

# EXAMINING THE LINK BETWEEN UNIVERSITY SUPPORT SYSTEMS, KNOWLEDGE SHARING AND INNOVATION: A FOCUS ON NIGERIAN UNIVERSITY STUDENTS

**Maxwell Ayodele Olokundun, Covenant University**

**Ogunnaike Olaleke, Covenant University**

**Fred Peter, Covenant University**

**Ayodotun Stephen Ibidunni, Covenant University**

**Augusta Bosede Amaihian, Covenant University**

## ABSTRACT

*The objective of this study was to examine the role of university policy environment in motivating knowledge sharing and innovations among students of Nigerian universities the data for this study was collected from university students of four selected institutions in Nigeria offering a degree programme in entrepreneurship. The selected universities are Joseph Ayo Babalola in Osun State, Federal University of Agriculture in Abeokuta Ogun State, Federal University of Technology Akure Ondo State and Lead City University Ibadan Oyo State. This study adopted descriptive cross sectional survey research design in which the research questionnaire was administered to respondents. It was recommended that university support systems in Nigerian universities should motivate entrepreneurial related knowledge sharing among students to motivate innovations. The policy environment should be characterized by initiatives such as technology patenting and commercialization, seed funding, business mentoring and business incubators. It is also recommended that engagement of students with entrepreneurial development initiatives provided by institutions should involve students across all levels. Recent findings in entrepreneurship research have shown that early exposure to practical oriented entrepreneurship activities can increase the likelihood of expression of entrepreneurial behavior by undergraduate students.*

**Keywords:** Entrepreneurship Education, University Support Systems, Knowledge Sharing, Innovation.

## INTRODUCTION

The University environment can be a major determinant of student consideration of entrepreneurship as a career since university climate, shared values and engagement in extra-curricular activities may largely affect the formation of entrepreneurial intentions (Morris, Kuratko & Cornwall, 2013). To foster students' interest and motivate their considerations for a career in entrepreneurship, universities do not only offer entrepreneurship programmes as part of academic requirement, but they also get engaged in activities such as technology patenting and commercialization, business incubators initiatives, seed funding as well as mentoring all targeted at extending the frontiers and traditional boundaries of educational services particularly as it

relates to entrepreneurship education (Kauffman, 2013). These initiatives could stimulate creative thinking abilities and knowledge development among students culminating in innovations (Morris, Kuratko & Cornwall, 2013). It is worthy of note that contemporary universities considerably differ in their level of engagement as regards these initiatives and investments in student entrepreneurial support infrastructure. It is also possible that the university environment is able to enhance or impede student entrepreneurial dispositions and aspirations (Reznik, 2010). Although studies such as (Linan, Urbano & Guerrero, 2011; Shirokova Bogatyreva & Galkina, 2014) have looked into university environment and formation of student entrepreneurial intention, but a critical task to explore in the Nigerian context is to examine the role of university policy environment in motivating knowledge sharing and innovations as a proof of students' intentions for a career in entrepreneurship.

## **LITERATURE REVIEW**

### **Entrepreneurship Education**

Salamzadeh, Azimi & Kirby (2013) supported by Olokundun et al. (2014) consider entrepreneurship education as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technology related sciences and the acquisition of entrepreneurial skills, attitudes, understanding and knowledge relating occupations in various sectors of economic and social life. Hamidi, Wennberg & Berglund (2008) in line with Arogundade (2011) define entrepreneurship education as the purposeful intervention that is made by an educator in the life of the learner through entrepreneurial qualities and skills teaching, which will enable the learner to survive the dynamics of the business world. Mwangi (2011) believes that entrepreneurship education is designed to specifically support graduates, operating and aspirant entrepreneurs in the setting up/operation of their own entrepreneurial ventures rather than to seek paid employment from someone else or institutions (either public/private). Hence, Mensah (2013) adds that entrepreneurship education may capacitate an individual to unleash his/her entrepreneurial potential.

