relation to students' entrepreneurship intention is not well established in the extant literatures.

Moreover Many studies reported a positive relationship between entrepreneurship education and entrepreneurial intention and there are others whose studies in this area generally differ considerably. For instance, (Idogho and Ainabor, 2011; Ojeifo 2012; Famous and Okafor, 2010; Baba, 2014; Ekundayo and Babatunde, 2014; Emmanuel, Adejoke, Olugbenga and Olatunde, 2012; Ooi and Nasiru, 2015) found that entrepreneurship education as a means of developing entrepreneurship skills and potentials of students have a positive relationship with the entrepreneurship intention, while others like; (Abiodun, Isaac, and

Titilayo, 2015; Ksenija, Irena, and Dina, 2015; Muhammad, 2013) reported entrepreneurship education for having no significant impact on the entrepreneurship skills and potentials of students.

Moreover Nuhu, et al. (2016) in their systemic review of entrepreneurship education literature draw the sample of 213 studies from 5 different online data base reported that; all the regions in the northern parts (North-central, north-east, north-west) are under researched with 5.2%(north east) as the least in that part and 11.7% as the highest (north-central).With this inconsistency no conclusion can be drawn. Consequently, as suggested by (Baron and Kenny 1986;), where there is weak, or inconsistent relationship between independent and dependent variables, a typical moderating variable can be introduced to balance the relationship. As such this study is employing innovativeness to moderate the relationship between entrepreneurship education and students entrepreneurial intention among FUD students. It is against this background the following hypothesis where formulated to guide the study.

H0₁: EED has no significant relationship with EIT

H0₂: INN has no significant relationship with EIT

H0₃: INN does not moderates the relationship between EED and EIT

The remaining parts of the paper include the following; first, reviews of related literatures and theoretical framework, followed by methodology, data analysis and presentation of findings. The paper finally concludes with direction for further studies.

2.0 Literature Review and Conceptual Framework

2.1 Concept of Entrepreneurial Intention (EIT)

Commonly, intention is the intellectual state of mind directly prior to performing particular behaviour (Krueger, 2005). It's also stated that entrepreneurial intention is concerned with the proclivity of an individual to start an entrepreneurial activity in the future (Davidson, 1995). It is also a key determinant of the action of new venture creation moderated by exogenous variables such as education and training, level of innovativeness among others.

Entrepreneurship intention is also defined by Thompson (2009) as "a self-acknowledged opinion by a person that they propose to set up a new business venture and deliberately plan to do so at some point in the future. Preceding studies have showed that entrepreneurship intention is a solid predictor of planned behaviour (Ajzen, 1991). It was also recommended by (Pittaway and Cope 2007) that more studies on entrepreneurship intention should be linked to employability in small and medium enterprises to provide a reasonable justification. This paper is of the opinion that using student in entrepreneurship intention studies would provide reasonable justification than small and medium enterprise based on position of (Shane, 2004) who contained that; Universities are being regarded as a birthplace of technological development that is valuable to business activity.

2.2 Entrepreneurship Education and Entrepreneurial Intention

To date policy makers are primarily concerned on the influence of entrepreneurship education on graduates' career decision, and therefore how it can be influenced by policy measures (European Commission,

2003). Consequently, over the past decade there has been a considerable increase in entrepreneurship programs worldwide designed to cultivate entrepreneurial culture at all levels of the educational system (Yakubu, & Norashidah, 2016).

However researchers like (Ekundayo & Babatunde 2014) documented that inclusion of entrepreneurship education influences students' intentions of becoming self-employed. Also (Karimi, Biemans, Lans, Chizari, & Mulder 2014) posited that all types norms and perceived behavioral control. Results also indicated that of Entrepreneurship Education Programmes taken significant positive impacts on students' subjective the elective Entrepreneurship Education Programmes significantly increased students' entrepreneurial intention, although this increase was not significant for the compulsory Entrepreneurship Education Programmes Furthermore, Peter and Moses (2014) analyze the influence of entrepreneurship education on beliefs, attitudes and intentions of Africa University alumni using the sample of 60 business graduates (X1) and another sample of 60 non-business graduates (X2) out of 438 alumni that graduated between 2009 and 2012; their study revealed that alumni who took an Entrepreneurial course have high rating scores on most indicators of entrepreneurship. On the other hand Abiodun & Oyejoke, (2017) revealed that Entrepreneurship Education considerably influences students' Entrepreneurship intentions.

However, in a study by (Nasiru, Ooi, and Bhatti 2015) a significant negative relationship was found between perceived effective entrepreneurship education and entrepreneurial intention

in their study. Also (Muhammed, 2013) posited that business education does not have significant influence on increasing the entrepreneurship abilities of the students, he further stated that; the children of those parents who are already involved in any kind of business do have an clear potential to start and run their own business. More so (Abiodun Isaac, & Titilayo 2015) reported that there is no significant positive connection between new venture creation and content of entrepreneurship lectures. They also stated that venture formation needs some other factors besides entrepreneurship education. This study assumed that; innovativeness could be one of these factors. In another study (Ksenija et al., 2015) reported that entrepreneurial intentions do not increase due to exposure to entrepreneurship education.

Evidence from the reviewed literatures shows that there are inconsistencies of findings on association of entrepreneurship education with students entrepreneurship intention, this suggested the need for a moderator to balance the relationship as recommended by (Baron and Kenny 1986; Nasiru, 2015) whom posited that; when weak, or inconsistent relationships exist between independent and dependent variables, a typical moderating variable can be introduced.

2.3 Innovativeness and Entrepreneurial Intention

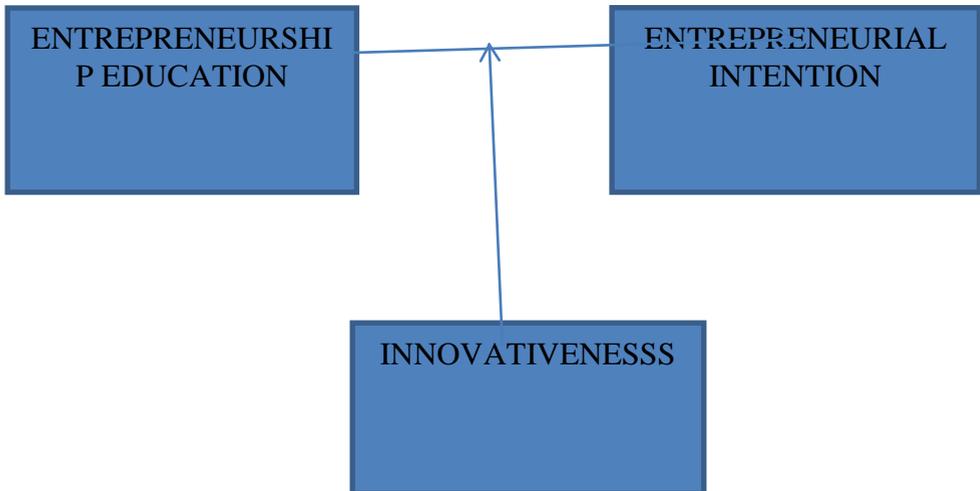
Innovativeness is repeatedly stated in the literatures as an important component of entrepreneurship. Thomas, Ambross and Denis (2016) pointed out that that innovativeness is a primary motivation in starting a new business venture. Entrepreneurship and innovative business behaviour have

been synonymously termed as an act of creativeness (Ward 2006). Also Drucker (1986) advocates that “innovativeness is the specific device of entrepreneurs”. Robinson et al. (1991) posited that innovation in business is related to “long-sighted and performing upon business actions in different and exceptional ways”. The belief that entrepreneurs are more innovative than non-entrepreneurs is also supported by numerous experimental investigation results (Gurol & Atsan, 2006; Koh, 1996; Robinson et al., 1991). Mueller and Thomas’s (2001) study confirm innovation as a principal purpose in starting a business venture. A number of studies have revealed that it also has a

momentous consequence on Business performance (Utsch & Rauch, 2000). In the studies of (Koh,1996; Gurol, & Atsan 2006), innovativeness was establish to have a positive statistically important association with entrepreneurship intention.

With all the reported relationship between innovativeness and new venture creation, Business performance and or students entrepreneurial intention the relationship between entrepreneurship educations with innovativeness in relation to student entrepreneurial intention is still not established in the extant literatures. This paper aim at addressing this gap

Figure 1 conceptual framework developed for the study



2.4 Human Capital Theory

This theory was developed by Becker in 1964 originally for estimating his employees' income distribution in relation to their investments in human capital. He describes human capital as talents and awareness that employees acquire through investments in schooling, on-the-job training, and other types of experiences. It comprises the

stock of knowledge and skills that reside within individuals. Precisely, it includes the unique insights, skills, cognitive characteristics and aptitudes of entrepreneurs. It also includes accomplished attributes, accrued work and habits that may have a positive or negative effect on productivity. It represents a resource that is heterogeneously distributed across

individuals and is thus, central to accepting changes in opportunity identification and exploitation. Researchers have employed a enormous range of variables indicating human capital such as formal education and training, employment experience, start-up experience, skills and knowledge, individual creativity and innovativeness among others (Muhammad; 2016).

This study adopted Human Capital theory because the study assumed that entrepreneurship education couple with innovativeness may result to higher entrepreneurship intention in student. Thus, from the theory viewpoint, individuals with more or higher human capital achieve higher intention when executing tasks. Entrepreneurial education, and individual creativity or innovativeness are therefore the human capitals that are needed for better intention to create business venture.

3.0 Methodology

The study adopts survey research design which is cross-sectional in nature. This type of research design is adopted because the information about the variables represents what is going on at only one point in time. The paper obtained Primary data from the population of the study using self-administered questionnaire. The population of the study consists of 793 final year students of Federal University Dutse (FUD) during the 2017/2018 session where the sample size of 266 obtained from the population using Yamane formula and 30% was added to the sample size as recommended this change the sample size to 346. The researchers used University final year students ideally because they about to engage in the real entrepreneurial behaviour. The researchers chooses FUD final year students not by priority

rather because the entrepreneurship education curriculum is consider the same across all the universities in the country and all the student took the courses in their 200 and 300 level respectively. The Simple random sampling technique was adopted given the fact that the population is homogeneous in nature. Out of the 346 questionnaires distributed 305 filled and returned, 23 had more than 10% missing values and one was an unengaged response, thus they were all deleted. However, 282 were valid and useful for analysis. Upon checking no missing values is found, based on the recommended of (Hair, Balck, Babin, Anderson & Tatham, 2006) suit for analysis.

The instrument for measuring entrepreneurship education (EED) was adopted from (Ooi, Selvarajah and Meyer, 2011) Innovativeness (INN) from (Boltone & Lane, 2012) and finally entrepreneurial intention (EIT) from (Liñán & Chen, 2009), all questions were in close ended form and responses were on a 5 point likert scale, thus: strongly agree, agree, undecided, disagree and strongly disagree. EED consists of 5 items including; "My University course prepares me well for an entrepreneurial career, As a result of taking entrepreneurship courses, I now have better understanding about business," Innovativeness measured by 4 items including "I often like to try new and unusual activities that are not typical but not necessarily risky, In general, I prefer a strong emphasis in projects on unique, one-of-a-kind approaches rather than revisiting tried and true approaches used before, I prefer to try my own unique way when learning new things rather than doing it like everyone else does, Finally, EIT is

measured by 7 items including “I am ready to do anything legal to be an entrepreneur”, “I am determined to create a firm in the future”.

3.2 Technique of Data Analysis

This study employed the use of SmartPLS 2.0 in order to calculate the two basic model of PLS path modelling i.e. measurement model and structural model base on the recommendation of (Anderson & Gerbing, 1988). Some of the aims for the use of PLS are: places a

very flexible restriction in respect of distribution and population of the study (Haenlein & Kaplan, 2004). It also has the likelihood of providing a additional reliable and accurate calculations of moderating roles because its accounts for error that is capable of decreasing the possible relationship as well as the expansion of the confirmation of the theory as stated in (Helm, Eggert, & Garnefeld, 2010; Henseler & Fassott, 2010).

4.1 Discussions of the Results

Table 4.1 Measurement model results

Relationship	AVE	Composite Reliability	R square
EED	0.624	0.891	
EIT	0.609	0.916	0.451
INN	0.473	0.772	0.301

In table 4.1 above, the study carried out confirmatory factor analysis (CFA) in order to check the reliability of the items, the convergent validity as well as the discriminant validity. Table 1 and 2 shows the items loadings are above the serious threshold of $\geq .50$ as recommended by (Anderson & Gerbing, 1988; Bagozzi, Yi, & Phillips, 1991; Gefen & Straub, 2000). The internal consistency reliability was also attained by composite reliability, the values were more than the vital cut-off value of $\geq .70$ (Chin, 1998; Hair et al., 2006). Furthermore, the convergent validity was also reached as average variance extracted (AVE) met the minimum

criteria of $\geq .5$, the values range between 0.57 and 0.62 as stated in (Fornell & Larcker, 1981; Henseler et al., 2009). The discriminant validity was also achieved as the square root of the AVE is higher than the inter-correlation of each of the study’s construct in relation to other hypotheses of the research model (Chin, 2010; Komiak & Benbasat, 2006) and also higher than the hypothesis correlations (Chin, 2010). It is judicious to say that the measurement model satisfactory met both internal consistency reliability, convergent and discriminant validity. Thus, are effective and consistent for supplementary analyses.

Table 4.2 Test of Hypothesis

R/Ship	Beta Values	Standard Error	T Statistics	P Value	Decision
EED -> EIT	1.183	0.204	5.895	0.00	Rejected
EED * INN -> EIT	0.712	0.213	3.463	0.00	Rejected
INN -> EIT	0.778	0.128	6.130	0.00	Rejected

This study observes the regulating role of Innovativeness on the relationship of entrepreneurship education with entrepreneurship intention. The explanation and summary of the outcomes are presented in Table 4. The result showed that a positive association exists between entrepreneurship education and entrepreneurship intention of FUD students ($\beta=1.183$; $t.value = 5.895$; $p.value = 0.00$), this reject H1. This findings is supported by previous studies like (Ekundayo and Babatunde (2014); Kailer, 201; Peter & Moses, 2016; Okafor, 2010) and contrarily to (Muhammed, 2013). Moreover, this paper discover a significant and positive relation between Innovativeness and entrepreneurship intention ($\beta value = 0.778$; $t. value = 6.130$; $p.value = 0.00$) the finding also rejected H2. The finding with regards to H2 this relationship was also not reported in the literatures. The moderating result shows that Innovativeness regulates the relationship between entrepreneurship education and entrepreneurship intention ($\beta = -0.712$; $t.value = 3.463$; $p.value = 0.00$), this violate the assumption that INN does not moderate the relationship between EED and EIT and also H3 rejected. The result of H3 is ground-breaking and the main contribution of this study, this is because the previous studies did not

reveal that the indirect (regulating) role of Innovativeness has been examined.

