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Assessing the Relationship between Technopreneurship Education and Business Intention among Undergraduate Students in Kwara State, Nigeria: A Partial Least Square Approach (PLS-SEM)

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Abstract

It is often said that the importance of technology in entrepreneurship cannot be underestimated. In view of the foregoing, this study assessed the link between technopreneurship education and business intention. The population of the study consists of undergraduate students in tertiary institutions in Kwara State. Two sampling techniques, namely, stratified and multi-stage sampling techniques were used to select 367 students. Instrument titled "Technopreneurship Education and Business Intention Questionnaire (TEBIQ)" were adapted to collect relevant data for the study. Both Statistical Packages for Social Sciences (SPSS) and Partial Least Square (PLS) software were used to analyze the data collected. Specifically, SPSS was used for data screening while PLS was adopted to gauge the association between independent and dependent variables of the study. Results show that entrepreneurship courses positively influenced students on business intention while the use of online material positively influenced students' intention to start the business. Also, the findings showed that the use of social media by students positively influenced their decision on business intention. The study recommends that adequate facilities should be provided by the stakeholders so that technopreneurship education can be advanced in higher institutions.

Keywords: Technopreneurship Education, Business Intention, PLS-SEM, University System

JEL Classification: O1, O2, O3, O4, O5

Paper Classification: Research Paper

Introduction

Due to advancement in technology, people now live in the virtual world of the Information and Communication Technology (ICT) using it comprehensively in every walk of life. It helps in such a way that the amalgamation of communication technology and information technology can

help people in all their endeavors (Irene, 2019; Nurdiyanto, 2018; Olokundun, Hezekiah, Stephen & Fred; 2014)). Though, entrepreneurial action is hinged on the amalgamation of some factors of production which include capital, land and labour to yield goods and entrepreneurs combine other means to produce a successful business job (Musa, Azmi, Mohamad, Shahbodin & Fam, 2017; Oakey, 2003; Selvarany & Venusamy, 2015).

The conception and progress of technopreneurship is subject to various issues. According to Okorie, Kwa, Olusunle, Akinyanmi and Momoh (2014), the method of organizational creativity is a procedure of mainstreaming innovation in solving multiple complications and implementing the solutions to satiate the global market. Also, it places emphasis on mixing technology with entrepreneurship. Most technopreneurs venture into the businesses that are technology grounded because they make use of advanced technology to come up with ground-breaking products through the act of commercialization. Potentially, these technopreneurs are armed with technical skills that are needed to flourish business. Continually, they go through an organic process of endless improvement and try to redefine the vibrant digital economy. The term technopreneurs can, therefore be discussed as technology-based entrepreneurs who mix the factors of production and their entrepreneurial skills with technology expertise to set up viable business opportunities. Technopreneurship is, by large, entrepreneurship. The difference is that, technopreneurship is involved in providing an innovative hi-tech product in an advanced way to supply its product (Aldrich & Cliff, 2003; Tung, 2011).

In Asia, numerous creativities had been initiated by governments to improve the growth of entrepreneurs in their countries. For example, Singapore has used technopreneurship as a social initiative that denotes a vital shift in directions by providing favorable conditions (such as robust education system, internet access and infrastructure) to help blossom technopreneurship in their country (Foo & Foo, 2000). Likewise, Malaysian government has shown significant progress in helping technopreneurs develop innovative ideas and increase their knowledge (Yunos, 2002). Also, other countries that have adopted technology to nurture new business include India, Indonesia and Brazil. They have created sound technopreneurs and brought positive impact to the country's improvement as a whole (Burnett, 2000; Hidayat, Tamin, Herawati, Khairul & Syahmaidi, 2019; Lalkaka, 2002).

Report released by Brookings Institution in June 2018 based on the World Poverty Clock, Nigeria was declared the poverty capital of the world. It was revealed that the country has 87 million "extremely poor" people, indicating that it has overtaken India, which previously occupied the top position. According to World Bank projections, India has now reduced its population of the extremely poor to 73 million through technology and innovations. With the number of Nigerians falling to extreme poverty growing by six people every minute, it is said that the number is estimated to have hit 91.6 million, in view of the latest figures released in February 2019. In support of this development, National Bureau of Statistics (NBS) confirmed that Nigerian economy is not expanding at the rate that can create job opportunities for the employed, which they put at 21 million as of the second quarter of 2018 (Punch Newspaper, March 7, 2019).

In view of the recent events in Nigerian economy, small and medium entrepreneurship (SMEs) have fascinating potential growth like other developing economies are expected to constitute a sizable portion of Gross Domestic Product (GDP) in the future. Despite the fact that entrepreneurship begins at home and school, and is nurtured by instructors, there is need to stimulate an entrepreneurial spirit in students at all levels of education so as to reduce unemployment rate. In the same vein, since tactical direction and decision making procedures are getting difficult, thus there is need for policy that can transform students into creative persons

that will comprehend the prominence of technopreneurship in a changing global atmosphere (Alexander, 2013; Oyelaran-Oyeyinka, 2007; Tung , 2011).

Based on the foregoing, this study assessed the relationship between technopreneurship education and business intention among undergraduate students in Kwara State, Nigeria.