### **University Education and Entrepreneurship Development in Nigeria**

The prominent role of tertiary education as regards economic development of a nation has been recognized (Kors, 2008; Ajayi & Afolabi, 2009). The World Bank-sponsored study of Bloom, Canning & Chan (2005) brought to the fore the crucial and pivotal role of higher education in the knowledge economy, showing a strong link between higher education and economic development, via human capital development and technology diffusion. Specifically, universities are duty-bound to encourage economic growth through research and development, teaching and transfer of technology (Olorundare & Kayode, 2014; Farsi, Modarresi, Motevasseli & Salamzadeh, 2014). However, beyond the stated roles, it is pertinent to state that building entrepreneurial competencies is an added task that the new knowledge societies have put on universities (Wong, 2007; Ifedili & Ofoegbu, 2011; Guerrero, Urbano & Salamzadeh, 2015). Today's fast-paced economies, call for individuals that are enterprising, widely knowledgeable and able to effectively manage risks and uncertain situations (Wu, 2007; Enu, 2012). This mounts pressure on universities in Nigeria to meet up with the growing needs and expectations of students and the society, in order to ensure self-reliance, job creation and economic and development (Hatakenata, 2006 ; Olorundare & Kayode, 2014 ; Ziyae & Tajpour, 2016).

## **University Support Systems**

Gnyawali & Fogel (1994) described university support systems in the context of entrepreneurship education, as an entrepreneurial environment which consist of supporting infrastructures and initiatives. Considering that university teaching environments represent the most influential factors that affect students' perceptions and considerations of an entrepreneurship career, Mahlberg (1996) argued that universities play an active and important role in the promotion of entrepreneurship education, particularly because they are the most ideal setting to nurture and shape an entrepreneurial culture, among students. Bygrave (2004) stated that universities are at the forefront in the promotion of entrepreneurship as regards influencing students to think and behave like entrepreneurs. Roffe (1999) posits that universities create an environment that is entrepreneurially supportive, which encourages students' engagement in entrepreneurial activities. This was supported by Nasiru, Keat & Bhatti (2015) who stated that entrepreneurial universities create an environment that present entrepreneurship in a positive light, in order to attract the attention of students towards an entrepreneurial career.

## **Innovation**

Barringer & Ireland (2006) stated that innovation is regarded as the primary function of entrepreneurship and the core of the entrepreneurship process, because major ingredients of entrepreneurial breakthrough include new product development, a new technology, new location and a new market. Bosma & Harding (2007) argued that innovation involves the conversion of knowledge and ideas into benefits, hence it is a tool employed by entrepreneurs. Larsen & Lewis (2007) described innovation as a combination of the intention to develop a good idea and the doggedness and commitment to remain with the concept until implementation stage. Morris, Kuratko & Cornwall (2013) posited that innovation is evident in the introduction of new products in the firm and the introduction of new products to the relevant market. According to Larsen & Lewis (2007) this attribute distinctively differentiates innovation from invention because invention enhances the stock of knowledge, but it does not immediately arrive in the market place as a finished novel product or process. Consequently, Barringer & Ireland (2006) stated that innovation occurs at the point where new products and processes are brought into the market, arising from applications of both existing and new knowledge. This is why Bosma & Harding (2007) described innovation as an intention based process, which occurs at the kernel of a dynamic process, which is usually preceded by inventions and followed by the widespread adoption of the new variety of products by consumers.

## **Knowledge Sharing**

Lucas, Hult & Farrell (1996) defined individual knowledge sharing as the shared beliefs and behavioral practices associated with the dissemination of learning among different individuals. Moorman & Miner (1998) argued that knowledge sharing keeps alive knowledge and information acquired from different sources and serves as a reference and orientation for future action and direction. With particular reference to entrepreneurship education in the context of a university, the ideas generated by students in the business school may be valuable to students in the school of engineering as regards the development of innovative products and services. Lucas, Hult & Farrell (1996) stated that individual learning is as a result of a buildup from various sources, thus individual knowledge sharing is salient to the prevention of

information loss as a consequence of students' graduation. Moorman & Miner (1998) posited that an individual can be committed to learning and have a shared vision and still be limited in learning without the accumulation of knowledge. Lucas, Hult & Farrell (1996) suggested that the experiences gained and lessons learnt, during entrepreneurship education programmes, must be disseminated among students across various units or departments, which will eventually be stored up as an individual's information memory bank. Therefore individual knowledge sharing may facilitate students entrepreneurial intentions expressed as entrepreneurial behaviors such as product development and technological innovations (Moorman & Miner, 1998; Dirk, Bruce & Benson, 2013).