5.1 Conclusion and Policy Recommendation

This paper observes the role of innovativeness on the relationship between entrepreneurship education and entrepreneurship intention. The findings revealed that entrepreneurship education, and innovativeness absolutely related to entrepreneurship intention. It also discovered that innovativeness regulates the relationship between entrepreneurship education and Entrepreneurial intention. Thus, the study recommends the investigation of innovativeness as a moderator in other situations particularly in studies where Human Capital Theory (HCT) served as underpinning theory. This paper contributed to the HCT by incorporating the regulating effect of innovativeness which, to the best of the researchers' knowledge has not been established in the previous studies. The policy consequence of this study is an importance on innovativeness in youth development policies in Nigeria. The Study call for entrepreneurship educators in Nigeria to emphasize more on installing the spirit of creativity and innovation in order to understand the competences possessed by the number of Nigerian students in respects to entrepreneurship intention.

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Entrepreneurship: A Viable Panacea to Socio-Political Unrest in Nigeria.

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Abstract: Socio-political unrest, being an endemic problem, has become a real threat to the stability of the country, Nigeria. Some of these problems can be seen in rise in the level of kidnapping for ransom, incidences of armed robbery, domestic, political, ethnic and religious violence. The introduction of entrepreneurship in the Western nations has led to increase in the level of employment, reduction in poverty and unemployment. The socio-political problems in Nigeria, which have been majorly caused by rise in the level of poverty and unemployment, need to be arrested in order to bring about the needed peace, stability and development in the country. The aim of this paper is to examine the positive roles entrepreneurship plays in reducing to the barest minimum the endemic problem of socio-political unrest in Nigeria. This paper therefore, made use of secondary source of data collection. The paper recommended that the government of Nigeria, as a matter of urgent national requirement, must provide the enabling environment for entrepreneurs to develop, with the needed social amenities such as power (electricity) and incentives such as tax relief.

Key Words: Entrepreneurship, poverty, unemployment, socio-political violence, unrest, panacea.

Introduction

Over the years, Nigeria and many other developing countries of the world have been bedeviled with various forms of

social, religious, political and economic unrests such as have paralysed every facet of the entire life of the country. This has not made the country to remain

the same again. These unrests have made it difficult for any form of development- be it social, political or economic- to take place within the country. Most of these unrests, especially socio-political, are traceable to youth restiveness all over the country. These unrests have done so much damage to the image of the country within and outside such that it has led to the problem of capital flight, lack of the investment, brain drain among others.

The word “entrepreneur” is coined from a French verb *entreprendre*, which connotes ‘to undertake’. Thus entrepreneur refers to those who “embark on” the risk of new enterprises. An enterprise is formed by an entrepreneur. The process of creating a new enterprise is called “entrepreneurship” (Navale, 2013).

Entrepreneurship involves a chain of actions of an entrepreneur who is a person always in pursuit of something new and takes advantage of such ideas into gainful opportunities by accepting the risk and uncertainty with the enterprise. Entrepreneurial development in today’s business world has become very important in view of its being a key to economic development. The prospects of industrial development, regional growth and employment generation greatly depend upon entrepreneurial development (Carlen, 2016). Thus entrepreneurs are the fore-runners of industrial development and the rewards of industrial development are greater employment opportunities to unemployed youth, increase in per capita income, better standard of living and increased individual saving, increased revenue to the government in the form of income tax, sales tax, export duties, import duties, and balanced

regional development among other benefits.

Taking into consideration the introduction of free enterprise model in Western nations has led to increase in the level of employment, reduction in poverty and unemployment. This idea has been perfected in the developed countries such as the United States of America (USA), Britain, China, Canada and so on as well as developing countries such as South Africa, Egypt and Brazil. Nigeria, the so called giant of Africa, can also derive numerous benefits by integrating entrepreneurial development schemes into her various socio-political institutions. Hence, one of the key reasons for the introduction of entrepreneurship developmental model into Nigeria is the need to reduce to the barest minimum the endemic problem of socio-political unrest in the country, which is a real threat to the democratic stability of the country. Some of these problems include but not limited to kidnapping for ransom, incidences of armed robbery, domestic, political, ethnic and religious violence.

Consequently, the emergence of entrepreneurship developmental model in Nigeria is to herald a new beginning for the country with its attendant benefits such as economic development in the country. Graduates of tertiary institutions will become wealth and job creators, employers of labour instead of searching for non-existing white-collar jobs with various new innovations, initiatives and creativities, thus making them to become self-employed, self-empowered, self-reliant and self-relevant. Ultimately, the graduates of higher institutions will no longer be an easy prey in the hands of selfish sponsors to be used for various forms of socio-political unrest in the country.

This will in the final analysis bring about the much desired national development which will affect all sectors of the country. Consequently, the objective of this paper is to examine the positive roles played by entrepreneurship in ameliorating the problem of socio-political unrest in Nigeria.

Literature Review

Entrepreneurship

Cole (1959) cited by Ogundele (2007) asserts that entrepreneurship is used in two senses and that the context of each usage should make the particular meaning obvious. First, the concept may be employed to mean the task or activity. That is, the purposeful task including an integrated sequence of decisions of an individual or group of associated individuals undertaken to initiate, maintain or enhance a profit oriented business enterprise for the purpose of production or distribution of economic goods and services. On the other hand, entrepreneurship may occasionally be used to signify the commonality of entrepreneurs. This means the aggregate of individuals performing entrepreneurial functions or carrying out that activity in a given time.

Globally, entrepreneurship growth through education has been receiving considerable attention as efforts have been made through researches in both institutions of learning and entrepreneurship research centres for the purpose of developing both entrepreneurship spirit and culture (Abubakar, 2010). Entrepreneurship has gained recognition as an indispensable functioning of organization and economics (Dickson et al, 2008). It has tremendously contributed towards creating new jobs, wealth creation,

poverty reduction and income generating for both government and individuals.

Sequel to understanding the general roles of entrepreneurship in national development, it has become imperative to examine the different types of entrepreneurship.

Vivek and Ravindra (2017) have identified five different types of entrepreneurs. These are;

Innovative entrepreneurs: these entrepreneurs have the ability to think outside the box, in terms of economic ideas of business organisation and management. They are the business leaders and contributors to the economic development of a country. Major inventions like the introduction of making mobile phones available to the common man are through the innovative work of entrepreneurs.

Imitating entrepreneurs: These entrepreneurs are people who trail the pathway of innovative entrepreneurs. They replicate innovative entrepreneurs because the environment in which they operate does not permit them to be creative and innovative on their own. Such entrepreneurs thrive in countries and situations marked with weak industrial and institutional base which creates difficulties in initiating innovative ideas.

In Nigeria, a large number of such entrepreneurs exist in every field of business activity and they fulfill their need for achievement by imitating the ideas introduced by innovative entrepreneurs. Development of small shopping complexes is the work of imitating entrepreneurs. Most small car manufacturers are now the imitating entrepreneurs.

Fabian entrepreneurs: the dictionary meaning of the term 'fabian' is 'a

person who seeks victory by delay rather than by a decisive battle'. Fabian entrepreneurs are those individuals who show no initiative in visualizing and implementing new ideas and innovations. They wait for some development which would motivate them to initiate unless there is an imminent threat to their very existence.

Drone entrepreneurs: the dictionary connotation of the term 'drone' is 'a person who takes advantage of the labour of others'. Drone entrepreneurs are those individuals who are satisfied with the status-quo and speed of business activity and show no interest in gaining market leadership. In other words, drone entrepreneurs are die-hard conservatives and even ready to suffer the loss of business. They do not take risk; they believe that things should and will remain the way they are.

Social Entrepreneurs: social entrepreneurs drive social innovation and transformation in various fields including education, health, human rights, workers' rights, environment and enterprise development. They undertake poverty alleviation objectives with the zeal of an entrepreneur, business practices and dare to overcome traditional practices and to innovate. Farmers' bank is an example of social entrepreneur. The defunct Peoples' Bank of Nigeria is another good example of the social entrepreneur.

For the purpose of this paper, it is equally very important to clarify the functions of entrepreneurs.

Kumar (2018) has identified some of the most important functions that are performed by an entrepreneur to include:

Innovation: an entrepreneur is basically an innovator who strives to develop new technology, products, markets, etc.

Innovation mainly involves doing new things or doing existing things differently or in a new way. An entrepreneur uses his imaginative mind to do new things and exploit opportunities in the market. He does not believe in status quo and is always in search of change.

Assumption of Risk: an entrepreneur, by definition, is a risk taker and is not afraid of venturing into the unknown. He is always prepared for assuming losses that may arise on account of new ideas and projects undertaken by him. This willingness to take risks allows an entrepreneur to take initiatives in doing new things and marching ahead in his efforts.

Research: an entrepreneur is a practical dreamer and does his homework before taking a leap into an unknown business venture. In other words, an entrepreneur implements an idea only after considering a variety of options, analyzing their strengths and weaknesses by applying analytical techniques, testing their applicability, supporting them with empirical findings, and then choosing the best alternative. It is then that he applies his ideas in practice. The selection of an idea thus involves the application of research methodology by an entrepreneur.

Development of management skills: the work of an entrepreneur involves the use of managerial skills which he develops while planning, organizing, staffing, directing, controlling and coordinating the activities of business. His managerial skills get further strengthened when he engages himself in establishing equilibrium between his organization and its environment. However, when the size of business grows considerably, an entrepreneur can

employ professional managers for the effective management of business operations.

Overcoming resistance to change: introduction of new innovations are generally opposed by people because it makes them change their existing behavior patterns. An entrepreneur always first tries new ideas at his level. It is only after the successful implementation of these ideas that an entrepreneur makes these ideas available to others for their benefit. In this manner, he paves the way for the acceptance of his ideas by others. This is a reflection of his will power, enthusiasm and energy which helps him in overcoming the society's resistance to change.

Causes and effects of socio-political unrest in Nigeria

Lack of matured political culture: the inability of Nigerians to develop the kind of political culture that can be regarded as the civic culture of participation abiding by the rules of the game is not to be found in what is regarded as 'the Nigeria factor', but in the colonial foundation of politics, which did not leave behind a legacy of tolerance, democracy and consensus building. Nigerian nationalists who inherited state power grew up under the colonial order which was marked by dictatorship and resorted to the use of naked power as a means of dealing with opposite views. With the crises and challenges of nationhood and addressing problems of material existence of a radicalized followership, they easily resorted to violence and force as a means of political survival (Osuji, 2013).

Poverty: As a result of poverty, prospective citizens with genuine interest for the country are easily

disenfranchised by the political parties, as they have to cough out millions of naira, to obtain the party forms for nomination. Furthermore, it has turned the citizens to easy tools in the hand of the political elites. More importantly, the prevailing economic situation which has aggravated the problem of mass poverty and unemployment due to the current economic downturn and recently, of recession, is affecting the basic means of livelihood for the majority of Nigerian people, hence they are more susceptible to manipulation and easily recruited as thugs or miscreants to perpetrate socio-political violence at any given time at the beckon of their sponsors (Oluwatusin and Abolarin-Egbebi, 2015).

Militarism: the military, according to the constitution, is meant to protect its citizens from any external aggression. It is meant to protect the geographical territory of the country. But in Nigeria, the military makes incursions into politics with impunity. Military takeover is in most cases marked by the suspension of the country's constitution as well as civilian rule. Human rights are abused through the imposition of state of emergency or curfews. Press freedom is restricted and detention of perceived enemies without trials becomes rampant. The military by its nature is run through a unitary system of control. After disengaging from politics, they end up imposing a unitary system of government on the people, which is against the pluralistic nature of democracy. Of the post-independence Heads of State in Nigeria, six were military officers who ruled the country for close to three decades. The state is seen as an extension of the military barracks and the civilians are often viewed and treated with contempt. For

example, a police official, sent to ensure that a former Governor of Rivers State did not pass through a particular route in Rivers state was quoted as saying “I do not take orders from civilians”. This was a state where a civilian (Mr. Rotimi Amaechi) was the executive governor (Akasike 2013).

Patron-Clientelism: the government is supposed to be funded by the public. This provision is enshrined in the constitution. But the government in Nigeria funds itself and the public. The government is the patron and the citizens are the clients. Thus, a situation of patron-client, master-servant and landlord-tenant relationship ensued. The commonwealth of the states is used to enrich a few. Another dimension to this is the patron-client relationship between the political fathers and their political sons and daughters (political godfatherism) which is such that the political father is willing to go to any length to impose his favoured candidate(s) on the electorate, even when there are better, more competent and more qualified candidates to occupy such positions (Osumah, 2010).

Youth unemployment: most of the youths are easily bought over with financial benefit in order to sway their votes. As a result of the by-product of poverty and employment, most electorates therefore end up voting for their pockets instead of their conscience. This has ensured the sustainability of the hegemonic oligarchic few in governance that continues to toy with the wealth and lives of the majority in a nation with the largest oil producing record in Africa and 8th largest oil producing country in the world (Idada and Alimi, 2014).

Entrepreneurship as a panacea to socio-political unrest in Nigeria

Peace and security: As a matter of state priority, there is need for a re-organization in the country’s security network. This is due to the fact that the security apparatus and formations are already compromised. Members of the national security outfit were arrested and court martialed for aiding and abetting the Boko Haram terrorist group (Vanguard, 2013). These are the same security outfits that are paid with the tax payers’ money to guarantee their security. The current spate of communal clashes, violent crimes and kidnapping for ransom must be dealt with more intelligence network and information gathering other than hard wares. The country is vulnerable to organized crimes; some Iranians were arrested with cache of arms and ammunition. Recently, there has been an upsurge in the Fulani herdsmen and farmers crises across the nation: from Benue to Nassarawa, Yobe to Taraba and Plateau States threatening the political stability of the country (Akinyemi, 2012).

Employment: entrepreneurship is an economic activity involving the creation of wealth with a view to adding values to wealth and ensuring optimum utilization of scarce resources. Since this value creation activity is mostly performed continuously in the midst of uncertain business environment like Nigeria, entrepreneurship is therefore regarded as a dynamic force in wealth creation, which is also in tune with employment generation. Employment also creates income, which gives one the opportunity to cater for the basic needs of life, such as food, shelter, clothing and the ability to pay the school fees of one’s children, hence being able to guarantee the future of the young ones from would be trouble makers who are ready to use them as

tools in formenting socio-political crises in the country. Therefore, the more employment is generated, the less the level of joblessness of Nigerian youth and the less the rate of socio-political thugs that are readily available as willing tools in the hand of the unscrupulous politicians (Adam, 2017).

Innovation: entrepreneurship revolves around the continuous exploration for new business ideas. Hence, entrepreneurship motivates individuals to continuously evaluate the existing modes of business operations so that more efficient and effective methods can be evolved and adopted. Consequently, entrepreneurship involves a continuous effort for synergy (optimization of performance) in organizations which will ultimately lead to innovation and a higher level of productivity. Consequently, the high level of productivity will have positive effects on incomes. The higher the income, the more industries will spring up. Hence, there will be gainful employment for the teeming unemployed youths in the country. They are also likely to be able to save for future needs and purposes, thus leading to reduction in the level of socio-political unrest in the country (Ihugba, Odii and Njoku, 2013).

