The Moderation Effect of University Culture on the Relationship between Technology Support Services and Entrepreneurial Orientation of Incubatees in Selected Public Universities in Kenya

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ABSTRACT: The importance of entrepreneurship in turning around the economies of nations of the world is without doubt, very real. It is because of this that many countries (developed, developing and underdeveloped) are coming up with strategies and programs to make it thrive. One of these programs, and which is the basis of carrying out this research, is business incubation, an approach that universities in developed nations have used to enhance entrepreneurship and which is currently gaining popularity in universities in developing and underdeveloped nations, Kenya included. Some academicians have defined this program as an environment conducive to the production of entrepreneurially oriented individuals who can engage effectively in entrepreneurial decisions and actions. The purpose of this study was to determine the moderation effect of university culture on the relationship between technology support services and entrepreneurial orientation of among incubatees in selected public universities in Kenya. The study is rooted on two theories thus, the exposure theory of entrepreneurship and the innovation theory of entrepreneurship. The study employed descriptive research design of a mixed method approach employing quantitative and qualitative strategies. The study target population was 1220 from where a sample size of 309 was drawn using Yamane's formula. For validity, experts were engaged to cross examine the instruments whereas for reliability, SPSS was used to determine Cronbach's Alpha value for networking. Primary and secondary data were collected using the questionnaire and interview schedules. Data was analyzed using descriptive and inferential statistics. The findings were that there was a statistically significant (P = .030) effect of technical support services on entrepreneurial orientation among incubatees in selected public universities in Kenya. The Regression Coefficient Output before and after moderation showed that technology support service was statistically significant in the prediction of the outcome variable EO at P = .030 and .001 respectively. This study is significant because it will help university incubator management to redesign their incubation programs by including strategic technical support service mechanisms within their business incubation operations.

KEYWORDS: *Incubatees, Entrepreneurial Orientation, Business Incubators, Technology Support, university Culture*

I. INTRODUCTION

A lot of interest in entrepreneurship has increased in institutions of higher learning globally over the last decade (Keat, Selvarajah & Meyer, 2011).The realization of its importance has resulted into many nations (developed, developing and underdeveloped) of the world to come up with strategic programs, projects and plans to enable it (entrepreneurship) thrive. One strategy that has been used, especially by the developed nations since the 1980s and which is currently being embraced by the developing and underdeveloped nations- Kenya included, is business incubation. Business incubation (BI) has been defined as a program consisting of a combination of business development processes, infrastructure and people, designed to nurture entrepreneurial ideas and small businesses by supporting them through the early stages of development and growth respectively (Al-Mubaraki & Busler, 2011). Incubators nature young enterprises and help them to grow and survive during startup period when they are most vulnerable. University related incubators have been analyzed as instruments that promote commercialization by establishing Startups (Mahmood, 2015). Rao and Mulloth (2017), explained that a university business incubation program is a mechanism to promote research intensity, innovative ideas as well as commercializing activities and developing entrepreneurs. They provide hands-on management assistance, information on financing, technology support services, mentoring services, networking services, shared administrative services, equipment access, laboratory services, flexible leases and expanded work space – all under one roof. Its major objective is to ensure successful production of individuals and enterprises that will come

out of the business incubator entrepreneurially viable and free standing (Chirambo, 2014). The business incubator has further been acknowledged as a promotional instrument for, an economic uplift and establishment of new entrepreneurs (Jamil, Ismail and Mahmood, 2015), establishment of new firms (Almubaraki & Busler, 2015), enhancing entrepreneur's performance (Dee, Gill, Lacher, Livesey & Minshall, 2013) and commercialization (Chandra, Silva & Alejandra, 2012) both in developed and developing countries. University technology support services is a collaborative effort between academia, industry and other relevant stakeholders involving new technical knowledge sharing and learning. Working closely with their university partners incubatees have managed to take on opportunities that exist hence enabling them to successfully develop licensed inventions and gain access to novel scientific and technological discoveries. These factors enhances incubatees' entrepreneurial orientation by supporting their innovative, proactive, and risk-taking behaviors. This study investigated whether technology support services offered within university incubators had an effect on entrepreneurial orientation of incubatees.

The dimensions of University culture thus exerts different influences on the behavioral attributes of an individual or firm. Literature available posits that individuals and firms that immerse themselves in University culture, benefit a lot because they constantly rearrange their strategies based on new tricks from Universities (Owiso, n.d.). In this study it was proposed that business incubation practiced in public universities and entrepreneurial orientation relationship is contingent on University culture. The study also posited that positive business incubation activities give positive impacts if cultural practices are highly benign. In as far as the moderating factor is concerned, it was an assumption by this study that since universities stands a better position of enhancing entrepreneurial culture among potential entrepreneurs, it is therefore important that they make available the much-needed friendly culture for business incubation programs to succeed. The University cultural factors considered in this study included the university management support, established entrepreneurial practices, innovation transfer, technology transfer and access to university research findings. Apart for looking at the effect of technology support services on entrepreneurial orientation of incubatees, this study further looked at the moderation effect of university culture on that relationship.

The study objectives
1. To determine the effect of technology support services on entrepreneurial orientation among incubatees in selected public universities in Kenya.
2. To establish the moderating effect of university culture on the relationship between technology support and entrepreneurial orientation among incubatees in selected public universities in Kenya.