### **University Support Systems, Knowledge Sharing and Innovation**

Alberti & Sciascia (2004) argued that though students may possess the relevant entrepreneurial knowledge and skills, however they may not venture into entrepreneurship if the university supporting systems and infrastructure fail to promote the positive image of entrepreneurship. According to Kauffman (2013) Universities play a major role especially in creating an environment, which motivates students to express entrepreneurial behavior, by linking their research and students' education to emerging industry interests. Linan, Urbano & Guerrero (2011) posited that collaborations and innovations among University students can be achieved through activities such as by partnering with businesses, offering internships, creating venture funds and industry funded incentive programs. Morris, Kuratko & Cornwall (2013) argued that university support systems may stimulate knowledge building and sharing among undergraduates culminating in technological innovations and product development. Therefore it is possible that the lessons learnt from the experiences presented by institutional initiatives in Nigerian universities may motivate discussions and knowledge sharing among peers and students, which may create and foster a conducive atmosphere for innovative activities.

Based on this background the researchers postulated the following hypothesis in null form.

*H<sub>01</sub>: Entrepreneurship educator's competence does not motivate students' commitment to learning and business plan writing.*

## **METHODS**

### **Participants**

The data for this study was collected from university students of four selected institutions in Nigeria offering a degree programme in entrepreneurship. The selected universities are Joseph Ayo Babalola in Osun State, Federal University of Agriculture in Abeokuta Ogun State, Federal University of Technology Akure Ondo State and Lead City University Ibadan Oyo State. This study adopted descriptive cross sectional survey research design in which the research questionnaire was administered to participants based on purposive, stratified and simple random sampling techniques.

### **Data Collection**

A total of 600 hundred (600) students from the selected universities participated in this study. In developing the survey questionnaire instrument, questions were adapted from existing

literature that relate to the study. The validity and reliability of the research instruments was analyzed using content validity and Cronbach Alpha Reliability Procedure.

**Data Analysis**

Hierarchical Multiple Regression Analysis was used in validating the hypothesis postulated in the study using the Statistical Package for Social Sciences (SPSS) version 22. To ensure content validity experts on the subject matter of this study were provided with access to the measurement tool in order to provide feedback on the effectiveness of each question in measuring the constructs (Ghauri & Gronhaug, 2002). Informed decisions were made based on their feedbacks. The test to determine the internal consistency of the research instrument was conducted on the retrieved questionnaire with the aid of the Cronbach Alpha Reliability procedure which is given in Table 1.

Table 1 RELIABILITY STATISTICS	
Cronbach's Alpha	N of Items
0.856	40

Source: Field work, (2016).

The result indicated that the instrument had a good internal consistency based on the Cronbach Alpha Coefficient value reported at 0.856.

**RESULTS**

**Hierarchical Multiple Regression**

*H<sub>02</sub>: University support systems do not enhance individual knowledge sharing for innovations.*

**Regression**

Table 2 MODEL SUMMARY									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.228 <sup>a</sup>	0.052	0.050	0.81098	0.052	30.966	1	563	0.000
2	0.311 <sup>b</sup>	0.097	0.093	0.79243	0.044	27.668	1	562	0.000
a. Predictors: (Constant), envirom									
b. Predictors: (Constant), envirom, knwldge									

Source: Field Survey Result (2016).

The test of hypothesis was to assess the effects of university support systems on students' knowledge sharing and innovations. In the first step, the effect of university support systems on students' innovations was examined. The R-Square value is the degree of variation of the dependent variable, which can be predicted by the independent variable. Consequently, the analysis revealed that university support systems predicted 5.2% variance in students' innovations (R<sup>2</sup>=0.052, F (2.563)=30.966, p<0.05). In the second step, the mediating role of

knowledge sharing was examined. The analysis showed that knowledge sharing was able to predict 9.7% variance in students' innovations, over and beyond the effects of university support systems ( $R^2=0.097$ ,  $F(1.562)=27.668$ ,  $p<0.05$ ). The significance of the F-change explained in Table 2 was assessed and it was significant (0.000).