Profit: profit potential is the reward or compensation to the entrepreneur for taking on the risk of developing an idea into an actual business venture. Furthermore, most of the manufacturing industries that are no longer in business today in Nigeria are hugely out of business partly due to the poor profit margin. Without profit potential, the efforts of entrepreneurs would remain only paperwork with nothing to show for it. Therefore, one of the objectives of entrepreneurship is high profit

margin. When this is achieved, the entrepreneur is given the leverage to increase the level of productivity (Idada and Alimi, 2014). Furthermore, profits also provide more capital for investment, which can be further used in generating more medium and small scale industries. Therefore, with more productivity, the more the citizens would be engaged. This will take their attention away from social vices in the society thereby reducing the incidence of socio-political crisis in the country.

Risk: one of the goals of entrepreneurship is the motivation and the ability to take risk which evolves out of the creation and implementation of new ideas. New ideas are always uncertain and their results may not be immediate and positive. An entrepreneur should therefore exercise great caution to see his efforts bear fruit. In the intervening period (time gap between the conception and implementation of an idea and its results), an entrepreneur has to assume risk. If an entrepreneur does not have the willingness to assume risk, entrepreneurship would never succeed (Macko and Tyszka, 2009). Therefore, the more the risks that are taken by the entrepreneurs, the more likelihood of success, and the success will ultimately translate to more resources for the people and bring about a reduction in the level of poverty. The implication of this development is that the number of people that will be available as social miscreants or nuisance variables to cause trouble or crisis in the society will be drastically reduced.

Managerial skills: One of the importance of entrepreneurship lies in the fact that it helps in identifying and developing managerial capabilities of entrepreneurs. An entrepreneur studies a

problem, identifies its alternatives, compares the alternatives in terms of cost and benefits implications, and finally chooses the best alternative. This exercise helps in sharpening the decision making skills of an entrepreneur. Besides, these managerial capabilities are used by entrepreneurs in creating new technologies and products in place of older technologies and products resulting in higher performance (McQuerrey, 2018). Simply put, the more the Nigerians that are able to gain the needed managerial capabilities, the increase in the level of prospective entrepreneurs and the potential in decreasing the number of people that will be available in creating a state of anarchy and anomie in the country.

Wealth: entrepreneurship translates into creation of organizations. When entrepreneurs bring together and coordinate physical, human and financial resources and direct them towards achievement of objectives through managerial skills, it ultimately creates wealth. Consequently, more money will come from income tax paid by workers and this is a veritable means of wealth creation. The availability of such resource will likely make more funds available for the entrepreneurs to set up more skill acquisition centres and embark on more wealth creation programmes (Opara, 2016). This will in the long run reduce poverty greatly, thus serving as checks on the growth of socio-political crises in the country.

Standard of living: by creating productive organizations or industries which add value to its customers, entrepreneurship helps in making a wide variety of goods and services available to the society which results into higher standards of living for the people.

Possession of luxurious properties such as cars, computers, mobile phones, rapid growth of shopping malls, etc. is a pointer to the rising living standards of people. These are due to the efforts of entrepreneurs (Adekoya, 2016). Furthermore; income that is generated from wealth created can be used to buy more goods that will increase the economic conditions of the citizens and reduce the cost of living. When this is achieved, it will have a spiral effect on the country thereby reducing the problem of socio-political crises, since the standard of living of a good number of the populace would have been well taken care of.

Recommendations

In view of the foregoing, the paper hereby makes the following recommendations:

The government of Nigeria as a matter of urgent national requirement must provide enabling environment for entrepreneurs to develop, with needed social amenities such as power and incentives such as tax relief and removal of multiple taxes. This will not only help in creating employment for the teeming unemployed Nigerian youths, but also create wealth and improve the level of productivity in the country. This will lead to both qualitative and quantitative improvement in the lives of Nigerian citizens, particularly the vulnerable members of the society.

There is need for the educational institutions in the country to be transformed in such a way that they will have the capacity to offer entrepreneurship programmes within the formal educational arrangements and through extra-curricular activities. Such programmes must reflect the pressing need of the society. This will go a long way in preparing the young generation

in integrating with their communities, solve local problems and establish socio-economic equality, justice and solidarity in the country.

Entrepreneurship is a potent tool for capacity building as it provides high-quality support for entrepreneurs. In doing this, it can help in the creation job opportunities for the vulnerable members of the society such as the widows, the orphans, the needy and the poor. It can also help in developing high-quality services for the people such as solving societal problems by providing access to portable pipe-borne water in the rural areas and giving the local farmers, fishermen/women, craftsmen and other artisans access to urban and international markets. This will go a long way in reducing the rate of rural-urban migration and also drive development in the rural areas.

One of the greatest problems faced by entrepreneurs in Nigeria is access to capital, particularly in remote/rural areas. Fresh initiatives in these marginalized communities need serious funding in order to drive the needed growth and development. This will have a positive effect on the nation's economy. Funding of entrepreneurial initiatives is also a good business platform for corporations and governments alike. Companies that provide corporate social responsibility

(CSR) programmes increase leverage for social enterprises, equating to higher returns on investment. Consequently, when governments provide tax haven for social enterprises, they encourage citizens to create sustainable solutions and in turn, stability. Government can play a in addition to its regulatory role by supporting social enterprises from their start-up to scale up phase. This will create more job opportunities which will keep the teeming unemployed young Nigerians busy and help in our democratic sustainability.

Conclusion

Socio-political unrest is a problem that has threatened the corporate existence of Nigeria as a nation. This problem has manifested in the form of ritual and political killings, kidnapping for ransom, armed robbery, ethno-political and religious/sectarian violence. One of the major causes of this problem is unemployment, especially when youths in the country cannot secure gainful employments/white-collar jobs coupled with lack of vocational skills by secondary and tertiary institution graduates, most of whom are unemployable. This paper provides a way out of the socio-political quagmire by presenting entrepreneurship as a veritable panacea to the problem in Nigeria.

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Simulation and Unit Cost of Using Fluid Catalytic Cracking of Soyabeans Oil for the Production of Bio-Gasoline

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Abstract: The fluid catalytic cracking (FCC) procedure has been in the refinery for a long time. Feedstocks and process routes have determined the development of the production of gasoline over time. However the technique has not been applied to process bio-feedstock. A new feedstock (soyabean oil) is being investigated here and compared with the product from VGO because of the absence of the technology in Nigeria. The fluid catalytic cracking unit (FCCU) was designed such that a feed temperature is raised to produce conventional cuts from soyabean oil with similar cuts from VGO. The procedure followed included taking an assumption for adiabatic condition around the reactor for the process modelling. Next the simulation was run to crack soyabean oil to produce gasoline and LCO was another major fraction of the fractionated soyabean oil. This innovation will open up an outstanding entrepreneurship and a significant change to the view of a FCCU as made strictly for petroleum processes. The acceptance in mimicking commercial FCC operation to produce similar cut from petroleum has been successfully tested by 26 licenced pilot plant industries. The feasibility study for the start-up of this industry indicated that the IRR is excellent and the productivity index is greater than one. This makes the establishment of such industry economically relevant in Nigeria.

Keywords: Fluid Catalytic Cracking, soyabean oil, feedstock, gasoline, riser.

Introduction

Fluid catalytic cracking is a standout amongst the most adaptable procedures in any refinery. It can readily be modified and changed yet sustain quality through adjustments to procedures and processing conditions. The FCCU is one unit in the refinery that can deal with an assortment of feedstock, including polluted feedstock. FCC feedstock have changed over the many years of business application (Pinheiro et. al., 2011) (NRC, 2011), developing from light gas oils (31°API) in the 1940's, to a variety of streams in the present day which may contain deposit, asphalt and hydro-treated feedstock (The adaptability of the FCC unit as utilized in the refinery in using petroleum feedstock is a profitable venture). Government orders on inexhaustible fuel guidelines have brought about innovation of co-processing vegetable oils and pyrolysis oils in refineries. New innovations are being produced to change over waste plastics to fuels) (Dupont and Theodore, 2012). The shale oil is also processed by FCCU as it has become available by evolving technology (EIA, 2011)

Literature Review

The FCC-type procedures, for example, the procedure adopted by ExxonMobil PCCSM7 and KBR Superflex™8 are intended to split naphtha run feedstock specially to light olefins. Fluidized bed types have been proposed for changing over biomass to engine fuels (Press, 2010) and biomass to benzene, toluene and xylene. FCC type of plants have additionally been used to produce propane dehydrogenation and for changing over methanol to olefins (Gayubo et. al., 2000) (Keil, 1999). Unmistakably, flowing fluidized beds are a flexible innovation and are not

restricted to changing over vacuum gas oil (VGO) to petroleum products.

New feed-stocks and process design is a significant change, and in this way it is important to identify the economic profitability since a loss in any industry is a huge financial hazard. Understanding the potential yields and execution is fundamental in evaluating the financial suitability of feedstock and processing route of that feedstock. One approach to limit the hazard related with these open doors is to recreate the procedure. After a fruitful re-enactment, it is advised to simulate the production prior to business usage. The use of ASPEN HYSYS for the simulation of refining processes has been adopted by oil refiners. This is usually done to safeguard against waste of plant fabrication and operation. The popular quotation is this, 'Confer your bangles on a little scale and make your benefits on a huge scale,' should direct everyone who goes into another business enterprise. (Baekeland, 1916) Directing testing before business usage diminishes hazard for a refiner or petrochemical producer.

In this work therefore, the simulation of gasoline production from soyabean oil is carried out, next, the results from the conventional cuts obtained from VGO using the same process line is compared with the cut from soyabean oil. The plant design economic enabled the determination of the unit price for each cost of production which is presented to showcase the unit price of the bio-gasoline produced from soyabean oil.

Methodology

ASPEN HYSYS was used for the simulation of fluid catalytic cracking of soyabean oil. Table 1 presents the average values of operating data used for running the simulated process plant for the production of gasoline. This

operating condition serves as the reported limitation/scope for running of the plant. Figure 1 is a schematic illustration of the fluid catalytic cracking process line of the plant. The framework comprises of three principle units - a riser, a fractionator and a

regenerating link. Both the reactor and the fractionator are furnished with side valves for control of catalyst circulation rate. The FCC riser is typically of the conventional cracker used for the production of gasoline from VGO.

Table 1 The Average values of operating data used for running the simulated process plant for the production of gasoline

Operation Conditions	Average value for Soyabean oil	Average value for Vacuum Gas Oil
Tube section occupied by catalyst	27m	27m
Reactor Pressure	3500kg/cm ²	3500k/cm ²
Feed Temperature	400°C	400 °C
Feed rate	350000kg/hr	450000kg/hr
Feed pre-heat temperature	370 °C	460°C
Regeneration air mass flow rate	60,000kg/hr	60,000kg/hr
Fractionator temperature	360°C	360°C
Stabilizer column temperature	0°C	-1°C

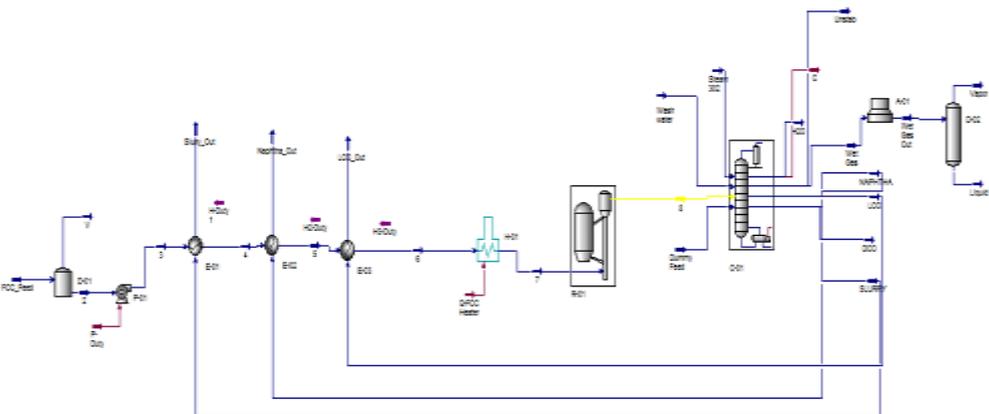


Figure 1 The simulated fluid catalytic cracking process line of the plant.

The simulated fluid catalytic cracking unit process line is presented in Fig 1. The riser worked in an adiabatic mode, where changing pre-heat feed or regenerator temperature will bring about an adjustment in catalyst circulation to keep up reactor outlet temperature. The cracking of soyabean oil occurred at a pressure 3500kg/cm² in reactor riser and the accompanying temperature was retained adiabatically to force the catalyst action on the feedstock. At the average data presented in Table 1, the gasoline cut from soyabean oil and VGO was obtained. The catalyst flow rate, the catalyst to oil ratio was varied and the preheat temperature was changed. As the simulation was made to run, a metering pump accurately controls the feed rate as the feed flows through a preheater. Air and steam, infused through a different preheater/vaporizer, are utilized as feed to the fluidized catalyst and each fraction go from the riser to the fractionator overhead. Each cut leaves the fractionator through a refrigerated stabilizer section to a control valve, which keeps up unit weight at the coveted level and each cut weight is obtained. Areas of the fractionator-regenerator spent catalyst are so designed to allow recirculation into the catalyst unit.

Table 2 Properties of the feed-stocks

Property	Soyabean oil	VGO
°API	21.6	24.7
Sulphur	0%	0.35%
Oxygen	10.5%	0%

Properties of the feedstock are provided in Table 2. The soybean oil has some carbon content and atomic weight of the material allows the material to crack at evaluated breaking points. Bio-materials

In the economic analysis, the weight of the gasoline converted was used for the determination and calculation of the productivity index. Every equipment design was given literature costing, the costing of employees pays was done, the overhead cost was obtained and the unit price of bio-gasoline was calculated (Table 3).

Results and Discussion

The adaptability of the FCC process, where a flowing fluidized bed gives superb mass and heat transfer, and where a response step can be combined with the catalyst regeneration step, have brought about appropriation of fluid catalytic cracking usage outside of the regular atomic weight lessening of the substantial part of unrefined petroleum to obtain gasoline. This utilization of fluid catalytic cracking unit for the processing of soyabean oil at high temperature splits the component to obtain gasoline was carried out at pilot plant scale (Bryden et. al., 2013). The production of gasoline from vacuum gas oil was done utilizing the same procedure of fluid catalytic cracking. The catalyst was a low metals carrying catalyst. The average outlet temperature of 450°C was utilized in the reactor riser.

sources normally have a genuine breaking point that is much lower than that recorded in heating vessels because of atomic weight impedance.