Literature Review

Research to date indicates that there are factors that add to the success of technopreneurs. To start with, Kamarudin and Sajilan (2013) investigated the barriers to success of animation technopreneurship in Malaysia. The study found that possible factors that contribute to the success of such a technopreneurship comprised access to financial resources, promotion and marketing; networks and collaboration; IP; content quality; technology; diversification of products; entrepreneurial skills; and business location. Rosly, Junid, Lajin and Rahim (2015) assessed the correlation between creativity and technopreneurship intention among students in the University Technology Mara, Malaysia. The outcome of the study indicates that creativity does have great impact on students' entrepreneurial intention. Selvarany and Venusamy (2015) in their study, investigated the relationship between innovation and students' business intent in India. The research adopted both survey and interview with testable hypotheses. The findings revealed that SMEs in India are technologically driven, which enabled technopreneurship to be growing in India. In the same vein, Mursityo, Astuti and Suharsono (2017) examined the nexus between student use of technology and business intentions in Brawijaya University, Indonesia. Their findings confirmed the prominence of desirability and feasibility of the relationship between inventiveness and intentions.

Moreover, study investigated by Colombo and Delmastro (2002) indicated that Italy has succeeded in attracting businesspersons with human capital and that entrepreneurs who are knowledgeable in evolution programs, achieved better based on adoption of advanced technology. The study concluded that Italy is effective in nurturing the development of new technology-based industries. Likewise, in Israel, which is an innovation-based country, is shaped through the connection between incubators and allied research organizations. This connection has produced synergy towards the achievement of entrepreneurial activity in the country (Rothschild & Darr, 2003). Suzuki, Kim and Bae (2002) worked on entrepreneurship in Japan and Silicon Valley. Their study established that Japanese government has adopted advanced technology in developing their businesses and those entrepreneurs have four different unique dimensions, which include risk and obstacles, infrastructures, growth factor and motivation.

In theory, social network and human capital aspect of resource-based theory of entrepreneurship offers a better explanation on how entrepreneurship can be embraced (Clausen, 2006; Shane & Eckhardt, 2003). First, the proponents of social network theory assert that entrepreneurs are fixed with a social network structure that builds a noteworthy proportion of their opening structure. It suggests that one may have the ability wherewithal to identify that a given entrepreneurial break exist but may not have the social contacts to transform the chance into a commercial activity. Therefore, access to a social link helps to overcome this difficulty. Empirically, studies have confirmed that stronger social connections to resource providers ease the acquirement of resources and augment the possibility of opportunity utilization (Aldrich & Cliff, 2003; Kim, Aldrich & Keister, 2003). Second, the proponents of human capital entrepreneurship theory postulate that entrepreneurship is hinged on two aspects (education and experience). Precisely, it is believed that the knowledge acquired via experience and education indicates a resource that is heterogeneously distributed across individuals and in effect necessary

to gain a better understanding of changes in business identification and utilization (Anderson & Miller, 2003; Davidson & Honing, 2003; Kim, Aldrich & Keister, 2003; Korunka, Frank, Lueger & Mugler, 2003; Shane & Venkataraman, 2000).

Research Objectives

1. To examine students' perceived level of awareness on technopreneurship education.
2. To assess the relationship between technopreneurship education and business intention.

Research Hypotheses

1. There is no significant relationship between students' entrepreneurship course and business intention.
2. There is no significant relationship between students' use of online materials and business intention.
3. There is no significant relationship between students' use of social media and business intention.

Materials

Population/ Sampling Techniques

The study adopted the quantitative type of design so that comprehensive information on the impact of technopreneurship education can be obtained (Creswell, 2013). The population of the study consists of 10,352 (200 Level and 300 Level) undergraduate students of selected higher institutions in Kwara State, Nigeria. However, in order to get a sample size, we used Krejcie and Morgan's (1970) table was used to get the necessary sample 367 that is required as respondents needed based on the nature of the study. Furthermore, we adopted three sampling techniques which include stratified; the quota and convenience sampling techniques were employed to distribute the 367 respondents to two selected institutions (Al-Hikmah University and Kwara State University) in Kwara State. Specifically, quota sampling technique was adopted for three reasons: First, our inability to have access to the sampling frame, thus quota sampling technique was considered essential and suitable for the study (Cooper & Schindler, 2009). Second, with respect to the population of 10,352 students, the use of quota technique helps to minimize sampling error as suggested by scholars in research (Cooper & Schindler, 2009; Creswell, 2013). Also, quota technique sampling confirms homogeneity within a group as well as heterogeneous across groups (Hair, Money, Samouel & Page, 2007).

Instrument

In this study, technopreneurship education is the process of providing students with the ideas and skills to recognize prospects that others have not noticed using technology to achieve it. It can also be explained as the process that results in creativity, innovation and development (Alexander, 2013; Foo & Foo, 2000). Technopreneurship education is the independent variable and has three dimensions, namely entrepreneurship course, online materials and social media while the business intention is the dependent variable. Entrepreneurship course in this study means those skills and knowledge which students had gotten during their entrepreneurship class in school, which would be useful to initiate their own business ideas while online material refers to various materials on entrepreneurship education that students had read and which would be useful to start their own business. Also, social media in this context entails students' knowledge obtained through social media (e.g., Facebook, twitter, LinkedIn, Skype, YouTube, Instagram, WhatsApp etc.) on how it

can be used to start the business. Business intention encompasses students' readiness to kick start or initiate business via the use of technology (Alexander, 2013).