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	20.366	1	20.366	30.966	0.000 <sup>a</sup>
	Residual	370.278	563	0.658		
	Total	390.644	564			
2	Regression	37.740	2	18.870	30.050	0.000 <sup>b</sup>
	Residual	352.904	562	0.628		
	Total	390.644	564			
a. Predictors: (Constant), Support Systems						
b. Predictors: (Constant), Support Systems, knwldge						
c. Dependent Variable: innov						

Source: Field Survey Results (2016).

Table 3 above shows the results of the two models. The first model showed the effect of university support systems on students' innovations. The F-value is calculated as the Mean Square Regression (20.366) divided by the Mean Square Residual (0.658), yielding  $F=30.966$ . From this results, model 1 in the table is statistically significant ( $Sig=0.000$ ). The second model examined university support systems and students' knowledge sharing culminating in innovations. The F-value is calculated as the Mean Square Regression (18.870) divided by the Mean Square Residual (0.628), yielding  $F=30.050$  at an acceptable significant level of 0.000. Since the results of the Anova in table 4, 6.5b show a significant level of 0.000, the alternate hypothesis which states that 'university support systems motivate knowledge sharing and innovations' is therefore accepted, while the null hypothesis which states that 'university support systems does not motivate knowledge sharing and innovations' is rejected. Table 4 below shows the contributions of the independent and mediating variables to the variance in the dependent variable and their levels of significance.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	3.190	0.138		23.133	0.000					
	Support Systems	0.189	0.034	0.228	5.565	0.000	0.228	0.228	0.228	1.000	1.000
2	(Constant)	2.366	0.207		11.448	0.000					
	Knwldge	0.150	0.034	0.181	4.396	0.000	0.228	0.182	0.176	0.951	1.051
	Sharing	0.260	0.049	0.216	5.260	0.000	0.256	0.217	0.211	0.951	1.051
a. Dependent Variable: innov											

Source: Field Survey Result (2016).

Based on the results in model 2, the table above revealed the contributions of university support systems and knowledge sharing to students' innovation and their levels of significance. (envirom;  $\beta=0.150$ ;  $t=4.396$ ;  $p<0.01$ , knwldge;  $\beta=0.260$ ;  $t=5.260$ ;  $p<0.05$ ).

### **DECISION**

The significance levels of the variables are less than 0.05 and the level of significance of F change is also less than 0.05 (0.000). Based on the results above, it is justified that the null hypothesis should be rejected while the alternate hypothesis should be accepted. It can therefore be concluded that university support systems enhance individual knowledge sharing and innovations. In other words, individual knowledge sharing mediates the relationship between university support systems and innovation.

### **DISCUSSION**

Findings from the test of hypothesis revealed that university support systems enhance students' knowledge sharing for innovations as proof of entrepreneurial intentions. The implication of this is that university support systems as regards entrepreneurship mentoring, seed funding, business incubation, among others are salient areas for to entrepreneurial development of students. This motivates knowledge sharing and transfer of knowledge among students and creates a suitable environment for innovations. This is in line with the study of Amalia (2012) and the study of Shirokova, Tsukanova & Bogatyreva (2015) which showed that if entrepreneurship students are sufficiently supported by university entrepreneurial initiatives such as business incubation, mentoring and other initiatives, it can create an environment that motivate entrepreneurial development and innovative activities among students. Conversely Nabi, Holden & Walmsley (2006) query the impact of university entrepreneurship education on entrepreneurial development of students. However, the finding of this study has showed that university support initiates relevant to entrepreneurial development of students, can motivate knowledge sharing and innovations during entrepreneurship programmes. The implication of this study is that support systems in Nigerian universities relevant to entrepreneurial development such as entrepreneurship mentoring, seed funding, business incubation, among others, create a suitable environment for innovations.