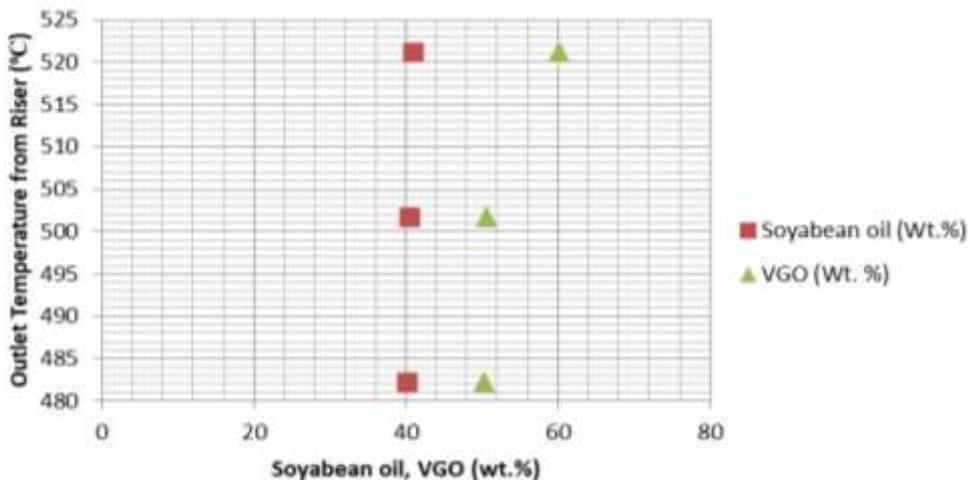


Figure 2 Yields of soybean oil and VGO at the same working conditions

Fig. 2 presents yields of soybean oil and VGO at the same working conditions. The amount of soyabean oil converted to gasoline is slightly affected by the outlet temperature of the riser. It is equally clear that the amount of VGO converted is highly affected by the outlet temperature of the reactor riser. This may amount to a high yield of coke. Whenever the coke produced is constant, the soybean oil delivered more LCO (Fig. 3), less fuel, than the VGO. However a research work (Bradey et.

al., 2013) further characterized the gasoline from soyabean oil and it shows a higher octane rating compared to gasoline from VGO. For the VGO, the assumption made so that the riser ought to work in adiabatic mode during the simulation makes the top of the riser to be 20°C less than the bottom. But for the soybean oil cracking, the riser temperature profile was a plateau, with less than 1°C gradient within the riser Fig 2.

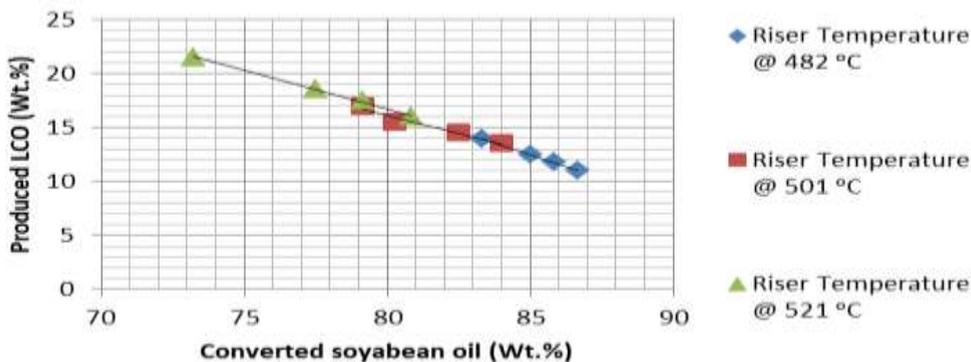


Figure 3 Low cycle oil (LCO) provided and converted amount of soyabean oil

The corresponding riser height and outlet temperature for constant conversion of oil was also compared in

Fig. 4. The soyabean oil indicates a strong recommendation of the use of the same catalytic process with VGO.

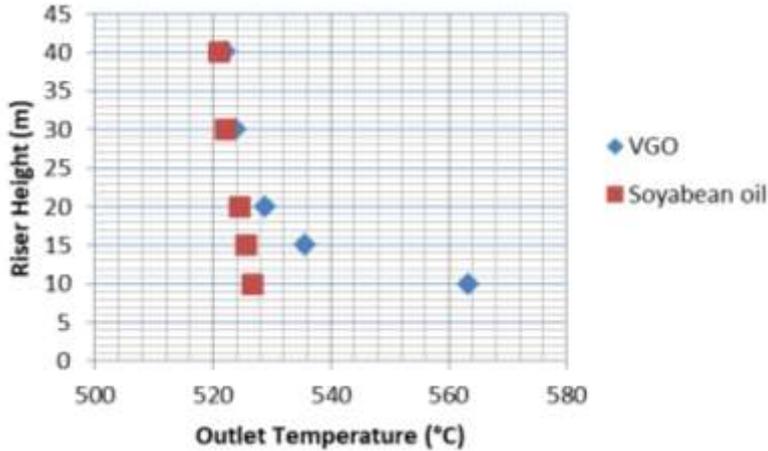


Figure 4 Riser heights versus outlet temperature for constant conversion of oil (Bryden et. al., 2013)

2.2.1 Cost effectiveness of the bio-gasoline production

Since profitability Index (PI) is greater than 1, and then the project is profitable, the internal rate or return (IRR) is 20% per year. Break even occurs at 1.5years and the payback was in 2 years. This is an indication that this industry can begin to realize profit very early. The breakeven point can be reached since the debts can be cancelled by benefits because it relies on agricultural

feedstock. It is important to note that payback is very useful since this production is time sensitive. It is cost justifiable during its economic life, but there may be some external constraint (i.e. bank loans coming due). This implies that the “net profit” from the production must be realized in a defined period of time. This is a strong recommendation because the payback of the sales of this product is capable of bringing about this effect of net profit

$$\text{Payback Period (T)} = \frac{\text{Development Cost (D)}}{\text{Annual Revenues} - \text{Annual Operating Cost (P)}}$$

Data generated regarding Fluid

Catalytic Cracker:

Costs \$40,500 to develop and reduces costs by \$20,500 annually.

Payback period is $D/P =$

$$\$40,500 / \$20,500 = 2 \text{ years.}$$

Investment B costs \$50,500 to develop and reduces costs by \$30,500 annually.

Payback period is $D/P =$

$$\$50,500 / \$30,500 = 1.67 \text{ years.}$$

2.2.2 Unit cost of soyabean gasoline and world view

Considering the current black sooth in Port Harcourt, Nigeria, be that as it may, just to consider bio-fuel cost isn't a sensible method to gauge gas benefits. Truth is told, by expanding the utilization of Biofuels the worldwide vitality supply security can be enhanced,

the ozone harming substance and contamination discharges can be lessened, and furthermore the provincial economy can be moved forward. This is unmistakably comprehended by developed nations which have set up a few strategies to improve biofuel generation by decreasing taxes and duties. The cost of gasoline is from \$0.11 to \$0.18 per litre, contingent upon world oil cost. Contrary to biofuel from vegetative seed oil by means of catalytic cracking process which is from \$0.50 to \$0.80 per litre in the developed nations (Vorhies, 1998). Note that US dollars are considered in the present figures because of the way that the oil advertises is referenced on this money.

Bio-gasoline production costs are profoundly subject to feedstock costs, considering the production expenses, it can be recommended that the innovation and the sort of the crude material utilized is valuable. As per figures from the IEA regarding bio-diesel, generation costs for 6 European biodiesel

manufacturing plants changed over to diesel-equal litres this may differ from \$0.80 to \$0.35 per diesel-comparable litre. Considering that expenses for production by means of improved process, lower unit prices can be achieved. Note that these cost gauges incorporate, the estimation of co-product deals, for example, LCO. Some critical perspectives must be considered based on the determination of production cost.

These days, in the US, biofuel generation depends primarily on soybean oil and creation offices are little scale measured. In this way, it is evaluated that US biofuel generation costs extend from about \$0.48 to \$0.73 per diesel-identical litre. This depends on soybean oil expenses of \$0.38 to \$0.55 per litre of biofuel, generation costs in the scope of \$0.20 to \$0.28 per litre, and side product contribution of about \$0.10 per litre (Vistisen and Zeuthen, 2008). This may be a similar about bio-petrol.

Table 3 Unit costing of the gasoline produced by soyabean oil

Product	Units	Average Cost (\$)	Cost per Litre (\$)
Feedstock			
Seed Prize	0.5	0.7	0.06
Transportation Cost	0.4	0.4	0.05
Pre-treatment Cost	0.3	0.26	0.04
Total Cost Feedstock			
Reactions			
Catalyst	0.005	0.005	0.004
Regeneration	0.002	0.0025	0.002
Energy Resources			
Electric Power	0.15	0.13	0.2

	Steam	0.23	0.23	0.3
	Cooling Water	0.0018	0.0018	0.002
Administration Cost				
	Sales and Administration	0.005	0.004	0.003
	Number of Employees	0.002	0.004	0.003
Maintenance (% of capital cost/litre)				0.003
Insurance (% of capital cost/Litre)				0.007
Cost before Interest, Depreciation and LOC Credit				0.005
LOC				
PRODUCT		UNITS	AVERAGE COST	COST PER LITER
Interest and Depreciation				0.0023
Gasoline Transportation Cost				0.002
Total Cost per Litre				0.6833

2.2.3 Low cycle oil (LCO) Cost by innovative choices.

On one hand, LCO is a key co-product with bio-gasoline that is broadly utilized as a part of a few mechanical processes; then again LCO markets are great. In this way, it could happen that for an expansive scale of bio-gasoline production, an abundance of LCO in the market could cause that no clients were intrigued on paying for it and it would progress toward becoming non gainful. In any case, nowadays, LCO is an important co-product in the bio-gasoline production plant. Accepting that LCO is delivered at a proportion of 2:20, the approaching of LCO is in the request of \$0.10-\$0.20 per litre of bio-gasoline. This is similar to the case of glycerine which is also a co-product in bio-diesel production. It is delivered in a scope of \$500 to \$1,000 per ton (Oasmaa and Peacocke, 2010). Clearly these costs would fall under situations of expansive

scale, newly-created plants and innovation enhanced process. Notwithstanding, in the long haul, estimations demonstrate that product costs could likewise wind up higher and LCO cost could tumble down. Subsequently, attainable technologies of biofuel production costs are examined based on its value which will be higher than that of product from oil. Note that present examination are made on the basis that the bio-gasoline is delivered in developed nations, anyway it could wind up less expensive in developing nations. No examination is found on this premise because of the absence of information.

2.2.4 The implication of using bio-material as feedstock to produce gasoline

When feedstock obtained from plants are changed over through the FCC procedure (presented in this work) to

obtain bio-gasoline, or even other bio-fuels such as ethanol, propanol, butane alcohol etc. A sustainable economy may be actualized in Nigeria. gasoline is the most broadly utilized fuel in Nigeria. Most vehicles are run with the fuel extending up to 100 per cent usage (by volume) in motor cycles and small domestic machines used in cottage industries.

Bio-gasoline is a second era biofuels, or cellulosic biofuels, which is produced in this research soyabean oil, the quality is accessible from existing quality control technologies as indicated in this research. The results presented here can use the production and usage of bio-gasoline into a third era research where we can utilize green plants as feedstock.

The potential financial advantage of green growth feedstock is that it supplants petroleum products because it creates expendable assets by indulging national farming. The implication of this practice is that, bio-gasoline are delivered from sustainable feedstock. Consequently, their generation and utilize could, in principle, be managed with certainly. Research work in the past on greenhouse gas (GHG) emanations presented other financial models which shows that biofuels can prompt decreases in lifecycle GHG emanations compared to traditional petroleum (Hertel et al. 2010, Huang et al. 2013). Second and third era biofuels can possibly set Nigeria's power generation to sky flyers since feedstock can be delivered utilizing land. In addition, an extra horticultural technique is not required, and farming market interceded unemployment

outflows which is currently significant as the current employment rate is challenged.

Conclusions

The fluid catalytic cracking unit is a profitable refining processor for reproducing gasoline. By running the fluid catalytic cracking unit, at the same working conditions with a similar feedstock and catalyst, the FCCU produces yields almost indistinguishable to conventional feed stock FCC units. The FCCU can likewise be utilized to produce new feedstock to decide their relevance to sustainable business or economy. The capacity of the FCCU to create adequate amount of gasoline product from soyabean oil incredibly upgrades the estimation of LCO quality. The adiabatic reactor is a working framework which indicates that the energy needed for production can be estimated for all types of feedstock. The adaptability of the FCCU used in the assessment of process conditions and processing methods makes it easy to carry out an economic estimation of the product price. The discovery of new feedstock has contributed immensely to growth and development of the industry. Simulation of the process is a key advancement in assessing this development. Simulating the process before running a pilot plant and the fully blown plant diminishes hazard and vulnerability by recognizing the ideal feedstock and process conditions on small scale with the goal that fuel and petrochemical producers can "make their benefits on an extensive scale.

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University Incubators: A Pathway to Entrepreneurial Society

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Abstract: This paper argues that universities would improve their involvement through an active and well-integrated incubation system for the advancement of viable entrepreneurial society. Based on a conceptual analysis the study examines the moving trend of universities in society from teaching to research and development, innovation, entrepreneurship and currently to enable an entrepreneurial society by enhancing entrepreneurial norms and institutional improvement. It is positively believed by researchers that the 21st century will depend on knowledge, innovation, entrepreneurship and business incubators. Nevertheless, universities are failing to contribute with full strength in research commercialization, entrepreneurship and economic growth. University incubators afford a facilitative environment for income generation by ensuring a covering with financial and legal support for a smooth collaboration between universities, business persons, government and society. In an entrepreneurial society, universities go one step ahead by configuring the instruments to enhance entrepreneurial norms and build leaders. This study also highlights the strengths and weaknesses of university incubators to promote better economic productivity. Finally the study offers some future directions for university incubators with policy recommendations.

Keywords: University incubator, Entrepreneurial society, Entrepreneurship, Institutional development, University industry linkages.

1. Introduction

The role of universities have changed over time. One feature of this change is the social oriented angle in which; teaching for all, education as a public good has become a social right for everyone to have access (Vryonides & Lamprianou, 2013). Later on a second aspect emerged; the promotion of research culture becomes the path of education pivot by concentrating on research oriented institutes for improving research and development (Casu & Thanassoulis, 2006).

However, in present times universities have also progressed from basic research as a public good to a profit making organizations having directed customers with the sales price of products (Audretsch, 2014). The idea to walk from a non-profit based organization to an income generating mechanism has prompted the competitiveness among universities. The competitive setting, profit maximization, quality education and research, links with industries and making entrepreneurs instead of job hunters have transformed the meaning of the universities entirely (Gul & Ahmad, 2012). Industries and business groups are now the goal of universities to aid them in solving their hitches by providing possible solutions.

Universities have taken numerous steps including establishing university incubators to transfer knowledge to industries, foster innovation and entrepreneurship. The aim of this reviewed research is to examine the moving trend of universities, to understand the entrepreneurial university and university incubators in

enhancing an entrepreneurial society for socio economic development (Audretsch, 2014).

2. Literature Review

2.1 The Concept of University

Incubators

National Business Incubation Association, (2014) defines incubation as a machinery to assist entrepreneurs by providing funds and facilities that aids in producing new projects. Incubators also assist new entrepreneurs in addressing their crucial problems. Shahzad, Ali, Bajwa, and Zia, (2012) also considered incubators as important for viable entrepreneurial growth.

According to UKSPA (2015), business incubation is a means of support to both small and emerging businesses within their environment by providing a secured platform for the development and growth of businesses.