An instrument titled "Technopreneurship Education and Business Intention Questionnaire (TEBIQ)" was adapted from the studies conducted by Alexander (2013), Olokundun, Hezekiah, Stephen and Fred (2014) and Tung (2011) to collect relevant data for the study. To ensure the validity of the instrument, it was given to experts in the field of entrepreneurship for their observations and suggestions. All the observations and suggestions were corrected with a view to ensuring that all the items contained in the instrument measure what they supposed to measure (Creswell, 2013). Also, in order to ensure reliability of the instrument, we conducted a pilot study using 50 students of a higher institution that is outside the institutions that were used for the main study. The results of the pilot study indicate a high Cronbach alpha, suggesting adequate reliability of the independent variables (entrepreneurship course: .847; online material: .891; social media: .968) and dependent variable (business intention: .942).

Data Collection/Analysis Procedure

Before collecting data, consent form to get students' consent on the need to participate in the study was sought. In order to ensure a hitch-free data collection, we employed two research assistants which made the collection to be easier. After that, questionnaires were administered to the respondents of the selected institutions in Kwara State using a cross-sectional approach (Creswell, 2013). Both SPSS and PLS software were employed to analyze the data collected (Hair et al., 2014; Pallant, 2010). Specifically, we used SPSS to perform screening and descriptive analysis while PLS was used to assess the relationship between the three dimensions of technopreneurship education and business intention.

Results

Response Rate

In order to ensure a high response rate for the study, number of questionnaires were increased to 400 instead of 367 sample size needed to cater to the shortage questionnaire when administering it to students. Out of the 400 questionnaires, 376 were returned, 25 accounts for unusable questionnaires while 351 accounts for usable questionnaires that were used to analyze data. To determine the response rate, we divided the total number of returned questionnaires from the distributed questionnaires and multiplied it by 100 (376/400x100=94%). Therefore, the response of the study is 94%, indicating a high response rate (Creswell, 2013). Table 1 displayed below shows the analysis of the response rate.

Table 1: Response Rate

Distributed Questionnaire	400
Returned Questionnaire	376
Unusable Questionnaire	25
Usable Questionnaire	351
Response Rate	94%

Analysis on Students' Perceived Level of Technopreneurship Education

(a) Students' Perceived Level of Awareness on Entrepreneurship Course

Sr. No.	Particulars	Mar-10	Mar-17	Mar-18	Y-o-Y growth in per cent (2016-17)	Y-o-Y growth in per cent (2017-18)
1	Banking Outlets in Rural location - Branches	33,378	50,860	50,805	-1.9	-0.1
2	Banking Outlets in Rural location - Branchless mode	34,316	547,233	518,742	2.4	-5.2
3	Banking outlets in Rural locations - Total	67,694	598,093	569,547	2.0	-4.8
4	Urban locations covered through BCs	447	102,865	142,959	0.3	39.0
5	BSBDA - Through branches (No. in Million)	60	254	247	6.7	-2.8
6	BSBDA - Through branches (Amt. in Billion)	44	691	731	45.8	5.8
7	BSBDA - Through BCs (No. in Million)	13	280	289	21.2	3.2
8	BSBDA - Through BCs (Amt. in Billion)	11	285	391	73.8	37.2
9	BSBDA - Total (No. in Million)	74	533	536	13.6	0.6
10	BSBDA - Total (Amt. in Billion)	55	977	1,121	53.1	14.7
11	OD facility availed in BSBDAs (No. in million)	0	9	6	0.0	-33.3
12	OD facility availed in BSBDAs (Amt. in Billion)	0	17	4	-41.4	-76.5
13	KCC - Total (No. in Million)	24	46	46	-2.1	0.0
14	KCC - Total (Amt. in Billion)	1,240	5,805	6,096	13.1	5.0
15	GCC - Total (No. in Million)	1	13	12	18.2	-7.7
16	GCC - Total (Amt. in Billion)	35	2,117	1,498	41.8	-29.2
17	ICT-A/Cs-BC-Total number of transactions (in million)	27	1,159	1,489	40.1	28.5
18	ICT-A/Cs-BC-Total number of transactions (in billion)	7	2,652	4,292	57.2	61.8

Note: Sr. No. 1-16 consist of cumulative data from the inception. Sr. No. 17-18 consist of data from the start of corresponding financial year.
Source: FIP returns submitted by banks.

Figure 1: Students' perceived level of awareness on entrepreneurship course

The figure displayed above shows the level of students' awareness on entrepreneurship courses in the school. Specifically, the analysis indicates that 308 (87.7%) respondents were aware of entrepreneurship course, 34 (9.7%) respondents were not aware of the entrepreneurship course while 9 (2.6%) respondents were neutral. In view of the foregoing, therefore it suggests that many of the respondents were aware of the entrepreneurship course.

