

The Impact of Technopreneurship Education On Business Intention Among Undergraduate Students in Kwara State: Implication for Stakeholders

¹Lawal Azeez Tunbosun (PhD) & Yusuf Suleiman (PhD)²

¹Department of Business Administration

²Department of Educational Management and Counselling

Al-Hikmah University, Ilorin, Kwara State, Nigeria

E-mail: yusufsuleiman@alhikmah.edu.ng

ABSTRACT

Aside the entrepreneurship education programmes that have been initiated in Nigerian higher institutions in an attempt to reverse graduate unemployment development by providing required training in entrepreneurial skills, some students have embraced innovations to entrepreneurship so as to enable them to be self-reliant. In view of the foregoing, this study examined the impact of technopreneurship education on business intention. The population of the study consists of undergraduate students in tertiary institutions in Kwara State. Stratified and multi-stage random sampling techniques were used to select 367 respondents. Instrument titled “Technopreneurship Education and Business Intention Questionnaire (TEBIQ)” were adapted to collect relevant data for the study. Both Statistical Package for Social Sciences (SPSS) and Partial Least Square (PLS) Software were used for data analysis. Specifically, SPSS was used for data screening while PLS was used to assess the relationship between independent and dependent variables of the study. Findings of the study revealed that entrepreneurship course positively influenced students on business intention while the use of online material positively influenced students’ intention to start business. Also, finding showed that the use of social media by students positively influenced their decision on business intention. Based on the findings of the study, 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, Partial least Square (PLS Software)

iSTEAMS Proceedings Reference Format

Lawal Azeez Tunbosun & Yusuf Suleiman (2019): The Impact of Technopreneurship Education On Business Intention Among Undergraduate Students in Kwara State: Implication for Stakeholders. Proceedings of the 18th iSTEAMS Multidisciplinary Cross-Border Conference, University of Ghana, Legon, Accra, Ghana. 28th – 30th July, 2019. Pp 21-34. www.isteam.net - DOI Affix - <https://doi.org/10.22624/AIMS/iSTEAMS-2019/V18N1P3>

1. BACKGROUND TO THE STUDY

Universally, technological advancement proofs that people now live in the virtual world of the 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 (Alexander, 2013; Olokundun, Hezekiah, Stephen & Fred; 2014)). Though, entrepreneurial activity concerns with the combination of factors of production such as land, labour and capital to produce goods or services and entrepreneurs are the agents who combine the other resources with a mission to create a successful business venture. They are also the risk-bearer as the business venture has no guarantee of profit. It has been established that entrepreneurs possess the characteristics such as innovative and imaginative (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 process of organizational creativity is a process of mainstreaming innovation or continually finding important corporate problems, solving those problems, and, implementing the solutions to satisfy the global market which is referred to as *Technopreneurship*.

It lays emphasis on integrating technology with entrepreneurship. Technopreneurs are entrepreneurs who are into the core businesses involving technology based industries. They make use of technology to come up with innovative products through the process of commercialization. Potential technopreneurs must be equipped with both technical and business skills. Technopreneurs continually go through an organic process of constant improvement and always try to redefine our dynamic digital economy. The term technopreneurs can therefore be referred to the technical entrepreneurs or technology-based entrepreneurs who combine the factors of production and their entrepreneurial skills with technology to set up new business. Technopreneurship is, by a large part, still entrepreneurship. The difference is that technopreneurship is either involved in delivering an innovative hi-tech product (e.g. Zenox, Intel) or makes use of hi-tech in an innovative way to deliver its product to the consumer (e.g. Jumia, Konga, ebay, Olx), or both. So technopreneurship is not a product but a process of synthesis in engineering the future of a student or person and an organization. Technopreneurs are those into the core business involving technology-based industries. Still referring to the conclusion is that technopreneurs are entrepreneurs who engage both in IT and software-hardware products. Technopreneurs deal in IT-based products and services as their main business lines. They make use of technology to come out with new or innovative products through a process of commercialization (Aldrich & Cliff, 2003; Tung, 2011).