Incubators act as assistance to new entrepreneurs in different ways. Al-mubaraki and Busler (2010) describe the services and functions of incubators such as shared space with technical equipments, managerial support, networking, access to knowledge and financial capital, encouraging entrepreneurs through first funding. Incubators also helps in screening and selecting programs of incubates (Dee, Livesey, Gill & Minshall, 2011), risk forbearance during the early stages of entrepreneurs (Ozdemir & Sehitoglu, 2013) and acts as a middleman to rationalize transaction cost (Tang, Baskaran, Pancholi & Lu, 2013).

The first incubator in the world according to history is known as Batavia Industrial Center, New York, USA and started operating in 1959. In 1980, 12

incubators were in existence but by 2012 the number increased to 1250 in USA and over time the total number according to (National Business Incubation Association, 2014) increased to 7000. Therefore incubators are becoming a growing phenomenon worldwide. There are diverse kinds of incubators to be specific: University-based or connected incubators, Government incubators, private incubators and corporate incubators (Al-Mubarak & Busler, 2012)

Universities are vital actors of economic team to win the game of progress through their active involvement in handling incubators, research and development, innovation, commercialization and formation of entrepreneurs in both developed and developing countries. Likewise, Palumbo and Dominici (2013) define university incubators as a university supported incubation system with space provision within the university and acts to promote the growth of university offshoots.

In another study, Somsuk, Laosirihongthong and McLean (2012) categorised the resources for university incubators to uphold entrepreneurs in four main areas which includes human, financial, organizational and technological resources. Equally, Salem (2014) recommended university incubators as the most prominent type of incubators among others and student entrepreneurs are utilizing the opportunity from university incubators to establish links with industry for launching their own businesses. Some dimensions identified as effective factors of university incubators by researchers includes; infrastructure, networking, human and technical support, faculty and staff, and

institutional reputation (Somsuk, et al., 2012).

2.2 Role of Universities in Building Knowledge, Economic Growth and Research and Development

Knowledge will always remain a striking area to explore for academics with an all-embracing background. Knowledge enhances productivity. However knowledge produced does not automatically become valid for economic growth until it has been moved to firms with substantial effort and cost (Arrow, 1962). Besides previous studies, development of endogenous growth theory (EGT) arrests the researchers' thoughts towards knowledge as economic growth. EGT support knowledge and human capital as a vital production component due to its reflection of endogenous actions.

Universities' status initially was to produce knowledge. Nonetheless, scholars decided to support the communication and alliance of universities with industry to share knowledge for workable goals (Hashmi & Shah, 2013). A good number of researchers have studied the connection between knowledge and economic development which turns out to be a positive one in order to make policy makers see the need of opening a budget towards this important sector (Mercan & Sezer, 2014).

Research and development (R&D) functions are also executed in higher education institutes. R&D culture is the core of higher education to get the fruits of economic and social trees. Developed countries are the leading recipients of R&D events, developing countries are also in the process all the same but in a slow speed. The magnitude of R&D standing depends on publications, patents and licensing (Ahmad, 2012),

citation and R&D expenses (Akhmat, Zaman, Shukui, Javed, & Khan, 2014).

The transition from basic research to innovative research is becoming increasingly famous. In order to be an active part of economic growth, the higher education sector requires innovation (Kowang, Yee, Long, Rasli & Bakar, 2013).

2.3 University and Entrepreneurial Development

The dispute that firms have to strive for existence has confronted the endogenous growth theory (EGT) postulation of knowledge as the non-depreciable critique (Acs & Plummer, 2005). Another postulation that knowledge transfer bears no cost and produces by itself has also been well argued by researchers and evidence that geographical, financial and legislation are restraints one have to face while transferring knowledge (Singh & Marx, 2013). Acs and Plummer, (2005) likewise challenged the EGT postulation that knowledge is a cooperative distribution to all by suggesting entrepreneur's sections.

Bayh Dole Act brought notable changes by contributing in supporting the commercialization activities and minimizing the knowledge gap or filter (Audretsch, 2014). Knowledge filter is used by researchers to distinguish the gap between knowledge and economic knowledge being faced due to various limitations (Audretsch, 2014). However another EGT deduction that R&D will itself change without any further activities is counter down by the reality of knowledge filter (Audretsch, 2014). Universities are encouraged to be more entrepreneurial by creating long term relationships with industries for the success of university commercialization.

EGT though supports knowledge as an economic activator, fails to explain and recognize the knowledge transfer machines. Entrepreneurship has been able to reduce the knowledge filter by establishing a connection between knowledge and economic knowledge (Qian & Acs, 2013).

The role of universities has changed drastically from just teaching and research to another mission which is the transfer of knowledge to society by connections with industry. Entrepreneurial development although contributes greatly in the development of the economy acts as a channel of income generation for universities through university partnerships and also strengthens the university (Gul & Ahmad, 2012).

Thune and Gulbrandsen (2014) evaluated the dynamics of university industry incorporation and clarified how the relationship developed over the period. While concentrating on university industry partnership, universities become an entrepreneurial development machine by instigating innovative idea, supporting and facilitating that idea to become a certainty and finally introducing the new projects into the market. In a conceptual study, Audretsch, (2014) explicated the idea of entrepreneurial university as to establish new businesses, commercialize it to new markets and increase knowledge transfer from university to income generation organizations.

2.4 Role of University Incubators in promoting an Entrepreneurial Society

A good number of incubators around the world are supported by universities. The rest are taking advantages to merge with universities and higher institutions to

achieve the benefits from their research and knowledge. Culkin, (2013) discovered that university incubators are more supportive for entrepreneurs than any other type of incubator.

Incubators have been recognised as a positive instrument for an economic lift (Somsuk, et al, 2012), creation of jobs (Al-mubaraki & Busler, 2010), instituting new entrepreneurs (Tang, et al, 2013), improving the entrepreneur’s productivity (Dee, et al, 2011) and commercialization (Al-mubaraki & Busler, 2010) in developed and developing nations.

Additionally, university incubators have also been discovered as a tool to improve commercialization by instituting spinoffs (Palumbo & Dominici, 2013). Somsuk et al. (2012) defined incubators as a mechanism to support entrepreneurial culture for establishing spinoffs to elevate the survival ratio. OECD (2010) steered the incubator owners to work with universities to help the commercialization for the best advantage of the society. Recently

university incubators have become a growing trend in the development of other incubators (Culkin, 2013).

The role of university incubators is not limited to just providing assistance to newly established ventures but to facilitate an attitude geared towards leadership and institutional development by ensuring entrepreneurial thinking and culture (Al-mubaraki, Busler & Aruna 2013).

In an entrepreneurial society, universities would not only rely on teaching students, enhancing research or even passing knowledge through patents, research contracts, licenses and spinoffs but rather they will build the structures to promote creativity, entrepreneurial cultures and entrepreneurial leaders ensuring that the standard of living of people is lifted (Audretsch, 2014). An entrepreneurial society with the aid of university incubators can be actualized when it is backed up with a strong sense of leadership commitment.

Existing University Incubators

No	Incubator title	University	Country
1.	SETsquared	University of Bath University of Bristol University of Exeter University of Southampton University of Surrey	United Kingdom
2.	Innovation Incubation Center Chaoyang University of Technology	Chaoyang University of Technology	Taiwan
3.	The DMZ at Ryerson University	Ryerson University	Canada
4.	Hebron Startup Labs	Covenant University	Nigeria
5.	Roar Nigeria Hub	University of Nigeria, Nsukka	Nigeria

Conclusion

A good number of economies are going through a lot in terms of financial and human limitations but at the same time not withstanding are attempting to divert towards promoting economic development and becoming a knowledge based economy through entrepreneurial universities. It has been completely acknowledged that the 21st century will depend on learning, development, entrepreneurship, and incubators.

The creation of strong, trustworthy and dependable association of university, industry, government and community becomes necessary for the economic, social as well as financial improvement of a country. The advertisement and advancement of quadratic helix approach is essential for inspiring the entrepreneurial condition through the station of university incubators.

Consequently, the general advanced education framework requests extension and dependability particularly in the improvement and expansion of incubators to advance the key designs of development, creativity, globalization, commercialization and entrepreneurship.

Recommendation

The quantity of university based incubators is little with just few colleges having dynamic business incubator.

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Therefore, university administrations and the Ministry of Education should set aside assets and institute strategies for more universities to begin incubators.

The economies of both developed and developing nations while making approach structures, planning yearly improvement designs and budgetary spending plans ought to consider building up and redesigning the university incubators for a prosperous, steady and persisting entrepreneurial society.

The current university based incubators likewise should be extended and upgraded given the appeal from potential incubatees. This will empower them to accommodate more incubatees and perhaps make an expanded number of effective new companies.

University incubators should disconnect incubator administration from the normal university administration. University incubators' leaders require not to be academicians but rather proficient administrators who understand and presumably have encountered the difficulties of starting new businesses.

University incubators need to connect more to industry players and fruitful business tycoons in order to attract the benefits that come from partnership and to enhance the performance level.

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Gender Equality and Sustainable Development in Nigeria

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Abstract: Sustainable development is development that meets the basic needs of the present generation in a way that did not affect the ability of the future generation to meet their needs. Gender equity serves as an essential building block for this kind of development. Despite the changes in the approach used in addressing social, economic and environmental issues in Nigeria, the achievement of developmental goals still remain a mirage. Women by the social settings carry out more responsibility that are not paid which constraint their capacity to fight for their rights. This study therefore examines gender equality and sustainable development in Nigeria. The study specifically examines the magnitude of the relationship between gender equality and sustainable development and investigates how the relationship between men and women affect sustainable development in Nigeria. Annual time series data sourced from the World Bank Development Index (WDI) covering the period of 2001 to 2016 was used in the study. As preliminary tests, descriptive and graphical trend analysis, and unit root test was conducted while the correlation analysis, OLS regression analysis and Granger causality test were employed in the actual estimation. The correlation analysis indicates a positive very strong correlation between gender equality index and sustainable development index

($r=0.734$) while a positive weak correlation was evident in the association between environmental performance proxy by emission of CO₂ and sustainable development index ($r=0.733$). The OLS regression estimate showed a significant positive relationship between the sustainable development and Gender equality ($\beta=7.652$, $t=2.780$, $p<0.05$) and a negative significant relationship between environmental performance and sustainable development ($\beta=-3.654$, $t=6.868$, $p<0.05$). The main submission from the result is that, gender equality has a significant positive relationship with sustainable development in Nigeria. The study recommends the need to encourage equitable and responsible participation of men and women at the different level where decisions are made and control is exercised by government and policy makers.

Key Words: Gender, Equality, Sustainable Development, Environmental Performance, Economic environment

Word Counts: 319

1. Introduction

Sustainable development is now being advocated as means of responding to global environmental concerns, biophysical issues, fairness, equity and distribution (Adejumo and Adejumo, 2014). Thus, both private and public organizations have now embraced sustainable development as a new strategy of development (Lélé, 1991). This development strategy or perspective influences the formulation issues and implementation actions. It captures the interrelationship between environment, society and economy, conceived as separate although connected constituent parts of sustainable development (Tchouassi, 2012). It requires balancing environmental, societal and economic considerations in the pursuit of development and improved quality of life (Arogundade, 2011).

Sustainable development cannot be achieved without gender equality. Gender Equity is the process of allocating resources, programmes, and decision fairly to both males and females without any form of discrimination and addressing the imbalances in the benefits available to

males and females (Pathania, 2017). To have a strong family and a viable society in this rapidly changing world there is need for partnership and equality between men and women. Across human history, women have been consistently excluded from decision-making in the society. In governance and all social groups, women are systematically discriminated. And this allows the domination of few social groups in governance at the expense of others. This power structure caused further imbalance, marginalization, suffering and conflict (Tchouassi, 2012). Gender equity is very essential in achieving sustainable development because none of the three ingredients of sustainable development can be achieved without ensuring gender equality. For instance, to achieve green environment, women must have the knowledge of their relationship between natural and environmental resources and their roles in resource planning and management. Also economic objective cannot be achieved without putting in place strategies that are gender sensitive. More also, social objective cannot be achieved without gender equality. Sexism, racism and ethnic,

religion, social status, political opinion and sexual orientation based discrimination rising in the society are clear indicators of social inequity (Tchouassi, 2012).

In Nigeria, despite the changes in the approach used in addressing social, economic and environmental issues in Nigeria, the achievement of developmental goals still remain a mirage. The problem of poverty, flooding, ethnic crisis, environmental pollution, corruption and inequality in income distribution has been on the increase (Adejumo and Adejumo, 2014). In 2004 Nigerian profile showed a relative poverty of 54.4% which increased to 69% in 2010. Besides, flood hazards in Nigerian cities have been have more than doubled in the last ten years (Odermeho, 1993). In 2012, Nigeria experienced the worst flooding (Adejumo and Adejumo, 2014). A review of existing literature on gender and sustainable development indicates a lack of consistency in their interpretation because of their incomplete perception of the problems of poverty, vulnerability, environmental and natural resources, environmental degradation, sustainability and participation. These weaknesses have affected policy making specifically in the context of international trade, agriculture, and forestry. It is against this background that this study was motivated to examine gender equality and sustainable development in Nigeria.

Based on the foregoing, this study will make concrete effort to provide answers to the following pertinent questions: What is the association between gender equality and sustainable development; What is the magnitude of the relationship between gender equality and sustainable development in Nigeria;

and How does the relationship between men and women affect sustainable development in Nigeria. This is with a view to enhance the understanding of the analytical content of sustainable development and sensitise the Nigerian government to key into the current wave of sustaining the global economy. The paper will afford economic planners the opportunity to further deepen their understanding of gender equality as a necessary component of national growth and poverty reduction strategies and help them to act on this understanding by integrating measures to overcome gender-related obstacles into national strategies and budgetary policies and procedures in order to achieve the objectives of sustainable development in Nigeria. This introduction section is preceded by literature review section followed by data sources and model specification as section which precedes the empirical results, discussion and conclusion section.

2. Literature Review

Sustainable development refers to the continuous and sustained qualitative improvement in overall standard of living of people in a society or nation and the structural transformation/changes in the productive and distributive input and output systems of the economy (Ojobo, 2005). Springett and Foster (2005) argue that sustainable development has to do with the well-being of all people in a particular society or community. A nation or community could be said to have attained or be on the part of sustainable development when members of that community or society could boast of improved condition of living on a continuous basis over a reasonable period of time. Sustainable development as a goal therefore entails the

eradication of poverty in terms of physical and non-physical needs; and quality of life beyond mere sustenance which implies human dignity and liberty. World Commission on Environment (1987) defines sustainable development as “development that meets the needs of the present without compromising the ability of the future generation to meet their own needs”. These needs entail food, housing, clothing, health, education industrial and agricultural development, preservation and protection of the environment to enable people to live a comfortable life.