(b) Students' Perceived Level of Awareness on Online Material

Sr. No.	Particulars	Total	
		Physical (No. in lakh)	Financial (₹ in crore)
1	**Total number of SHGs saving linked with banks**	87.44	19592.12
(i)	Out of total SHGs - exclusive Women SHGs	73.90	17497.86
(ii)	Out of total SHGs- under NRLM/SGSY	41.84	10434.03
(iii)	Out of total SHGs -under NULM/SJSRY	4.25	1350.80
2	**Total number of SHGs credit linked during the year 2017-18**	22.61	47185.88
(i)	Out of total SHGs - exclusive Women SHGs	20.75	44558.74
(ii)	Out of total SHGs – under NRLM/SGSY	12.71	25055.18
(iii)	Out of total SHGs – under NULM/SJSRY	1.06	2424.07
3	**Total number of SHGs having loans outstanding as on**	50.20	75598.45

Figure 2: Students' perceived level of awareness on online material

The above chart shows the students' perceived level on online material. The descriptive analysis revealed 303 (86.6%) respondents were aware of online material that has to do with entrepreneurship, 41 (11.7%) respondents were not aware of online material while 7 (1.7%) respondents were neutral. Thus, it signifies that majority of the respondents were aware of online material.

(c) Students' Perceived Level of Awareness on Social Media

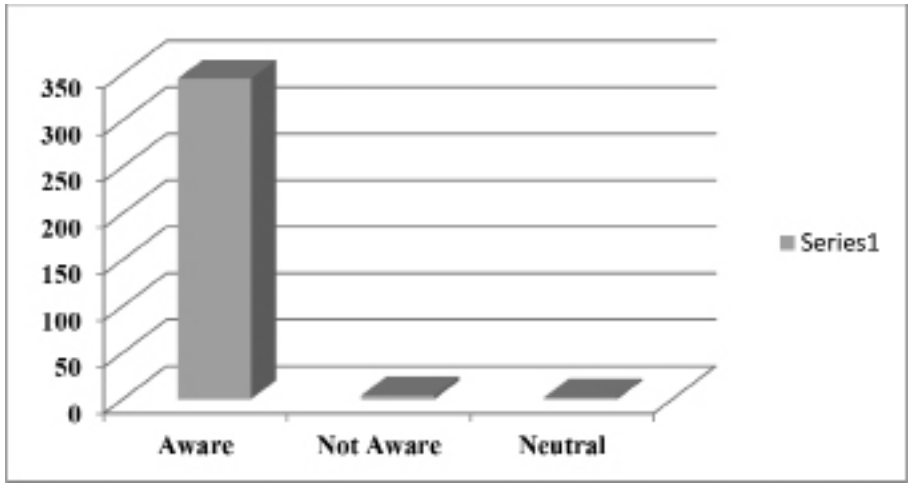

Figure 3: Students' perceived level of awareness on social media

The above figure indicates students' perceived level of awareness on social media. Precisely, the analysis shows that 345 (98.3 %%) respondents were aware of social media, 4 (1.2%) respondents were not aware of social media while 2 (0.5%) respondents were neutral. In view of the foregoing, therefore it suggests that many of the respondents were aware of entrepreneurship course.

Analysis of PLS-SEM Results

This section explains the estimated path models of the study using PLS-SEM (Henseler, Ringle & Sinkovics, 2009). According to Hair, Hult, Ringle and Sarstedt (2014), there are two ways in which path models can be processed, they are: measurement model assessment, and structural model assessment.

Measurement Model Assessment

Hair, Ringle and Sarstedt (2012) described measurement model as the model that examined the relationship between variables and their measures. Measurement model assessment thus encompasses the testing of individual item reliability, internal consistency reliability as well as convergent and discriminant validity. Figure 4 below shows the measurement model estimate output through the use of PLS-SEM.