In ASEAN (Association of South East Asian Nations) block, numerous creativities have been started by various governments to enhance the development of entrepreneurs. For instance, Singapore has cultivated technopreneurship as a social drive that implies a vital shift in orientations by providing favorable conditions (such as robust education system, internet access and infrastructure) to help blossom technopreneurship (Foo & Foo, 2000). Likewise, Malaysian government has shown significant progress in helping technopreneurs develop innovative concepts and enhance their knowledge (Yunos, 2002). Other countries that have adopted technology to nurture new business include India and Brazil. They have created sound technopreneurs and brought positive impact to the country's improvement as a whole (Burnett, 2000; Lalkaka, 2002).

In light of recent events in the Nigerian macroeconomic environment, small and medium entrepreneurship (SMEs) have compelling growth potential and like other emerging economies are likely to constitute a significant portion of Gross Domestic Product (GDP) in the near future. Technopreneurship requires tertiary and professional development programs and training to produce strategic thinkers who will have the skills to succeed in a dynamic global environment. Technopreneurial development programs should be introduced to sharpen business skills and market savvy. This is aimed at producing scientists and engineers who are productivity driven, technologically capable and competitive both locally and internationally (Oyelaran-Oyeyinka, 2007). In view of the forgoing, therefore this study examines the impact of technopreneurship education on business intention among undergraduate students in Kwara State, Nigeria.

1.1 Statement of the Problem

According to a 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. The Asian country, the fastest growing major economy in the world, is growing economically at 7.3% percent. 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). Despite the fact that entrepreneurship begins at home and in school and is nurtured by tutors, there is need to promote an entrepreneurial spirit at all levels of the society and at all levels of the academia to reduce employment rate. Strategic direction and decision making processes are getting demanding and complex.

This requires methodology that can transform professionals and even students into creative, innovative, and visionary leaders who understand the importance of technopreneurship in a changing global environment (Olokundun, Hezekiah, Stephen & Fred, 2014; Tung, 2011). Studies indicate that there are some factors that contribute to the success of technopreneurs. For instance, Kamarudin and Sajilan (2013) looked at the barriers to the success of animation technopreneurship and possible factors that may well contribute to the success of this field of enterprise. 31 companies were identified as actively producing animated TV series or feature films in Malaysia. Using quantitative method, data was collected using questionnaires sent to all these companies. 29 companies responded, while the other 2 declined to participate. The available data analysed indicated that possible factors that may well contribute to the success of such a technopreneurship endeavor includes access to financial resources, talent pool, government's initiatives; promotion and marketing; networks and collaboration; IP; content quality; technology; diversification of products; entrepreneurial skills; and business location.

Rosly, Junid, Lajin and Rahim (2015) examined the level of creativity of science and technology (S&T) cluster students' of University Technology Mara (UiTM) and how it affects them in terms of technopreneurship intention using quantitative approach. Their study found that creativity does impact one's entrepreneurial intention and should be considered as part of the overall analysis in identifying one's entrepreneurial competencies. Selvarany and Venusamy (2015) in their study attempted to explore and analyze more general elements in technopreneurship and to investigate the innovation and creation among small and medium enterprises in India. Empirical research based on surveys and interviews with testable hypothesis were employed while mixed methods and action research were adopted for analysis. 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) investigates whether information technology students' participation within factors such as desirability and feasibility affects creativity and technopreneurship intentions before or after their graduation in Brawijaya University in Indonesia. Their findings offer empirical evidence on the importance of desirability and feasibility of the relationship between creativity and technopreneurship intentions.

Furthermore, a study conducted in Italy by Colombo and Delmastro (2002) revealed that Italian parks succeeded in attracting businesspersons with better human capital and that entrepreneurs who experienced incubation programs performed better in terms of adoption of advanced technologies and founding of collaborative activities with universities. Therefore, it is demonstrated in Italy that the government is effective in fostering the development of new technology-based businesses. Similarly, in Israel, an innovation-based country is shaped through the connection between incubators and allied research organizations and this connection has produced synergy towards the achievement of entrepreneurial activity (Rothschild & Darr, 2003). Suzuki, Kim and Bae (2002) conducted a comparative study on entrepreneurship in Japan and Silicon Valley and they established that Japanese entrepreneur and Silicon Valley entrepreneurs have adopted advanced technology in growing their businesses. To be specific, the two countries' entrepreneurs have four different unique dimensions, which include risk and obstacles, infrastructures, growth factor and motivation.