### **CONCLUSION AND RECOMMENDATIONS**

University support systems in Nigerian universities should motivate entrepreneurial related knowledge sharing among students to motivate innovations. The policy environment should be characterized by initiatives such as technology patenting and commercialization, seed funding, business mentoring and business incubators. It is also recommended that engagement of students with entrepreneurial development initiatives provided by institutions should involve students across all levels. Recent findings in entrepreneurship research have shown that early exposure to practical oriented entrepreneurship activities can increase the likelihood of expression of entrepreneurial behavior by undergraduate students. The emerging phenomenon in entrepreneurship education research is a concept referred to as student entrepreneurship which refers to the expression of entrepreneurial behaviors such as business start-ups while in school. With the likes of enterprises such as Facebook, Google and Jobberman that began as school

projects, it is highly recommended that student entrepreneurship should be an embedded institutional policy that cuts across all levels of undergraduate students.

### ACKNOWLEDGEMENT

The authors wish to appreciate the management of Covenant University for offering full sponsorship for this research work.

### REFERENCES

- Ajayi, A.I. & Afolabi, F.O. (2009). The role of tertiary education in national development: The Nigerian scenario. *Journal of Teacher Education*, 10(1), 34-46.
- Alberti, F. Sciascia, S. & Poli, A. (2004). Entrepreneurship education: Note on an ongoing debate. *Proceedings of the 14th Annual International Entrepreneurship Conference, University of Napoli Federico, Italy*, 4-7.
- Amalia. (2012). Kendala Berwirausaha Dikalangan Mahasiswa. Retrieved from <http://manajemen.unnes.ac.id/wp-content/uploads/2013/01/Kendala-Berwirausaha-Dikalangan-Mahasiswa.pdf>.
- Arogundade, B.B. (2011). Entrepreneurship education: An imperative for sustainable development in Nigeria. *Journal of emerging trends in educational research and policy studies*, 2(1), 26-29.
- Barringer, B.R. & Ireland, R.D. (2010). *Entrepreneurship: Successfully launching new ventures (3rd Ed.)*. New Jersey: Pearson.
- Bosma, N. & Harding, R. (2007). Global entrepreneurship monitor: GEM 2006 results. MA, USA: Babson College And UK: London Business School.
- Bygrave, W.D. (2004). The entrepreneurial process. In W.D. Bygrave & A. Zacharakis (Eds.), *The Portable MBA in Entrepreneurship*. Hoboken, NJ: John Wiley & Sons.
- Dirk, D., Benson, H. & Bruce, M. (2013). The roles of learning orientation and passion for work in the formation of entrepreneurial intention. *International Small Business Journal*, 31(6), 652-676.
- Farsi, J.Y., Modarresi, M., Motevasseli, M. & Salamzadeh, A. (2014). Institutional factors affecting academic entrepreneurship: The case of university of Tehran. *Economic Analysis*, 47(1/2), 139-159.
- Ghauri, P. & Gronhaug, K. (2002). *Research methods in business studies*. Edinburgh, UK: Pearson Education Limited.
- Gnyawali, D.R. & Fogel, D.S (1994). "Environments for entrepreneurship development: Key Dimensions and Research Implications." *Entrepreneurship Theory and Practice*, 18(4), 43-62.
- Guerrero, M., Urbano, D. & Salamzadeh, A. (2014). Evolving entrepreneurial universities: Experiences and challenges in the Middle Eastern context. In A. Fayolle & D.T. Redford. *Handbook of Research in Entrepreneurship Education: Entrepreneurial University Handbook Volume 4* Cambridge: Edward Elgar Publishing.
- Guerrero, M., Urbano, D. & Salamzadeh, A. (2015). Entrepreneurial transformation in the Middle East: Experiences from Tehran universities. *Technics Technologies Education Management*, 10(4), 533-537.
- Hamidi, D.Y., Wennberg, K. & Berglund, H. (2008). Creativity in entrepreneurship education. *Journal of Small Business and Enterprise Development*, 15(2), 304-320.
- Hatakenata, S. (2006). *University-industry partnership in MIT, Cambridge and Tokyo: Storytelling across boundaries*. Routledges Falmer.
- Ifedili, C. & Ofoegbu, F. (2011). Managing entrepreneurship education in Nigerian universities. *European Journal of Educational Studies*, 3(1), 1946-6331. 27
- Kors L.A. (2008). On the sadness of higher education. *The Wall Street Journal*, , 1-7.
- Larsen, P. & Lewis, A. (2007). How award-winning SMEs manage the barriers to innovation. *Creativity and Innovation Management*, 16(2), 142-151.
- Linan F., Urbano D. & Guerrero M. (2011). Regional variations in entrepreneurial cognitions: Start-Up intentions of university students in Spain. *Entrepreneurship and Regional Development*, 23(4), 187-215.
- Lukas, B.A., Hult, G.T.M. & Ferrell, O.C. (1996). A theoretical perspective of the antecedents and consequences of organizational learning in marketing channels. *Journal of Business Research*, 36(3), 233-244.
- Mahlberg, T. (1996). Evaluating secondary school and college level entrepreneurial education-Pilot testing questionnaire. Paper Presented at the *Internationalizing Entrepreneurship Education and Training Conference*, Arnhem/University of Nijmegen, Netherlands.