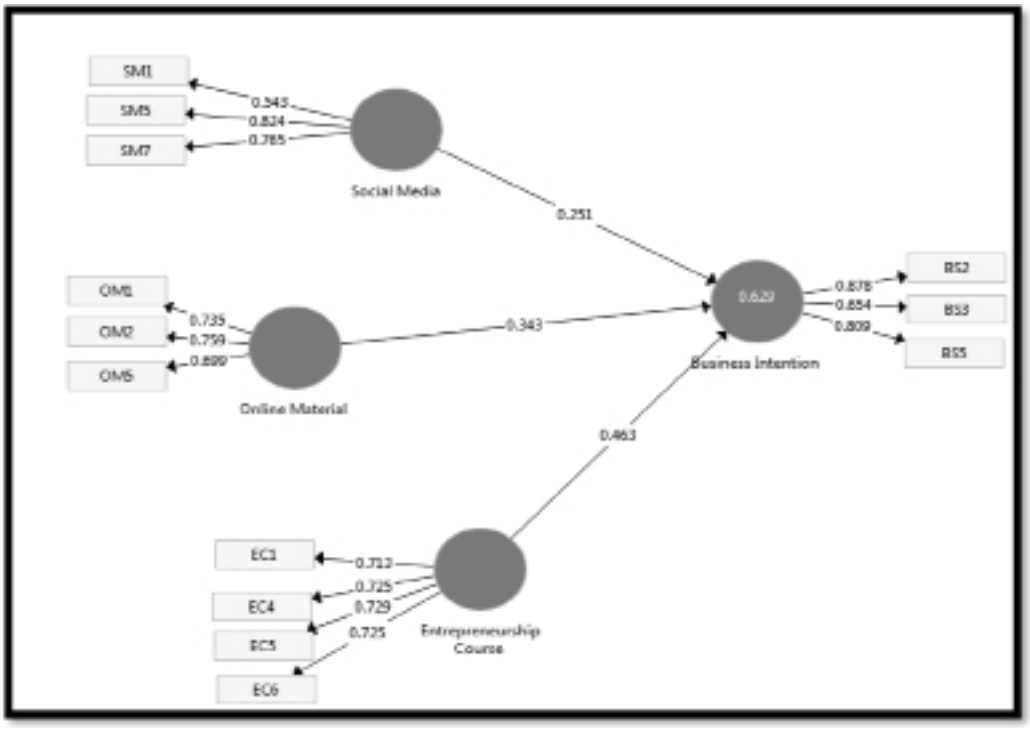

Figure 4: Measurement Model of the Study

Assessment of Individual Item and Consistency Reliability of the Model

In order to ensure good reliability of individual item, we examined the loadings of the construct's measure as suggested by Hair et al. (2012) and Henseler, Ringle and Sinkovics (2009). Inconsistent with the benchmark (minimum of .40) for item retention in social science research, all the items in the measurement model of the current study loaded more than the minimum benchmark of .40. Thus, all the items in the model loaded between 0.543 (minimum) and 0.878 (maximum) as contained in Figure 4. Meanwhile, research has indicated that the coefficients of Cronbach's alpha (e.g., Cronbach's alpha is usually obtained under the notion of parallelity) and composite reliability are regarded as the most predictable methods of determining the internal consistency reliability of the adopted or adapted instrument in social research (McCrae, Kurtz, Yamagata & Terracciano, 2011). To this end, we adopted composite reliability and there is one cogent reason for the selection of composite reliability. Cronbach's alpha underestimates the true reliability of the scale and that the underestimation is well known when the correlation is lower (Hair et al., 2012; Henseler et al., 2009). Table 2 displays the composite reliability of the model.

Table 2: Composite Reliability and Average Variance Extracted (AVE)

Construct	Composite Reliability	AVE
Business Intention	0.827	0.617
Entrepreneurship Course	0.814	0.523
Online Material	0.775	0.535
Social Media	0.759	0.520

Convergent and Discriminant Validity

According to scholars in the field of social science research, convergent validity can be described as a sub-type of construct validity. It is a test intended to measure a particular construct. The convergent validity takes into consideration two things that are supposed to be measuring the same construct and indicates that they are actually related (Hair et al., 2012). However, we measured convergent validity by following Fornell and Larcker's (1981) method for observing the average variance extracted of each construct. As stipulated by Fornell and Lacker (1981), the AVE above 0.5 is seen as an indication of adequate convergent validity. As displayed in Table 2, the AVEs of business intention and entrepreneurship courses loaded at 0.617 and 0.523, while that of online material and social media loaded at 0.533 and 0.520 respectively, indicating that the variance in the indicators was explained by the common factor. Furthermore, discriminant validity, which is also known as divergent validity, can be explained as the two measures that are not supposed to be related are truly, unrelated (Chin, 2010). According to Chin (2010), a value of less than 0.75 indicates discriminant validity exists between the two scales. Table 3 shows the discriminant validity of the constructs of the study (Business Intention: 0786; Entrepreneurship Course 0.723; Online Material: 0.731; Social Media 0.72), demonstrating successful scrutiny of discriminant validity in this study. Table 3 shows the discriminant validity based on constructs.

Table 3: Discriminant Validity

	Business Intention	Entrepreneurship Course	Online Material	Social Media
Business Intention	0.786			
Entrepreneurship Course	0.671	0.723		
Online Material	0.572	0.363	0.731	
Social Media	0.488	0.331	0.243	0.721

**Note: All the items in bold color indicate adequate discriminant validity*

Table 4: Cross loadings of the Constructs

	Business Intention	Entrepreneurship Course	Online Material	Social Media
BS2	0.878	0.710	0.258	0.432
BS3	0.654	0.331	0.465	0.353
BS5	0.809	0.505	0.632	0.366
EC1	0.356	0.713	0.268	0.302
EC4	0.627	0.725	0.167	0.379
EC5	0.398	0.729	0.096	0.171
EC6	0.470	0.725	0.529	0.066
OM1	0.405	0.282	0.735	0.191
OM2	0.483	0.384	0.759	0.173
OM5	0.350	0.087	0.699	0.170
SM1	0.303	0.349	0.334	0.543
SM5	0.283	0.120	0.112	0.824
SM7	0.425	0.235	0.100	0.765

Structural Model Assessment

After gauging the psychometric properties of the measurement model, the next stage is to measure the properties contained in the structural model of the study so that the model significance can be obtained (Henseler et al., 2009). However, before determining the structural model, there is need for adequate bootstrapping of the model. Thus, bootstrapping was performed using 1000 values to estimate the sample of 306 cases with the use of PLS. The result of the bootstrapping is given in Figure 5 and Table 5.