Theoretically, 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, social network theory postulates that entrepreneurs are fixed in a larger social network structure that creates a significant proportion of their opening structure. It implies that an individual may have the ability wherewithal to identify that a given entrepreneurial break exist, but might lack the social contacts to transform the chance into a business start up. Therefore, access to a larger social link might help to overcome this problem. The literature on this theory confirmed that stronger social connections to resource providers will surely facilitate the acquisition of resources and augment the possibility of opportunity exploitation (Aldrich & Cliff, 2003; Kim, Aldrich & Keister, 2003). Second, human capital entrepreneurship theory assumes that entrepreneurship is hinged on two factors (education and experience).

Specifically, it is believed that the knowledge acquired via education and experience signifies a resource that is heterogeneously disseminated across individuals and in effect essential to understanding variances in business opportunity identification and utilization (Anderson & Miller, 2003; Davidson & Honing, 2003; Kim, Aldrich & Keister, 2003; Korunka et al, 2003; Shane & Venkataraman, 2000).

1.2 Objectives of the Study

The specific objectives of this study are stated below:

- (a) To know the students' perceived level of awareness on technopreneurship education
- (b) To examine the relationship between technopreneurship education and business intention

1.3 Hypotheses Development

Based on the research objectives of the study, the following hypotheses were formulated to guide the study:

- (a) There is no significant relationship between students' entrepreneurship course and business intention
- (b) There is no significant relationship between students' use of online materials and business intention
- (c) There is no significant relationship between students' use of social media and business intention

2. METHDODOLOGY

2.1 Population/ Sampling Techniques

The study adopted 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) sampling table to get a required sample size of 367 that is necessary as respondents needed based on the nature of the study. Furthermore, we adopted three sampling techniques, namely, stratified; 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 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; Punch, 2005).

2.2 Variable Measurement and Instrumentation

In this study, technopreneurship education is defined as the process of providing students with the concepts and skills to identify prospects that others have not noticed and to have the insight, self-esteem and knowledge to act where others have hesitated. It is also a process that results in creativity, innovation and growth (Alexander, 2013; Foo & Foo, 2000). Technopreneurship education is the independent variable and has three dimensions, namely entrepreneurship course, online materials and social media while 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 start their own businesses 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 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. In order to ensure validity of the instrument, it was given to experts in the field of the study for their observations and suggestions. All the observations and suggestions were corrected with a view to ensure 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, a pilot study was conducted using 50 students of higher institution that is outside the institutions that were used for the main data collection. The outcome of the study indicates 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).

2.3 Method of Data Collection/Analysis Technique

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 cross-sectional approach (Creswell, 2013). Statistical Package for Social Sciences (SPSS) and PLS-SEM software were employed to analyzed 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 independent and dependent variables of the study.

3. DATA PRESENTATION

3.1 Descriptive Statistics

3.1.1 Response Rate

In order to ensure high response rate for the study, we increased the printing of the questionnaires to 400 instead of 367 sample size needed to cater for the shortage questionnaire when administering it to students. Out of the 400 questionnaires, 376 were returned, 25 accounts for unusable questionnaires while 351 account usable questionnaires that were used for the analysis. To determine the response rate, we divided the total number of returned questionnaires from the distributed questionnaires and multiplied it by 100 ($376/400 \times 100 = 94\%$). Therefore, the response of the study is 94%, indicating 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%