In recent time, gender equality has been linked with sustainable development in economic literature. According to Pathania, (2017) sustainable development depends on an equitable distribution of resources and it cannot be achieved without gender equality. Gender is referred to as the set of characteristics, roles and behavior patterns that distinguish women from men which are constructed not biologically, but socially and culturally. It refers not only to women and men but also to the relations of power between them and the other marginalized groups (for example the handicrafts group) (Tchouassi, 2012). Gender Equity is the process of allocating resources, programs, and decision making fairly to both males and females without any discrimination on the basis of sex...and addressing any imbalances in the benefits available to males and females (Pathania, 2017). Gender relations are constantly being renegotiated in the context of changing political, economic, social, and cultural environments at the local, national and international level (Sen Gita, 1999).

Gender equality and sustainable development have received a great amount of attention from the theoretical point of view. The two main theories in focus are the social learning theory and humanistic theory. Social learning theory of Miller (2011) stated that personality represents an interaction of the individual with his/her environment. Put differently, one cannot speak of a personality internal to the individual that is independent of the environment. Neither can one focus on behaviour as being an automatic response to an objective set of environmental stimuli. Rather to understand behavior one must take the individual (history of learning and experiences) and the environment into account. It is through the contingencies of social learning: cues, recognitions and consequences that individual behavior can best be understood. Miller defines personality as relatively stable set of potentials for responding to situation in a particular way. For Miller, personality and behaviour are always changeable. He opines that if you change the way a person thinks or change the environment the person is responding to, his/her behavior will change. The more life experience one has in building up certain sets of beliefs, the more effort and intervention required for change to occur. The theory of social learning was used in this because the theory explains the individuals' personality and how it is influenced by the environment. The Humanistic theory is a psychological perspective which rose to prominence in the mid-20th century in response to the psychoanalytic theory of Sigmund Freud and the behaviourism of Skinner. The theory is sometimes referred to as a "third force," as distinct from the two more traditional approaches of psychoanalytic and behaviourism. This

theory emphasizes on an individual's inherent drive towards self-actualization and creativity (Aileen Milne 2003). The theory acknowledges that an individuals' mind is strongly influenced by ongoing determining forces in both their unconscious and conscious world around them, specifically the society in which they live. The focus of the humanistic perspective is on the self, and this view argues that individuals are free to choose their own behaviour, rather than reacting to environmental stimuli and reinforcers. Here, issues dealing with self-esteem, self-fulfilment, and needs are paramount.

Several empirical studies conducted to examine the effect of gender equality on sustainable development pointed to the devastating negative effect of gender inequality on sustainable development in both developed and developing nations. For instance, Tchouassi (2012) analyze the relationship between gender equality and sustainable development based on the Kuznets curve associated to environmental analysis. The cross-sectional analysis, with data from 11 countries in Central Africa in 2010, was used. Results find a positive correlation between gender equality and sustainable development. When the Multidimensional poverty index increases, environmental problems reduce, translating the role of gender in sustainable development in all Central Africa countries. In another study Chowdhury, Dewan, Quaddus, Naude and Siddique (2017) explore the ways and means of mitigating gender inequality for sustainable development of coastal fishing communities of Cox's Bazar, Bangladesh to determine the indicators of gender inequality. Data were collected using the semi-structured interviews from the coastal women,

NGO members and local government representatives of coastal fishing community of Bangladesh. Analytical Hierarchy Process (AHP) integrated Quality Function Deployment (QFD) is used to analyse the data. The study finds that ensuring education, access to financing and skill development are the most important factors in mitigating gender inequality for sustainable development. In a similar vein, Fodor and Horn (2015) explores the macro-level determinants of the gender poverty gap in the ten post-socialist European Union member states using the 2008 cross-sectional wave of the survey Statistics on Income and Living Conditions (EU-SILC) and multi-level modeling techniques. In dialogue with the literature on the impact of economic development on gender inequality in Asia and Latin America, the study find that fast-paced, foreign capital led economic growth is associated with a larger gender poverty gap in Central and Eastern Europe, while generous welfare policies, specifically higher levels of spending on pensions and family policies are correlated with women's lower relative destitution. The findings suggest that structural adjustment and global market integration may exacerbate women's vulnerability even when they are well equipped with human capital and other resources to compete with men in the labor market. Also Klasen and Lamanna (2009) investigate to what extent gender gaps in education and employment (proxied using gender gaps in labor force participation) reduce economic growth using cross-country and panel regressions, we. Using the most recent data and investigating an extended time period (1960–2000), the study update the results of previous studies on education gaps on growth and extend

the analysis to employment gaps using panel data. The study finds that gender gaps in education and employment considerably reduce economic growth. The combined “costs” of education and employment gaps in the Middle East and North Africa, and South Asia amount respectively to 0.9–1.7 and 0.1–1.6 percentage point differences in growth compared to East Asia. Gender gaps in employment appear to have an increasing effect on economic growth differences between regions, with the Middle East and North Africa, and South Asia suffering from slower growth in female employment.

3. Data Sources, Variables and Model Specification and Estimation

This study on gender equality and sustainable development in Nigeria follows ex post factor research design. The choice of this research design is primarily because it is a quasi-experimental design useful in examining how an independent variable, present prior to the study in the participants, affects a dependent variable. The study used annual time series data covering 14 years period from 2000 to 2016 compiled from the World Bank (World Economic Indicators) and Central Bank of Nigeria (CBN) statistical bulletin. The choice of the base year (2000) and end of period (2016) is premised on the need to cover the major period when 189 Heads of States and Government gathered (September, 2000) to reaffirm their faith in the United Nations and to adopt the United Nations Millennium Declaration for improving the citizens of developing and under-developed nations of the world. The short time frame covered in the study was mainly because relevant data on Nigeria were not available except from year 2001 to 2016. In the study gender was captures

using CPIA Gender Equality Index GEI a new index for measurement of gender disparity introduced in 2010 by the United Nations Development Programme (UNDP) in line with the study conducted by Adekola, Olawole-Isaac, Ajibola & Salau, (2015) and Tchouassi (2012). It is a composite measure which captures the loss of achievement, within a country, due to gender inequality, and uses three dimensions to do so: reproductive health, empowerment, and labor market participation. The new index was introduced as an experimental measure to remedy the shortcomings of the previous, and no longer used, indicators, the gender development index (GDI) and the Gender empowerment measure (GEM).

Sustainable development was measured using Real GDP per capita growth in line with Minniti and Nardone, (2007). The environmental performance was captured using CO₂ emissions (emissions of CO₂ per capita and emissions of CO₂ growth) to quantify and numerically benchmark the environmental performance of a country's policies in line with Tchouassi (2012) who used emissions of CO₂ as one of the environmental performance index. The functional transformation of the relationship among the aforementioned variables is presented as follows

$$SDI = f(GEI, ECO_2) \quad (1)$$

This functional relationship is transformed into an econometric model for the purpose of estimation as follows

$$SDI = \beta_0 + \beta_1 GEI + \beta_2 ECO_2 + e \quad (2)$$

Where SDI is sustainable development proxy by Real GDP per capita growth, gender equality was proxy by gender equality index GEI and environmental performance proxy by emissions of CO₂. The Jarque-Bera Normality test,

line graph trend analysis, and unit root test was conducted as pre estimation test. In the actual estimation correlation analysis to determine the association among the variables, regression analysis to determine the relationship among gender equality, environmental performance and sustainable development and Granger causality test to determine the direction of causality between gender and sustainable development. The choice of Granger causality technique was because the technique is suitable in determining whether past changes in a variable is responsible in the present observation or not as there is a possibility that the

relationship that exist in theory may not work in real life situation due to some factors which may not be clearly specified in the theory (Ajisafe et al 2006).

4. Results and Discussion

A. Preliminary Test

The preliminary test to evaluate the time series properties and or the nature of the distribution of the data set used in this study consist of descriptive and graphical trend analysis and unit root test. These results are presented and discussed as follows:

I. Descriptive Analysis

Table 1: Descriptive Statistics

	SDI	GEI	ECO2
Mean	4.812825	3.071765	0.769657
Median	3.018654	3.000000	0.672129
Maximum	30.34224	3.510000	1.334583
Minimum	0.793569	3.000000	0.486844
Std. Dev.	6.792836	0.136209	0.286609
Skewness	3.375475	2.213869	0.694257
Kurtosis	13.27443	7.357947	2.010598
Jarque-Bera	107.0570	27.33924	2.059045
Probability	0.000000	0.000001	0.357177
Sum	81.81802	52.22000	13.08416
Sum Sq. Dev.	738.2820	0.296847	1.314317
Observations	17	17	17

Source: Author, 2018

The result as presented in Table 1 showed that sustainable development, gender equality and environmental performance are positively skewed since their means are greater than the medians. The skewness coefficient of gender is greater than one for sustainable development and gender equality indicating that this variable is highly symmetrical while the skewness

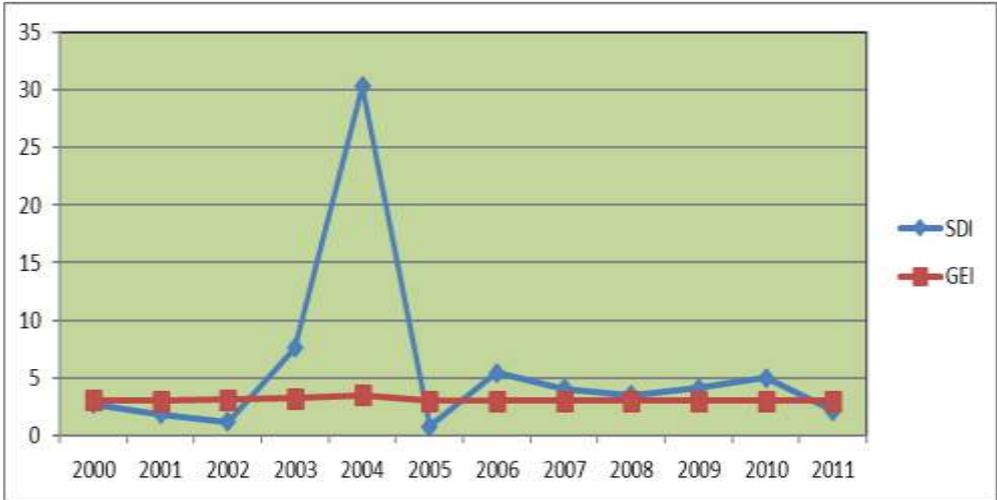
coefficient of environmental performance is not. The positive values of the kurtosis of all the variables established the fact that these variables are leptokurtic in nature. The values of the Jarque-Bera statistics showed that sustainable development and gender equality are normally distributed since their p-values are not statistically

significant at 5% level of significance

while environmental performance is not.

II Trend Analysis

Figure 1: Trend of Sustainable Development and Gender Equality



Source: Author, 2018.

The trend of sustainable development as shown in Figure 1 indicates that over the entire period there sustainable development index have been very unpredictable in the sense that for some years there is a sharp increase and for

some other years there is a dramatic sharp decline in the index in Nigeria. Meanwhile gender equality was significantly very low over the entire period.

II. Lag Selection

Table 2: Lag-Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-40.89819	NA*	20.50522*	5.853092*	5.994702*	5.851583*
1	-40.84756	0.074259	23.45321	5.979674	6.168487	5.977663
2	-40.24844	0.798818	25.07143	6.033126	6.269142	6.030612

Source: Author, 2018

Based on the result in table 2 a maximum of 0 lags as suggested by sequential modified LR test, Final

prediction error and Hannan-Quinn information criterion (HQ) was used in the analysis

III. Unit Root Test

Table 3: Unit root test results.

Variables		ADF Test (Value)		Order of Integration
		Level	First Diff	
SDI		--2.697384	-6.140506	I(0)
GEI		0.031039	-5.966270	I(1)
ECO2		-1.884840	-3.348406	I(1)
Critical Value @	1%	-2.717511	-2.728252	
	5%	-1.964418	-1.966270	
	10%	-1.605603	-1.605026	

Source: Author, 2018

The result of the Augmented Dickey Fuller (ADF) unit root test as presented in Table 3 showed that all the variables except sustainable development index were only stationary at first difference at 5% level of significance.

B. Empirical Results

I. Association between Gender Equality and Sustainable Development.

The result of the empirical analysis of the first specific objective of the study which is to association between Gender Equality and Sustainable Development is presented in table 4:

Table 4: Correlation Results

	SDI	GEDR	ECO2
SDI	1		
GEDR	0.733925	1	
ECO2	0.177701	0.008452	1

Source: Author, 2018

Table 4 shows that there is a positive very strong correlation between gender equality index and sustainable development index ($r= 0.733925$). When the sustainable development index increases gender equality increases. When the gender equality index increases the environmental problems are reduced, then ensuring sustainable development in Nigeria. On the other end, there was also a positive weak correlation between environmental performance proxy by

emission of CO2 and sustainable development index ($r= 0.733925$).

II. Relationship between gender equality and sustainable development in Nigeria

The result of the second specific objective of the study which is to investigate the relationship between gender equality and sustainable development in Nigeria is presented in table 5:

Table 5: OLS Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GEI	7.652484	2.752356	2.780339	0.0156
ECO2	-3.654607	1.187598	-3.077310	0.0088
C	0.980856	0.142807	6.868396	0.0000
R-squared	0.658507			
Adjusted R ²	0.605969			
F-statistic	12.53404			
Durbin-Watson stat	2.340593			

Source: Author, 2018

Table 5 presents the results of the Ordinary Least Squares regression estimate and shows that there is a significant positive relationship between the sustainable development index and the Gender inequality index ($\beta=7.652484$, $t=2.780339$, $p<0.05$) in Nigeria. However, the result also showed a negative significant relationship between environmental performance and sustainable

development index ($\beta=-3.654607$, $t=-3.077310$, $p<0.05$). The coefficient of determination 0.658507, showed that the explanatory variables predict about 66% of the variation in sustainable development index while the remaining 34% is accounted by other variables outside the scope of this study

III. Relationship between Men and Women and effect on Sustainable Development in Nigeria

Table 6: Granger Causality Test

Hypothesis	F-Statistics	Prob
Panel A: Causality from other variables to SDI		
GEI \rightarrow SDI	6.89125	0.0131
ECO2 \rightarrow SDI	4.41670	0.0422
Panel B: Causality from SDI to other variables		
SDI \rightarrow GEI	9.60055	0.0047
SDI \rightarrow ECO2	0.39348	0.6847

Source: Author, 2018

The Granger causality test results shown in panel A of table 6 shows that all the variables in the system (GEI and ECO2) granger cause sustainable development at 5% level of significance. Hence, the null hypothesis that there is no causality relationship among these variables is rejected. In panel B sustainable development granger cause gender equality at the 5% level except for environmental performance. Therefore,

the Granger causality test established a bi-causality relationship between gender equality and sustainable development while causality only run from environmental performance to sustainable development it does not run from sustainable development to environmental performance

C. Discussion of Results

The result of the correlation analysis indicates a positive very strong

correlation between gender equality index and sustainable development index ($r=0.733925$) while a positive weak correlation was evident in the association between environmental performance proxy by emission of CO₂ and sustainable development index ($r=0.733925$). The result of the OLS regression estimate showed that there is a significant positive relationship between the sustainable development index and the Gender inequality index ($\beta=7.652484$, $t=2.780339$, $p<0.05$) and a negative significant relationship between environmental performance and sustainable development index ($\beta=-3.654607$, $t=6.868396$, $p<0.05$). From the foregoing empirical results, it is evident that, gender equality has a significant positive relationship with sustainable development in Nigeria. As economic implication, it is clear from the result that when sustainable development index increases, the Gender equality index increases. This means that the economic participation of women, the education of women, the access to health and political empowerment of women increase. Our results gave credence to the findings of Tchouassi (2012) on the relationship between gender equality and sustainable development. Results find a positive correlation between gender equality and sustainable development. This result corroborates the findings of Chowdhury, Dewan, Quaddus, Naude and Siddique (2017) on the ways and means of mitigating gender inequality for sustainable development of coastal

fishing communities of Cox's Bazar, Bangladesh. The study finds that ensuring education, access to financing and skill development are the most important factors in mitigating gender inequality for sustainable development.