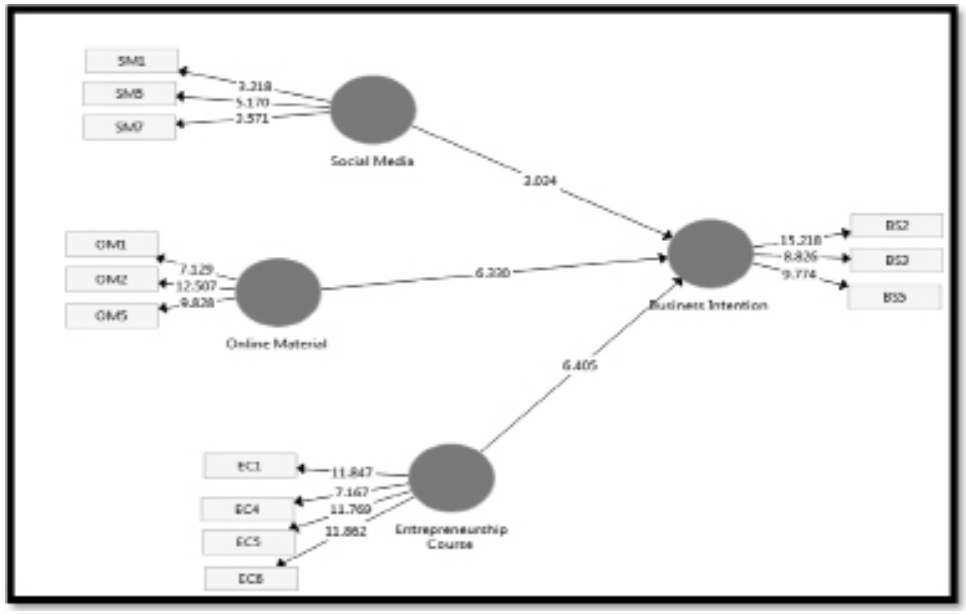

Figure 5: Structural Model

Table 5: Table of Significance

	Mean	Standard Deviation	T Statistics	P Values
H1: Entrepreneurship Course >Business Intention	0.439	0.072	6.405	0.000
H2: Online Material>Business Intention	0.345	0.054	6.330	0.000
H3: Social Media>Business Intention	0.264	0.083	3.034	0.002

Discussion

In the beginning, two research objectives were formulated to guide the study. In this section, responses were provided to help achieve the stated objectives.

To start with, the first research objective is to know the students' perceived level of awareness on technopreneurship education. Based on descriptive analysis of the study, finding revealed that majority of students are aware of the three dimensions of technopreneurship education. First, there is high awareness on students' (87.7%) perceived level of entrepreneurship course. It implies that students are aware of entrepreneurship course that were introduced in their institutions. Second, finding revealed that most of the students (86.6%) are aware of online material on technopreneurship. It means that students explore various online materials that discussed business opportunities. Third, regarding the students' perceived level of social media, finding

shows that majority of the students (98.3 %%) are aware of how social media (e.g., Facebook, Twitter, LinkedIn, WhatsApp, skype, YouTube, Gmail, Instagram, etc.) can be used for various types of business. The foregoing findings correlate with the study of Rosly et al., (2015) who established that creativity impact students' business intention and that it should be considered as part of the general analysis in ascertaining students' entrepreneurial skills.

The second research objective is to examine the connection between technopreneurship education and business intention. In order to achieve the second research objective, three hypotheses were formulated. The first hypothesis postulates that there was no relationship between students' entrepreneurship course and business intention. As displayed in Table 5, the PLS path model results indicate that students' involvement in entrepreneurship course have impact on business intention. The current finding is in congruent with resource based -human capital theory of entrepreneurship which proposes that entrepreneurship can be understood from two underlying perspectives, namely education and experience (Clausen, 2006; Shane & Eckhardt, 2003) because it is anticipated that the knowledge added from both experiences and formal education connotes a resource that is heterogeneously distributed across qualities and indeed central to understanding transformations in business identification (Anderson & Miller, 2003). Also, the finding is synonymous with the study of Kim, Aldrich, Keister (2003), Davidson and Honing (2003) who established that human capital factors are significantly related to entrepreneurial skills while the study of Korunka et al., (2003) found a link between education and entrepreneurial achievement.

The second hypothesis postulates that there was no connection between students' use of online material and business intention. PLS path model results (see Table 5) show that students' use of online material influenced their business intention. This is in agreement with the study of Mursityo, Astuti and Suharsono (2017) who examined the relationship between ICT and students' participation in entrepreneurship and concluded that there is connection between creativity and technopreneurship intentions. The finding is also in consonance with the studies of Kamarudin and Sajilan (2013) and Selvarany and Venusamy (2015) who concluded that the use of technology enhances people's involvement in technopreneurship. The theory of human capacity can also be used to explain the interrelationship between entrepreneurship education and business intention in higher institutions.

The third hypothesis postulates that there was no association between students' use of social media and business intention. As displayed in Table 4, the PLS path model results (see Table 5) indicate relationship between students' use of social media and business intention. Precisely, it implies that students who use social media (e.g. Facebook, WhatsApp, twitter, YouTube etc.) increase their interest in business. The finding is in tandem with the study conducted by Suzuki et al. (2002) who established that two countries have adopted advanced technology in growing their businesses. The study concluded that the two countries' entrepreneurs have four different distinctive dimensions, which comprise risk and obstacles, infrastructures, growth factor and motivation. In the same vein, Colombo and Delmastro (2002) found that businessperson with better human capital performed better in terms of adoption of technology. Rothschild and Darr (2003) established that the use of technology has produced synergy towards the achievement of entrepreneurial activity. The finding is also consistent with social network aspect of resources-based entrepreneurship theory. The proponents of social network theory suggest that entrepreneurs are connected with social network structure that forms a significant proportion of their opening. Additionally, the theory submits that people may have the ability to detect that a given entrepreneurial break occur, but the use of social contacts will enable him to convert it to business ideas (Clausen, 2006; Shane & Eckhardt, 2003).