3.1.2 Analysis on Students' Perceived Level of Technopreneurship Education

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

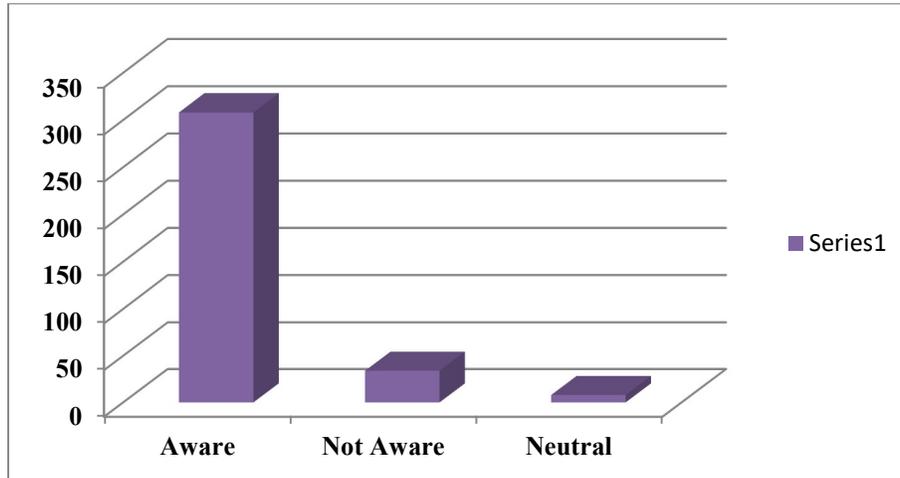


Figure 1: Students' perceived level of awareness on entrepreneurship course

The figure displayed above shows the level of students' awareness on entrepreneurship course 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 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 entrepreneurship course.

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

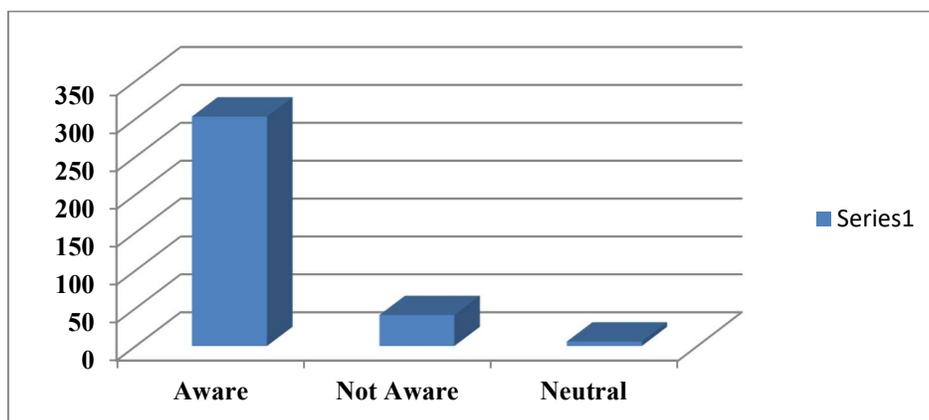


Figure 2: Students' perceived level of awareness on online material

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

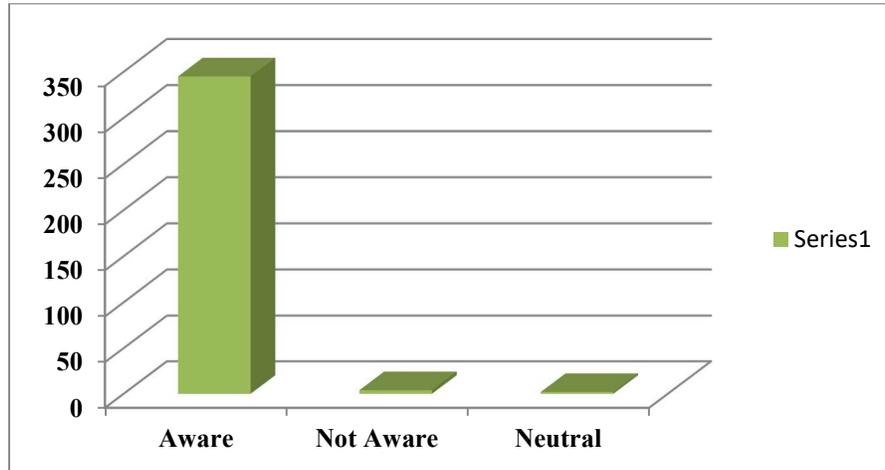


Figure 3: Students' perceived level of awareness on social media

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.