5. Conclusion and Recommendations

Based on evidence from the result, it can be inferred that gender equality has a significant positive relationship with sustainable development while environmental performance has a negative relationship with sustainable development in Nigeria. As economic implication, it is clear from the result that when sustainable development index increases, the Gender equality index increases. This means that the economic participation of women, the education of women, the access to health and political empowerment of women increase. On the basis of the findings, the study recommends that, if the processes of democratizing development and securing its social and political sustainability are to be firmly established, equitable and responsible participation by both men and women at the different levels where decisions are made and control is exercised should be encouraged by the government. It is also important to recognize the active contribution made by men and women through unpaid, shared and cooperative work in local initiatives designed to mitigate existing deficiencies or overcome particular environmental problems and thus improve the quality of life for their families and the world around them.

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A Systematic Review of Franchising as an Alternative Business Model

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Abstract: *In today's business world, franchising has become a viable alternative business model for expansion to many entrepreneurs. As a result, this paper aims to systematically review underlying issues of franchising systems and make suggestions for further research based on identified gaps. The study adopted the Systematic Quantitative Assessment Technique (SQAT) in analysing 91 English peer-reviewed journal articles from 2009-2018 on franchising from six high quality academic databases: Emerald, Elsevier, Springer, Sage, Taylor and Francis, and Wiley. The study reveals a significant work in franchising articles with 17 and 15 papers out of 91 reviewed articles drawing attention to conflict management and market selection processes respectively. 61 out of 91 of the articles were empirical in nature and the theoretical background upon which majority of the papers rested on was Agency theory and Resource Scarcity theory. A large number of the studies were conducted in the USA and Europe, whilst the least were from Africa and none from South America, with survey and Panel data being the most prominent research methods. The study also presented evidence of a growing trend in the number of franchising articles within the ten years. The findings of this research provide an x-ray of discourses on the Franchising research topic, showing intricacies that will serve as guides for existing and prospective researchers in the field. The significant contribution of this study is that it is a new addition to the franchising field, offering insights to act as guides for future researchers.*

Keywords: Franchising, Conflict Management, Agency theory, Resource scarcity theory, Systematic review

Introduction

The concept of franchising dates as far back as the 1850s when Singer Sewing

Machines, located in New England, decided to market its products throughout the United States (Olotu &

Awoseila, 2011). Grzelak and Matejun (2013), described the concept as a situation whereby the franchisor, based on an agreement, transfers the mode of operation of a particular business to the franchisee, in exchange for a fee known as royalty. From an entrepreneurial perspective, franchising can be referred to as a form of business ownership where an entrepreneur (franchisor) contractually allows another entrepreneur (franchisee) to provide equity to invest in his or her franchising firm (Alon et al., 2017).

Franchising is basically categorised into two: product/trade name franchising, and business format franchising. The product/trade name franchising allows the franchisee (dealer) to buy products from the franchisor (supplier), or to license the use of its trade name. Such products range from automobiles, to appliances, foods, and others (Lafontaine & Blair, 2009). On the other hand, business format franchising is a system in which a franchisor sells a franchisee the right to use all of the elements of a fully integrated business operation; this is common among fast-food restaurants, hotels, retailing and many other types of businesses (Badrinarayanan, et al, 2016)).

Franchising has continued to attract individuals with entrepreneurial spirit who seek to establish and manage their own businesses (Cumberland & Githens, 2012). This is because it offers entrepreneurs an easier way to enter the business world using renowned brands, creating wider distribution systems (Sanny et al., 2017), while also providing growth, expansion, support, experience, and training for such entrepreneurs (Seo, 2016; Alon et al., 2017).

Also, franchising is a global success story in which economies across the world have immensely benefitted, as it has been a major service provider, job creator, and self-employment opportunity to the populace of both developed and developing nations (Bodey et al., 2013). For instance, between 2011 and 2016, the average annual job growth in the franchising sector of USA was 2.6%, nearly 2% higher than all other businesses in the economy (“ITA Franchising Top Market Reports”, 2016). Some of the leading US franchise firms include McDonalds, located in about 36,258 places, with a contribution of about \$87.78bn in sales; 7 Eleven, sited in about 55,801 locations, and contributing about \$84.50bn in sales; as well as KFC, represented in about 19,420 locations across the globe, contributing about \$23.40bn in sales.

The merits of franchising cannot be overemphasized, however, some factors make entrepreneurs hesitant to engage in it. The most common is the fear of information asymmetry (Lindblom & Tikkanen, 2010). Many times, the franchisor discloses incomplete information to the franchisee, especially in cases where the franchisor has a bit of information that will be detrimental to the franchisee (Sadeh & Kacker, 2017). Also, the uncertainty of the response of the local market, as well as acceptance of the brand name where the new franchise is to be set up, poses a big risk to the franchisee (Lanchimba, 2018).

Considering the immediate and potential benefits of franchising to entrepreneurs and economies, it is of great necessity that the franchising field be explored in depth, as the concept of franchising could be what is needed to spur businesses and economies unto

development, as well as the sustainability of such development.

As such, this study conducts a quantitative and systematic analysis of 91 scholarly articles in the field of franchising, in a bid to highlight trends and gaps which will serve as reference points for future research. In addition, the study recommends and offers propositions, on possible ways to bridge such identified gaps.

The remainder of this paper is organized as such: The methodology of the study is expounded, followed by the discussion on the findings and suggestions for future research. Lastly, the conclusion, limitations, and suggestions for future research based on such limitations are discussed.

2. Methodology

This study employed the “Systematic Quantitative Assessment Technique” (SQAT) developed by Pickering and Byrne (2013) in analysing the existing peer-reviewed journal articles on franchising research. The step by step approach of the technique helped the researchers to identify gaps in the reviewed articles, such as the time distribution, geographical distribution, theories adopted, methodologies, focal themes, as well as the nature of the articles reviewed (Pickering and Byrne, 2014).

For an effective systematic review, the technique adopts five steps and the application of each step in this study is described in Table 1. Ninety one peer-reviewed English franchising articles met the criteria for selection, based on the six databases used by the researchers.

Table 1: Description and Application of SQAT

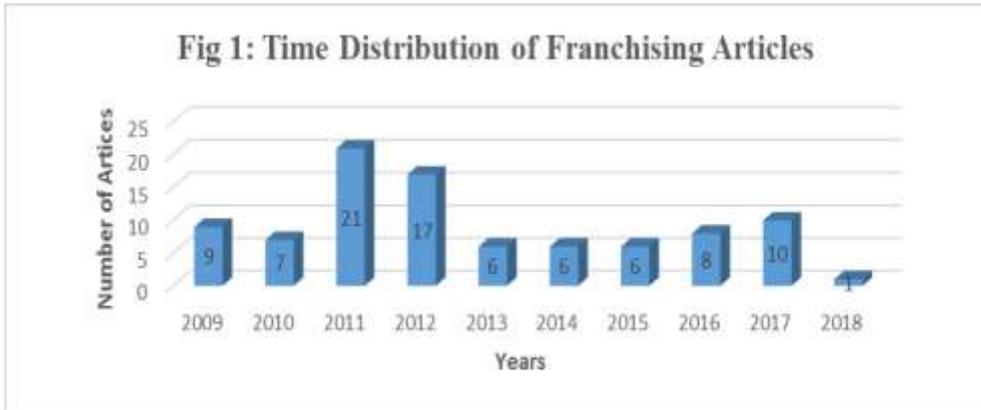
S/N	Step	Application in current study
1.	Define topic	Franchising as an alternative business model
2.	Formulate research questions	Six research questions: i. What is the time distribution of franchising research articles? ii. Where were these articles written? iii. What were the nature of published franchising articles? (Conceptual vs Empirical) iv. Which theory/theories was /were adopted in these articles? v. What research methods were employed in the research? vi. What were the specific themes explored in the articles?
3.	Identify key words	“franchising”
4.	Identify and search databases	i. 6 databases exploited: Elsevier; Emerald; Sage; Springer; Taylor and Francis & Wiley. ii. “All in title” search using single search: “franchising”
5.	Read and assess publications	i. Abstracts of articles found were read and where it was necessary, the entire paper was read to ensure that all the research questions were answered. ii. Literature reviews, book chapters, conference proceedings and a systematic review article were not included; only peer-reviewed conceptual and empirical papers were taken.

3. Findings

3.1 Time Distribution of Franchising Articles

This study reviewed 91 papers as they were the ones that met the criteria of selection within ten years (2009-2018);

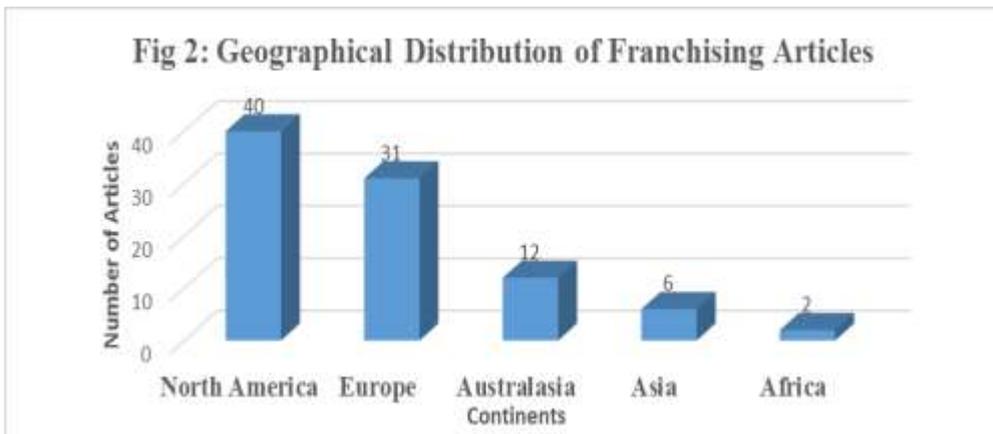
as ten years is considered sufficient time study.
to include enough data necessary for the



3.2 Geographical Distribution of Franchising Articles

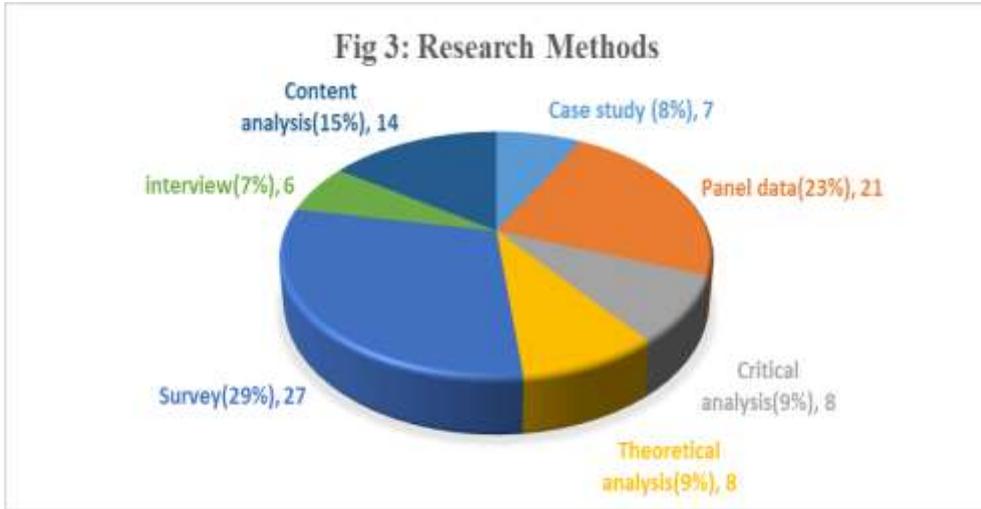
The geographical distribution of the 91 Franchising articles reviewed in this study is presented in Figure 2. North

America had the highest number of published articles (40), followed by Europe (31), Australasia (12), Asia (6), Africa (2) and none from South America.



3.3 Research Methods of franchising articles

Figure 3 depicts the methodologies adopted in the 91 franchising articles reviewed in this study.



Based on the findings, 29% of the reviewed articles employed a survey method in which structured questionnaires were administered to stakeholders for their responses regarding various issues underlying franchising (Barthélemy, 2011; Bodey et al., 2013; Dada et al., 2015). This was closely trailed by articles using panel data (23%), that is, data that has been collated over periods of time such as months or years, and stored-up in databanks (Lucia-Palacios et al., 2014; Alon et al., 2017; Lanchimba et al., 2018). 15% of the papers adopted content analysis in which the articles analysed reports and/or documents in testing relevant hypotheses as applicable to their studies (Kacker & Perrigot, 2016; Grünhagen, et al., 2017; Hussain et al., 2017).

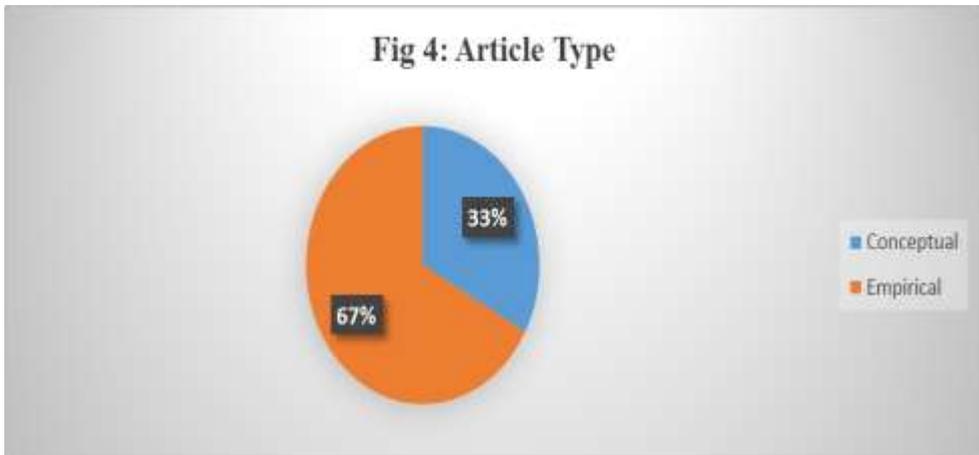
Studies that adopted critical analysis (9%) focused on previous works on franchising to provide an initial platform for their studies (Gillis & Castrogiovanni, 2012; Cumberland & Githens, 2012; Weaven et al., 2014), while papers that adopted theoretical analysis (9%) proposed theoretical frameworks and models in their studies

(Hendrikse & Jiang, 2011; Paswan, et al., 2014; Krzeminska & Zeyen, 2017).