Conclusion and Recommendations

Based on the findings of the study, it can be said that the two research objectives have been achieved. Thus, it can be concluded that a strong association between the three technopreneurship education dimensions (entrepreneurship course, online material and social media) and business intention among undergraduate students in Kwara State has been established. Also, this study makes noteworthy contribution to the body of knowledge via three angles (i.e., practical, theoretical and methodological).

From practical perspective, current findings have several implications for stakeholders in education. It will provide comprehensive and vital information to government, educational administrators, private companies and philanthropists on how to promote technopreneurship education. Specifically, it will enable the government to provide adequate infrastructure in higher institutions so that it can stimulate students to become technopreneurs. Also, the school administrators should ensure that duration and intensity of entrepreneurship course in higher institutions is increased so as to achieve a maximum impact on students' intention to start business. They should also ensure that an extra course on technopreneurship education should be initiated, particularly in research-based institutions. Additionally, private companies, Non-Governmental Organizations (NGOs) and philanthropists should advance the course of technopreneurship in higher institutions by assisting them in providing ICT facilities that can be used to encourage students' business intention. It will also make them to be reinforced to fully understand the concept of risk taking and patience in technopreneurship.

From theoretical perspective, both social network and human capital development aspects of resources-based theory of entrepreneurship have been validated in this study. For instance, the PLS path model results indicate that online material and social media influenced business intention, extensive literature revealed that social network theory has stronger social connections to resource providers and this will surely expedite the attainment of resources and augment the possibility of opportunity utilization (Aldrich & Cliff, 2003; Kim, Aldrich & Keister, 2003). Also, since human capital entrepreneurship theory assumes that entrepreneurship is based on two factors (education and experience). Specifically, it is understood that the information attained via experience and education indicates a resource that is heterogeneously distributed across individuals and indeed central to understanding variances in business openings (Anderson & Miller, 2003; Kim, Aldrich & Keister, 2003; Korunka et al, 2003; Shane & Venkataraman, 2000) and since the current study found that students' use of online material and social media influenced their business intention, it means that our study has validated both social network and human capital development theories (Davidson & Honing, 2003).

From methodological perspective, our study contributed to the body of knowledge in three ways. First, we adapted instrument from the previous studies conducted by Olokundun, Hezekiah, Stephen and Fred (2014) and Tung (2011) to investigate the relationship between technopreneruship and business intention were adapted. Therefore, by removing some irrelevant items and have new relevant items inserted in the original instrument, it shows that the items have been purified to suit the objectives of the current study. Second, literature reviews indicates little studies on technopreneurship education in Nigeria, and since efforts are on to reduce the level of unemployment in Nigeria, therefore the focus of the present study on how technopreneurship influence students' business intention offers a substantial methodological contribution to the body of knowledge. Lastly, studies on technopreneurship education (e.g. Alexander, 2013; Olokundun, Hezekiah, Stephen & Fred, 2014; Tung, 2011) show that SPSS software is normally employed for data analysis. Thus, the present study employed more sophisticated software called PLS-SEM

(Partial Least Square) to gauge the psychometric properties of the study variables; this is to ensure comprehensive analysis of the data completed.

References

Aldrich, H., & Cliff, J. (2003). The pervasive effect of family on entrepreneurship: Toward a family embeddedness perspective. *Journal of Business Venturing, 18(5), 573–596.*

Alexander, H. (2013). Building technopreneurship for next generation: How the benefits of technoentrepreneurship education affect career intentions of college students. *Journal of Entrepreneurship, 3(1), 31-40.*

Anderson, A. R., & Miller, C. J. (2003). Class matters: Human and social capital in the entrepreneurial process. *The Journal of Socio-Economics*, *32*(1), 17-36.

Burnett, D., (2000). *The Supply of Entrepreneurship and Economic Development.* Retrieved from http://www4.ibm.com/software/developer/library/su-sing.html. April 3 2003.

Chin, W. (2010). How to write up and peport PLS analyses. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares* (pp. 655-690): Springer Berlin Heidelberg.

Colombo, M. G., & Delmastro, M. (2002). How effective are technology incubators? Evidence from Italy. *Research Policy*, *31*(7), *1103-1122.*

Cooper, D. R., & Schindler, P. S. (2009). *Business research methods* (10th ed.). New York: McGraw-Hill.

Creswell, J. W. (2013). *Essential skills for the qualitative researcher*. Sage Publications.

Davidson, P., & Honing, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing, 2(2), 12-23.*

Foo, C., & Foo, C, (2000). Socialization of Technopreneurism towards Symbiosis in Corporate Innovation and Technology Strategy. *Technovation, 20, 551 – 562.*

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research 18*, 39-50.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Thousand Oaks: Sage Publications.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2012). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice, 18*, 139-152.

Hair, J. F., Money, A. H., Samouel, P., & Page, M. (2007). *Research method for business*. West Sussex, England: John Wiley & Sons Ltd.