3.2 Analysis of PLS-SEM Results

The PLS-SEM (Partial Least Squares Structural Equation Modeling) has become a well-known technique of estimating path models with a particular reference to latent variables and their relationships. Thus, this section explains steps on how to stipulate and estimate path models by using PLS-SEM (Henseler, Ringle & Sinkovics, 2009). According to Hair et al., (2014), there are two ways in which path models can be processed, they are: assessment of measurement model, and assessment of structural model.

3.2.1 Measurement Model

According to Hair, Ringle and Sarstedt (2012), measurement model is the part of the model that looks at the relationship between the latent variables and their measures. Measurement model assessment in this study encompasses the testing of individual item reliability, internal consistency reliability as well as convergent and discriminant validity. The figure below shows the measurement model estimate output through the use of PLS-SEM.

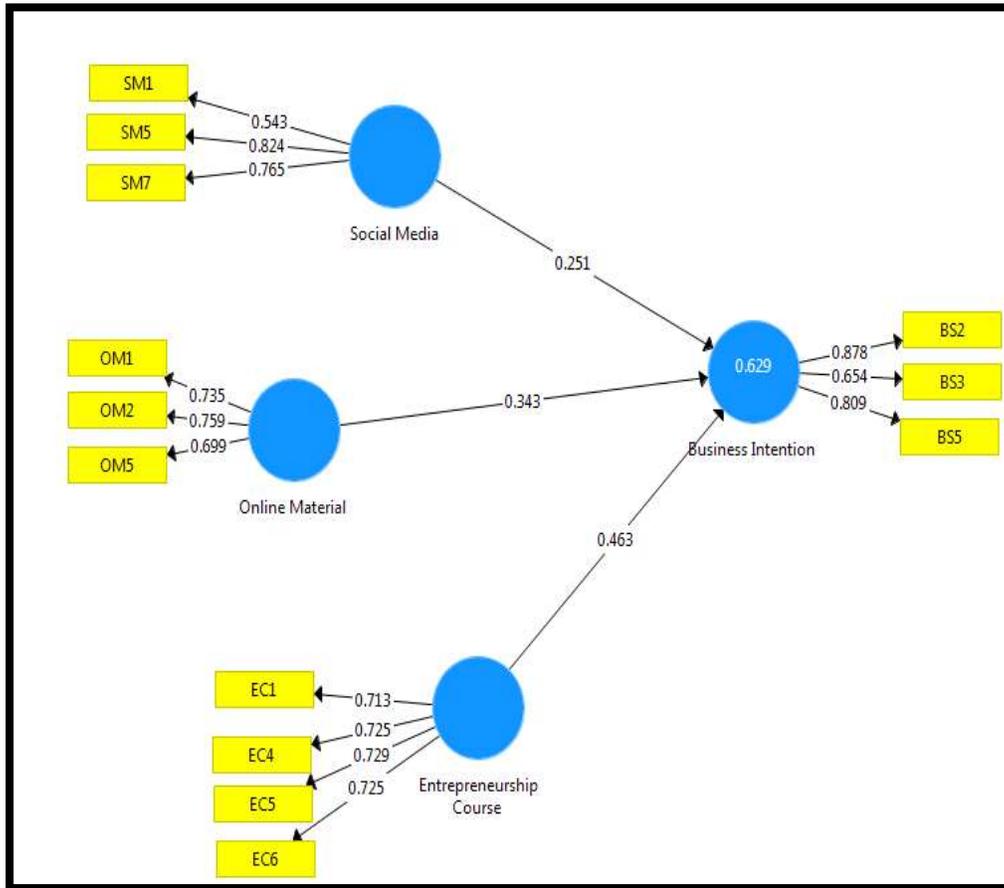


Figure 4: Measurement Model of the Study

3.2.2 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 et al., (2009). In congruent with the benchmark (minimum of .40) for item retention in research, all the items in the measurement model of the current study adequately loaded more than the minimum benchmark of .40. Therefore, all the items in the model loaded between 0.543 (minimum) and 0.878 (maximum) as contained in Figure 4. Meanwhile, studies revealed that the coefficients of Cronbach's alpha (e.g. Cronbach's alpha is usually obtained under the notion of parallelity which means that all factor loadings are controlled to be equal, and that all error variances are equally forced to be equal) and composite reliability are regarded as the most conventional methods of determining the internal consistency reliability of the adopted or adapted instrument in social research (McCrae, Kurtz, Yamagata & Terracciano, 2011).

In this study, we adopted composite reliability. There are two cogent reasons for the selection of composite reliability. First, Cronbach's alpha usually underestimates the true reliability of the scale and that the underestimation is well known when the correlation is lower (Henseler et al., 2009). Second, it is not appropriate to employ Cronbach's alpha's coefficients to estimate the reliability of a multidimensional composite scale score unlike composite reliability that measure the overall reliability of a collection of heterogeneous with similar items (Hair et al., 2012; Henseler et al., 2009). The table displayed below shows the composite reliability of the model.