Papers that utilised case study (Chikweche & Fletcher, 2011; Frazer et.al, 2012; Forte & Carvalho, 2013) and interview research methods (Flint-Hartle & Bruin 2011; Nyadzayo et.al, 2011; Weaven et.al, 2012) were the least represented out of the seven research methods acknowledged in this systematic review, as they were only adopted by 8% and 7% of the reviewed papers, respectively.

3.4 Article Type

Figure 4 presents the dual classification of articles: conceptual and empirical. The conceptual papers dealt with the break-down of theories or concepts into their constituent parts to enable the understanding of existing knowledge concerning franchising, whereas the empirical papers consisted of articles that adopted practical measures such as observation and experimentation, which produced verifiable results (“Differences between conceptual and empirical”, 2011).



It can be observed from Figure 4 that 67% (61 out of 91) of the articles reviewed were empirically based, through which the researchers presented useful practical conclusions on issues pertaining to franchising, to the stakeholders involved in the franchise activities (Barthelemy, 2011; Hussain & Windsperger, 2013; Lanchimba et al., 2018). The remaining 33% were conceptual articles, through which the authors offered recommendations

(Grünhagen et al., 2010; Marsh & Fawcett, 2011; Tikoo et al., 2012).

3.5 Theories of Franchising Articles

A total of 21 theories were used in the 91 papers on franchising reviewed in this study. Of these, agency theory constituted 51.56%, resource scarcity theory, 14.84%, and Organizational Learning theory, 6.25%, as depicted in figure 5. The remaining 18 theories were used in negligible percentages, totalling 27.35%.



Agency theory

This theory explains the relationship between principals (franchisors) and agents (franchisees), and it is concerned with problems that exist in agency relationships (Gills et al., 2011; Weaven

et al., 2014; Dada et al., 2015; Grünhagen, et al., 2017) Some of the articles identified agency related problems such as unaligned goals (Asemota & Chahine, 2017), different levels of aversion to risk (Moon et al.,

2017), and information asymmetry (Perdreau et al., 2017) between franchisors and franchisees, as well as ways to resolve such problems (Hua & Dalbor, 2013; Utgard, 2015; López-Bayón, & López-Fernández, 2016; Hussain et.al, 2017).

Resource Scarcity

The Resource Scarcity theory posits that franchisor firms are allowed to use capital and managerial expertise of franchisees to accelerate growth and build their brand name (Hsu & Jang, 2009; Sadi & Henderson, 2011; Koh et al., 2015; Bouley et al., 2016; Moon et al., 2017). Some of the papers considered variables like franchise system size, age of the firm, growth rate and capital scarcity which would have an effect on the propensity to franchise (Combs et al., 2011; Sadi & Henderson, 2011; Safón & Escribá-Esteve, 2011; Gillis & Castrogiovanni, 2012).

Organisational Learning

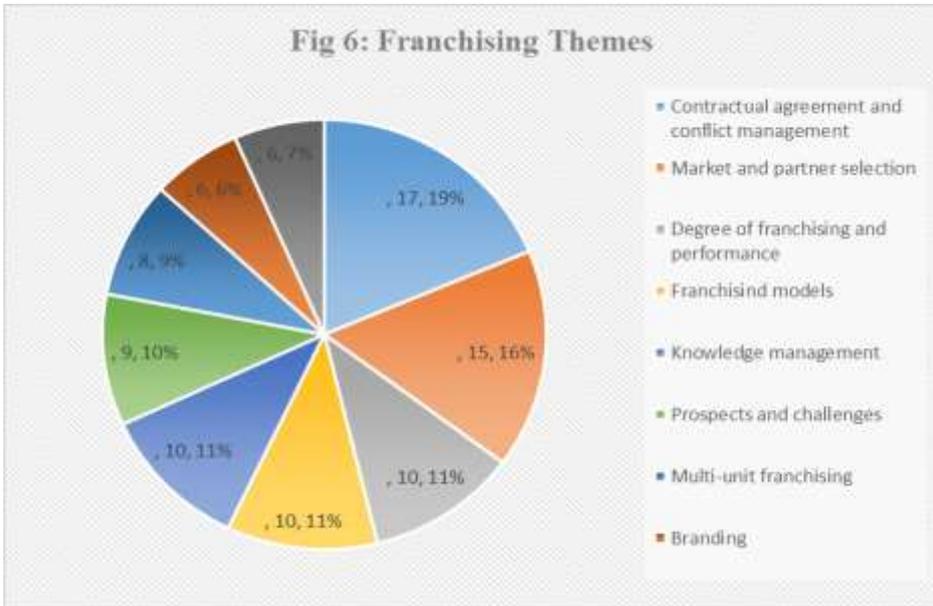
The papers that used this theory were of the opinion that franchisors and franchisees are bound to have conflict like non-compliance with terms of agreement (Lindblom & Tikkanen, 2010; Weaven et al., 2014). It focuses on both franchisor learning from their mistakes (Dobbs et al., 2012).

3.6 Franchising Themes

In this section, a total of nine franchising themes, which were the focus points of the researchers, were discovered and summarised in Figure 6 based on the 91 articles reviewed. Contractual agreement and conflict management was the theme with highest percentage (19%). Some of the authors

critically analysed the relationship between the decision making structure of franchise chains, and the number of conflicts which end up in early termination of businesses by franchisors (Lafontaine & Blair, 2009; Badawi, 2010; Weaven et al., 2012; Jong et al., 2011; Rohlfsing & Sturm, 2011; Tikko et al., 2012; Perrigot et al., 2015; López-Bayón, & López-Fernández, 2016; Herz et al., 2016; Grünhagen et.al, 2017). Some others proposed that franchisors provide a new franchisee a choice to buy territorial exclusivity (Nair et.al, 2009), and provided recommendations on franchisee expectations, confirmation, trust and relationship satisfaction in minimizing potential conflict within the franchising relationship (Frazer et.al, 2012; Weaven et.al, 2014).

The second most common theme dealt with market and partner selection (16%). The articles in this category discussed issues that determine how and why particular markets and partners are selected (Combs et al., 2009; De Castro et al., 2009; Doherty, 2009; Anwar, 2011; Perrigot et al., 2012; Forte & Carvalho, 2013; Weaven et al., 2014; Moon et al., 2017) and how a franchisor's characteristics and partnering strategies impact the adoption of franchising as a business model (Michael 2009; Kacker & Perrigot, 2016). They also explored how certain market conditions may drive international diffusion of franchising into emerging markets (Baena, 2012; Forte & Carvalho, 2013).



The next set of articles explored the degree of franchising and performance (11%); franchising models (11%) and knowledge management (11%). The articles reviewed in degree of franchising and performance theme examined the relationship between franchising and firm value as well as the connection between degree of franchising and firms' accounting performance (Koh et.al, 2009; Madanoglu et al., 2011; Meiseberg, & Ehrmann, 2012) by investigating the consequence of franchising on the financial performance of franchises (Hsu & Jang, 2009) concluding that a franchisee should have entrepreneurial orientation for improvement in performance (Lee et.al, 2015; Calderon-Monge et al., 2016; Sanny et.al, 2017).

The articles that explored franchising models advanced different theories and models applicable to franchising with a view of testing their efficacy (Gámez-González et al., 2010; Mumdziev &

Windsperger, 2013; Alon et.al, 2017; Krzeminska & Zeyen, 2017), while the articles that discussed knowledge management in franchising explained how hidden knowledge held by franchisor is converted to clearly stated knowledge (Lindblom & Tikkanen, 2010; Gorovaia & Windsperger, 2010; Windsperger & Gorovaia, 2011; Ioanna & Maria, 2013; Weaven et al., 2014) and identified barriers to the transfer of knowledge in franchise environments (Cumberland & Githens, 2012; Paswan et.al, 2014; Weaven et.al, 2014).

Papers discussing the prospects and challenges of franchising covered another 10% of the articles reviewed in this study. These papers examined the significance of franchising, as well as attitudes towards its contributions to business success among SMEs (Sadi & Henderson, 2011) while also highlighting factors that contribute to the success of franchising (Flint-Hartle & Bruin, 2011). They further examined

the role of franchising in the macro-economy of developing nations (Micheal, 2014) and identified human capital requirement as a primary barrier to franchising and the perceptual barrier among key decision makers (Murray & Smyth, 2011).

The theme, multi-unit franchising, which is defined “as an arrangement where a franchisee operates two or more outlets at multiple geographical locations in the same franchise system” (Hussain and Windsperger, 2013, p. 170), covered only 9% of the papers explored. The articles in this category investigated the real options that inspire multi-unit franchise strategies (Koh et al., 2009; Roh & Yoon, 2009; Jindal, 2011; Gauzente & Dumoulin, 2012; Hussain et al., 2012; Perryman & Combs, 2012; Park & Jang, 2012; Griessmair et al., 2014; Baldi, 2016; Ohinok, 2016) and how the franchisor could choose multi-unit systems to obtain higher innovation capabilities (Hussain et al., 2017). They also examined the essentials of franchising on franchise system performance (Bodey et al., 2013).

Branding (6%) and networking (7%) in franchising were the last two themes of focus in this study. The papers that focused on branding sought to explore how brand relationship can be leveraged between the franchisor and franchisee (Nyadzayo et al., 2011; Badrinarayanan, et al., 2016). They outlined the ways in which branding and franchising politics intersect (Marsh & Fawcett, 2011) as well as how franchise brand behaviour influences decisions by potential franchisees. On the other hand, the articles that focused on networking in franchising discussed general issues involved in retail franchise growth considering the role of a franchisor as a

capital provider (Nisar, 2011), and they explained the structure of decision rights in franchising networks (Mumdžiev & Windsperger, 2011), examining the early adoption and use of social media network in franchising (Perrigot, et al., 2012; Ater & Rigbi, 2015).

4. Discussion of Results

As seen in figure 1, the peaks in 2011 and 2012 are quite conspicuous against the background of the other 8 years; thus it became important that the reason for the sudden upsurge be discussed. Upon deep scrutiny, it was discovered that the Great Depression of the U.S. (the franchise giant) between 2007 and 2009, as well as its slow but steady recovery in subsequent years might have had a lot to do with the franchising research trends.

It was found that franchising did not really catch the attention of researchers in both 2009 and 2010 as both years saw only 9 and 7 franchising publications respectively. In 2011, there was an upsurge to 21 papers, implying some sort of increased interest of researchers in the field. The following year saw a slight drop to 17 papers; however, that negligible drop did nothing to prepare the authors of this study for the rude shock of the decline in franchising publications in the subsequent years. For the next three years, 2013-2015, only 6 papers were published each year. 2016 was only slightly better as publications increased to 8 articles followed by 10 articles in 2017. Probably with respect to the fact that the reviewed papers were collated in January 2018, only 1 paper was recorded published.

The drastic drop in franchises and other forms of businesses between 2008 and 2009, as well as the very slow pick up in

2010 might have been responsible for the seeming lack of serious interest in franchising research. Therefore it is not so surprising that as soon as the effects of the recession began to ease up, the recovery signs might have caught the attention of researchers such that franchising publications increased between 2011 and 2012.

The U.S. experienced huge loss of jobs to the tune of 744,000 jobs per month between November 2008 and April 2009 and credit market for startup loans was almost non-existent with the severe financial crises that plagued the economy. Consequently, franchising was sent to the bottom half of many entrepreneurs' possibility list (Elgin, 2018). However between 2011 and 2016, about 200,000 jobs were recovered per month ("Civilian employment level", 2018). Also as at December 2010, Small Business Administration had begun to back some small businesses loans and conventional loans had started being approved by local and regional banks, putting franchise ownership back up on the list of possibility. In addition, corrections in the commercial real estate market as well as increasing vacancy rates expanded the number of attractive real estate choices available to franchisees. Furthermore, many companies were expanding their financial information on their Franchise Disclosure Documents, a positive development for the franchise market (Elgin, 2018).

Looking at the various franchising themes identified above, it is quite obvious that the issue of conflict management between the franchisor and the franchisee had been addressed and recommendations were given. While market and partner selection considers how firms choose franchise markets and

partners and provides insights into the international franchising by examining the selection process holistically.

5. Recommendations

Despite the economic recession that the 2008-2009 caused and the obvious pointers studies revealed, publications in the field of franchising are still low. It is therefore recommended that more research be conducted in the field, as the importance of franchising to economies and vice versa is glaring.

In view of the fact that interview, which involves collection of data directly from the persons involved in the use of franchising as a start-up business model, was the least commonly used research method in the papers reviewed, it is recommended that this method be adopted by future researchers in the field of franchising, as it ensures that they get first-hand information from the stakeholders involved.

More so from Fig 4, the disparity in the percentages of empirical vs conceptual studies shows the direction in which future researchers should give attention by focusing on conceptual research for a better understanding of the deeper philosophical issues involved in franchising.

Both branding and networking themes, were the least represented among the 91 articles reviewed in this study, therefore, it is recommended that future researchers, explore these area of franchising. For the networking theme future studies should examine franchise specific capital providers in a view to identifying the key stakeholders. Also, social media adoption in franchising opens up new paradigm of franchising. As such, the role of social media in franchising should be examined. Similarly, future researchers should explore various dimensions that may

influence branding as well as identify factors that can affect brand relationships on brand equity.

6. Conclusion

In this study, the 91 peer-reviewed journal articles on franchising articles were examined based on five major classifications, namely, the time distribution of the articles, geographical distribution of the articles, research methodologies, article type, theories adopted and themes discovered. The results of the review were discussed and directions for further research were given. Though a good number of franchising articles have been carried out, it is quite worthy to improve on what has been done for more conceptual research in order to have a sound theoretical basis on franchising issues as it has a great impact in developing the economies of a country, especially in developing countries that are yet to take advantage of growing businesses with proven track record.

The study suggested that some of the limitations pointed out in this study, should be researched upon by addressing the identified gaps possibly by extending the use of a title search in more databases to enrich the methodology adopted in this study. Though, the databases consist of high quality, peer-reviewed journal articles,

they do not contain all peer-reviewed franchising articles. As a result, future systematic review can increase the scope of databases to gain further insight in franchising research. Furthermore, the scholarly articles reviewed in this study were those published during a period of ten years. Consequently, future researchers should expand the number of years for wider coverage.

The papers reviewed in this study, made use of only journal articles with the exclusion of book chapters and conference proceedings which is in line with the SQAT methodology adopted. Therefore, future researcher should include book chapters and conference proceedings as they are also reputable reference materials.

Another limitation of this study is that a title word search was used rather than a key word search which provides a more detailed search of articles on franchising. In spite of this, making use of a key word search would have produced a significant number of papers for the review.

Nevertheless, this study is significant as it illuminates areas for further research which should be addressed in order to bridge the gaps identified so far.

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