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least Squares path modeling in international marketing. In R. R. Sinkovics & P. N. Ghauri (Eds.), *Advances in International Marketing* (pp. 277-320). Bingley, Emerald.

Hidayat, H., Tamin, B. Y., Herawati, S., Khairul, K., & Syahmaidi, E. (2019). The contribution of technopreneurship scientific learning and learning readiness towards the entrepreneurship learning outcomes in higher vocational education. *Jurnal Pendidikan Vokasi*, *9*(1), 21-32.

Irene, B. N. (2019). Technopreneurship: A Discursive Analysis of the Impact of Technology on the Success of Women Entrepreneurs in South Africa. In Nasiru Taura, Bolat Elvira, Nnamdi Madiche (Eds.), Digital *Entrepreneurship in Sub-Saharan Africa* (pp. 147-173). Palgrave Macmillan, Cham.

Kamarudin & Sajilan (2013). Critical success factors of technopreneurship in the creative industries: A study of animation ventures. *Review of Integrative Business and Economics Research, 2*(1), 1-36.

Kim, P. H., Aldrich, H. E., & Keister, L. A. (2003). If I were rich? The impact of financial and human capital on becoming a nascent entrepreneur. Presented in *Annual Meeting of the American Sociological Association, Atlanta.*

Korunka, C., Frank, H., Lueger, M., & Mugler, J. (2003), "The entrepreneurial personality in the context of resources, environment, and the startup process-A configurational approach", *Entrepreneurship Theory and Policy, 28*(1), 23-42.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30, 607-610.*

Lalkaka, R., (2002). Technology business incubators to help build an innovation-based economy. *Journal of Change Management,* 3(2), 167 – 176.

McCrae, R. R., Kurtz, J. E., Yamagata, S., & Terracciano, A. (2011). Internal consistency, retest reliability, and their implications for personality scale 239 validity. *Personality & Social Psychology Review, 15*(1), 28-50.

Mursityo, Y.T., Astuti, E.S., & Suharsono, E.G. (2017). Technopreneurship intentions in faculty of computer science brawijaya university students. *Journal of Applied Management, 15*(2), 320-329.

Musa, H., Azmi, F. R., Mohamad, N., Shahbodin, F., & Fam, S. (2017). Creative industry learning and development towards craft product: Critical success factors of technopreneurship. *Proceedings of Mechanical Engineering Research Day*, 246-247.

Nurdiyanto, H. (2018). A work-based learning model with technopreneurship. *Global Journal of Engineering Education*, *20*(1), *75-78*.

Oakey, R. P., (2003). Technical entrepreneurship in high technology small firms: some observations on the implication for management. *Technovation*, *23* (8), *679 – 688*.

Okorie, N.N., Kwa, D.Y., Olusunle, S.O., Akinyanmi, O.O., & Momoh, I.M. (2014). Technopreneurship: An urgent need in the material world for sustainability in Nigeria. *European Scientific Journal, 10(30), 59-73.*

Olokundudu, M., Hezekiah, F., Stephen, I., & Fred, I. (2014). An assessment of the taught entrepreneurship program in Nigerian secondary schools. *Merit Research Journal of Education and Review, 2(11), 257-275.*

Oyelaran-Oyeyinka (2007), 'SME: Issues, Challenges and Prospects. FSS 2020 International Conference. Retrieved from:http://www.cenbank.org/fss/wed/SME_Issues,%20Challenges%20and%20Prospects_Oyeyinka%20Banji.pdf. Pp 2 – 37.

Pallant, J. (2010). *SPSS survival manual: A step by step guide to data analysis using* Parks, C. D. (2004). Group norms. In J. M. Burns, G. R. Goethals & G. J. Sorenson (Eds.), *Encyclopedia of Leadership* (pp. 627-630). Thousand Oaks, CA: Sage Publications.

Punch Newspaper (Thursday, March 7, 2019). Defusing Nigeria's Population Time Bomb.

Punch, K. F. (2005). *Introduction to Social Research - Quantitative & Qualitative Approaches*. London: Sage Publications.

Rosly, H.E., Junid, J., Lajin, N.F.M., & Rahim, H.L. (2015). The relationship of creativity and technopreneurship intention. *International Academic Research Journal of Social Science*, *1*(1), 8-15.

Rothschild, L., Darr, A. (2005). Technological incubators and the social construction of innovation networks: an Israeli case study. *Technovation, 25(1), 59–69.*

Selvarany, A. & Venusamy, K. (2015). A study of technopreneurship in small and medium industry. technopreneurship as a firm strategy: links to innovation, creation and performance. *International Journal of Management, 6*(1), 401-408.

Shane, S.A & Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research. *Academy of Management Review, 25(1), 217-226.*

Shane, S.A &Eckhardt, J.T. (2003). Opportunities and Entrepreneurship. *Journal of Management*, *29*(3),333-349.

Suzuki, K., Kim S.H., & Bae, Z.T., (2002). Entrepreneurship in Japan and Silicon Valley: A comparative study. *Technovation*, 22, 595 – 606.

Tung, L. C. (2011). The impact of entrepreneurship education on entrepreneurial intention of engineering students (Doctoral Thesis, City University of Hongkong).

Yunos, M. G., (2002). Building an Innovation-based Economy: The Malaysian Technology Business Incubator Experience. *Journal of Change Management,* 3(2), 177- 178.

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