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

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

3.2.3 Assessment of Convergent and Discriminant Validity of the Model

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) procedure for examining the average variance extracted of each construct. It is assumed that the average variance extracted estimate which measures the amount of variance captured by a construct in respect to the variance due to measurement error. 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 were 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 are not supposed to related are truly, unrelated (Chin, 2010).

According to Chin (2010), there is no standard value for discriminant validity, but a value less than 0.75 indicates discriminant validity likely exists between the two scales. The Table below shows the discriminant validity for the constructs of the study (Business Intention: 0.786; Entrepreneurship Course 0.723; Online Material: 0.731; Social Media 0.72), indicating a successful examination of discriminant validity in this study. Table 3 shows the discriminant validity of the study based on the 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

Additionally, as stated earlier that a successfully evaluation of discriminant points that a test of a concept is not highly correlated with other tests designed to measure the theoretically different concepts (Chin, 1998). The Table below compares the cross loadings of the constructs, meaning adequate discriminant validity.



Table 4: Cross loadings of the Constructs

	<u>Business Intention</u>	<u>Entrepreneurship Course</u>	<u>Online Material</u>	<u>Social Media</u>
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

3.3 Structural Model

After assessing the psychometric properties of the measurement model, the next step is to assess the properties contained in the structural model of the study so that the significance of the model can be obtained (Henseler et al., 2009). However, before determining the structural model, there is need for adequate bootstrapping of the model. Thus, we performed bootstrapping by using 1000 values to estimate the sample of 306 cases with the use of PLS. The result of the bootstrapping is given in Figure 2 and Table 5 below:

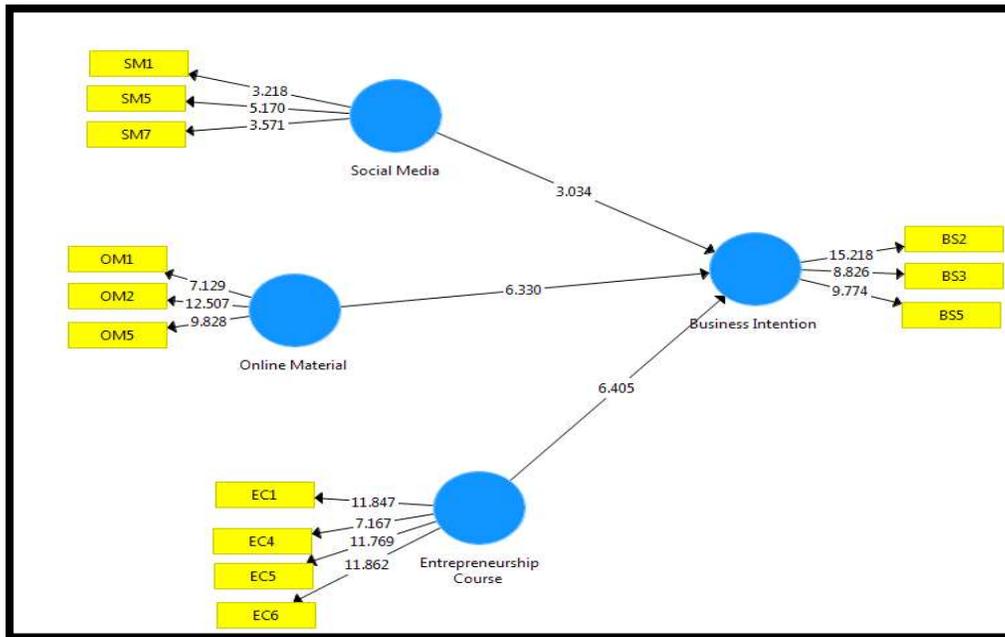


Figure 5: Structural Model

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

4. DISCUSSION OF FINDINGS

At 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 found that creativity does impact one's business intention and should be considered as part of the overall analysis in ascertaining one's entrepreneurial proficiencies.

The second research objective of the study is to examine the relationship 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 significant relationship between students' entrepreneurship course and business intention. As shown 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 assumed that the knowledge gained from formal or informal education and experience signifies a resource that is heterogeneously spread across personalities and in effect fundamental to understanding transformations in opportunity exploitation and identification (Anderson & Miller, 2003). Also, it is consistent with the work of Kim, Aldrich and Keister (2003) and Davidson and Honing (2003) who found that human capital factors are positively related to becoming a nascent entrepreneur while study conducted by Korunka et al, (2003) established a link between education and entrepreneurial success.

The second hypothesis postulates that there was no significant relationship 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 investigated the relationship between ICT and students' participation (within factors such as desirability and feasibility affects creativity) and technopreneurship intentions in Brawijaya University in Indonesia. The outcome of their research established the importance of both desirability and feasibility of the 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 significant relationship 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 similar to the one investigated by Suzuki et al. (2002) in Japan and Silicon Valley, which established that the 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 business person with better human capital and those entrepreneurs who experienced incubation programs performed better in terms of adoption of advanced technologies. Rothschild and Darr (2003) concluded 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. Social network postulates that entrepreneurs are fixed in a larger social network structure that creates a substantial proportion of their opening structure. The theory suggests that an individual may have the ability wherewithal to detect that a given entrepreneurial break exist, but might lack the social contacts to transform the chance into a business startup (Clausen, 2006; Shane & Eckhardt, 2003).

5. CONCLUDING REMARKS

Taken the findings of the study together, 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.

6. CONTRIBUTION TO KNOWLEDGE

Based on the findings of the study, our paper has contributed to the body of knowledge via three perspectives (practical, theoretical and methodological). From practical perspective, the findings of the study 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 studies. 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 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 hinged on two factors (education

and experience). Exactly, it is understood that the information attained via education and experience signifies a resource that is heterogeneously spread across individuals and in effect essential to understanding variances in business opportunity identification and utilization (Anderson & Miller, 2003; Kim, Aldrich & Keister, 2003; Korunka et al, 2003; Shane & Venkataraman, 2000), and 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 has contributed to the growing body of knowledge in three ways. First, we adapted instrument from the studies conducted by Olokundun, Hezekiah, Stephen and Fred (2014) and Tung (2011) to investigate the impact of technopreneurship education on business intention. 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 influences students' business intention offers a significant methodological contribution to the body of knowledge. Lastly, a review of 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 assess the psychometric properties of the study variables; this is to ensure comprehensive analysis of the data completed.