- Mensah, M.S.B. (2013). Entrepreneurship education on wholesale? Considerations on didactics and pedagogy for enhanced graduate employment in Ghana. *European Journal of Business and Management*, 5(15), 105-113.
- Moorman, C. & Miner, A.S. (1998). Organizational improvisation and organizational memory. *Academy of Management Review*, 23(4), 698-723.
- Morris, M.H., Kuratko, Donald F. & Cornwall, J.R. (2013). *Entrepreneurship programs and the modern university*. Edward Elgar Publishing.
- Mwangi S.M. (2011). The contribution of entrepreneurship education course in enhancing management skills of informal entrepreneurs. *Journal of Education and Vocational Research*, 2(3), 86-92.
- Nabi, G., Holden, R. & Walmsley, A. (2006). Graduate career-making and business start-up: A literature review. *Education+Training*, 48(5), 373-385.
- Nasiru, A., Keat, O.Y. & Bhatti, M.A (2015). Influence of perceived university support, perceived effective entrepreneurship education, perceived creativity disposition, entrepreneurial passion for inventing and founding on entrepreneurial intention. *Mediterranean Journal of Social Sciences*, 6(3), 88-95.
- Olokundun, M.A., Falola, H.O., Ibidunni, A.S. & Inelo, F. (2014). An assessment of the taught entrepreneurship programmes in Nigerian secondary schools. *Merit Research Journal of Education and Review*, 2(11), 257-275.
- Olorundare, A.S. & Kayode, D.J. (2014). Entrepreneurship education in Nigerian universities: A tool for national transformation. *Asia Pacific Journal of Educators and Education*, 29, 155-175.
- Reznik, G. (2010) Studencheskoe predprinimatelstvo v vuze: Problemy i perspektivy razvitiya [Student entrepreneurship at a university: Problems and perspectives of development]. *Problems of Modern Economics*, 3(35), 411-413.
- Roffe, I. (1999). "Transforming graduates, transforming firms." *Education+Training*, 41(4), 1.
- Salamzadeh, A., Azimi, M.A. & Kirby, D.A. (2013). Social entrepreneurship education in higher education: Insights from a developing country. *International Journal of Entrepreneurship and Small Business*, 20(1), 17-34.
- Shirokova, G. Osiyevskyy, O. & Bogatyreva, K. (2015). Exploring the intention-behavior link in student entrepreneurship: Moderating effects of individual and environmental characteristics. *European Management Journal*, 30(1), 14.
- Shirokova, G., Bogatyreva K. & Galkina T. (2014). Effectuation and causation: The correlation between university infrastructure and the choice of behavior among student entrepreneurs starting a business. *Rossiyskiy zhurnal menedzhmenta*, 12(3), 59-86.
- Wong, P. (2007). Approaches to university-industry links: The case of national university of Singapore. In S. Yusuf & K. Nabeshima (Ed.), *Directions in Development, Human Development* (pp. 383-393). Washington DC: The World Bank.
- Ziyae, B. & Tajpour, M. (2016). Designing a comprehensive model of entrepreneurial university in the science and technology parks. *World Journal of Entrepreneurship, Management and Sustainable Development*, 12(3), 267-280.