REFERENCES

1. 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.
2. Alexander, H. (2013). Building technopreneurship for next generation: How the benefits of technoentrepreneurship education affect career intentions of college students. *Journal of Entrepreneurship*, Vol. 3 (1), 31-40.
3. 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.
4. Burnett, D., (2000). *The Supply of Entrepreneurship and Economic Development*. Retrieved on April 3 2003 from <http://www4.ibm.com/software/developer/library/su-sing.html>.
5. Chin, W. (2010). How to write up and report 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.
6. Colombo, M. G., & Delmastro, M. (2002). How effective are technology incubators?: Evidence from Italy. *Research Policy*, 31(7), 1103-1122.
7. Cooper, D. R., & Schindler, P. S. (2009). *Business research methods* (10th ed.). New York: McGraw-Hill.
8. Davidson, P., & Honing, B. (2003), "The role of social and human capital among nascent entrepreneurs", *Journal of Business Venturing*, 20,121.
9. Foo, Check-teck, Foo, Check-tong, (2000). Socialization of Technopreneurism Towards Symbiosis in Corporate Innovation and Technology Strategy. *Technovation*, 20, 551 – 562.
10. Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with unobservable variables and measurement error. *Journal of Marketing Research* 18, 39-50.
11. 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.
12. Hair, J. F., Money, A. H., Samouel, P., & Page, M. (2007). *Research method for business*. West Sussex, England: John Wiley & Sons Ltd.
13. Hair, J. F., Ringle, C. M., & Sarstedt, M. (2012). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, 18, 139-152.
14. 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.), *Adv in Int. Marketing* (Vol. 20, pp. 277-320). Bingley: Emerald.

15. 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.
16. Kim, P. H., Aldrich, H. E., & Keister, L. A. (2003, January). If I were rich? The impact of financial and human capital on becoming a nascent entrepreneur. In *Annual Meeting of the American Sociological Association, Atlanta*.
17. 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.
18. Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement* 30, 607-610.
19. Lalkaka, R., (2002). Technology Business Incubators to Help Build an Innovation-Based Economy. *Journal of Change Management*, 3 (2), 167 – 176.
20. McCrae, R. R., Kurtz, J. E., Yamagata, S., & Terracciano, A. (2011). Internal consistency, retest reliability, and their implications for personality scale 239validity. [Article]. *Personality & Social Psychology Review (Sage PublicationsInc.)*, 15(1), 28-50. doi: 10.1177/1088868310366253.
21. Mursityo, Y.T., Astuti, E.S., & Suharsono, E.G. (2017). Technopreneurship intentions in faculty of computer science brawijaya university students. *Journal of Applied Management (JAM)*, 15(2), 320-329.
22. Oakey, R. P., (2003). Technical entrepreneurship in high technology small firms: some observations on the implication for management. *Technovation*, 23 (8), 679 – 688.
23. Okorie, N.N., Kwa, D.Y., Olusunle, S.O.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.
24. Olakundun, 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.
25. Oyelaran-Oyeyinka (2007), 'SME: Issues, Challenges and Prospects' FSS 2020 Int. Conference. Retrieved from:http://www.cenbank.org/fss/wed/SME_Issues,%20Challenges%20and%20Prospects_Oyeyinka%20Banji.pdf f. Pp 2 – 37.
26. 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.
27. Punch Newspaper (Thursday, March 7, 2019). Defusing Nigeria's Population Time Bomb.
28. Punch, K. F. (2005). *Introduction to social research - Quantitative & qualitative approaches*. London: Sage Publications.
29. 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.
30. Rothschild, L., Darr, A. (2005). Technological incubators and the social construction of innovation networks: an Israeli case study. *Technovation* 25 (1), 59–69.
31. 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.
32. Shane, S.A & Venkataraman, S. (2000), "The promise of entrepreneurship as a field of research", *Academy of Management Review*, 25(1), 217-226.
33. Shane, S.A & Eckhardt, J.T. (2003). "Opportunities and Entrepreneurship", *Journal of Management*, 29 (3), 333-349.
34. Suzuki, K., Kim S.H., & Bae, Z.T., (2002). Entrepreneurship in Japan and Silicon Valley: A comparative study. *Technovation*, 22, 595 – 606.
35. Tung, L. C. (2011). The impact of entrepreneurship education on entrepreneurial intention of engineering students. *City University of Hongkong: Run Run Shaw Library*.
36. Yunos, M. G., (2002). Building an Innovation-based Economy: The Malaysian Technology Business Incubator Experience. *Journal of Change Management*, 3 (2), 177- 178.