The study hypotheses
1. There is no statistically significant effect of technology support services on entrepreneurial orientation among incubatees in selected public universities in Kenya.
2. There is no statistically significant moderating effect of university culture on the relationship between technology support services and entrepreneurial orientation among incubatees in selected public universities in Kenya.

The scope of the study
This study examined the effect of networking services on entrepreneurial orientation of incubatees among the selected universities in Kenya. It covered three Kenyan public universities that have functional business incubation programs and they included Maseno University located in Kisumu County, Nairobi County's Kenyatta University and University of Nairobi. Specific participants in the study included the three incubator managers who in essence were the key informants in this study. The targeted population from the Universities of study was 1220 and consisted of current student and public incubatees who were traced from within the institutions and from their business premises.

II.   LITERATURE REVIEW
This study was derived from two theoretical foundations which included the exposure theory of entrepreneurship by Dwijendra (1971) and the innovation theory of entrepreneurship by Joseph Schumpeter (1949). The former advances the relationship between the dependent and independent variable while the latter advances the position of the output variable (dependent) and how this output is capable of influencing individual's entrepreneurial trends.

Technical Support Services: Technological services provided to a business have the ability to create a productive individual who thinks innovatively in the area of idea and product development. Technical support in institutions come in the form of ICT provision, allowing for the use of labs and workshops for experiment, making public research findings, obtaining new technological ideas through networking and having continuous consultation with experts. Technical support enables potential entrepreneurs to respond to the varied market needs effectively and efficiently more than other competitors. Frambach, Fiss & Ingenbleek (2016) views a technology oriented individual as one who focuses more on research and development, acquire new technical knowhow and improve on them on a regular basis and these are what leads firms to superior performance.

Martynovich (2016) posited that any potential entrepreneur who is technologically focused always tries to get acquainted to continuously changing technology in order to keep along with the dynamic trend which enables him to maintain a continuous innovation effort increase. Many more researchers have conducted studies regarding the impact of technology on firm performance and in all these studies a positive relationship has been found [(Zhou, Brown, Dev & Agarwal, (2007); Mwithiga, Njihia & Iraki, (2017); Jasmmy & Bhaya, (2016); Yu, Dong, Shen, Khalifa & Hao, (2013)].

Technical Support and Entrepreneurial Orientation : Díez-Vial and Montoro-Sanchez (2016), while trying to determine how technical knowledge sharing with universities may foster innovation, gathered some empirical evidence from the Madrid Science Park in Spain through a survey and observation of 76 that were located in Madrid within the Autonomous University of Madrid and that were networks with university incubators. An in-depth interview with managers of tenant firms was conducted. The deduction was that there existed a positive connection between technological knowledge obtained from universities and individuals and firms' innovativeness. The study recommended that further studies touching on other environmental factors should be conducted for purposes of expanding knowledge.

This observation is similar to one by Chaves, Rapini, Suzigan, Fernandes, Domingues and Carvalho (2016) whose study "The contribution of universities and research institutes to Brazilian technical and innovation systems", and whose aim was to investigate the innovation results of the interactions among universities, research institutes and entrepreneurial firms. The study was based on a primary survey of 1005 research group leaders who are in association with universities and research institutes in Brazil. Data was collected through questionnaire distribution to members of the research groups and was followed by group discussions. Three issues were explored thus: the types of interaction, the channels of communication and the outcomes of the interactions. A logic framework was used to analyze the interactive behavior. The study observed that technical support, research and development (R&D), short term collaborations in projects and consulting and interactions through publications and internet materials, have a considerable influence on innovation tendencies of emerging entrepreneurial firms.

Colombo and Delmastro (2002), while trying to determine the effectiveness of business incubators that engaged in new technology on novice enterprises in Italy, found evidence of value addition while Ferguson and Olofsson (2004), as cited by Schwartz and Michael (2008) in his study titled 'Incubator age incubator time: Determinants of firms survival after graduation', proved a higher survival rate and innovative tendencies for incubated firms in Sweden that applied new technological approaches (e.g. e-business) compared to incubated firms that did not. Business incubators, where appropriate technology is emphasized have a higher survival rate (Sedita, Apa, Bassetti & Grandinetti, 2017) and sales growth (Lofsten & Lindelof, 2002). Markmana, Phan, Balkin and Gianiodis (2005) researched on the role universities technology transfer offices play to ensure the success of startup firms. They used grounded theory to build a framework to address one question thus, how university technology transfer offices are appropriate for new startup firms. Based on qualitative data collected after interviewing 128 university technology transfer directors, the nonprofit technology transfer structure were more correlated to new startup venture than for – profit transfer structures. The interviews with these directors further revealed, through content analysis of their feedback that university technology transfer offices were divided into two thus (1) nonprofit technology and research section and for-profit private venture extension. Another observation made was that although two-thirds of the universities studied had invested heavily in the incubation program most of them had not linked their activities with universities and research outputs.

A study by Jamil, Ismail and Mahmood (2015), analyzed knowledge transfer from universities in Malaysia to firms of novice entrepreneurs through commercialization of university technology and research via incubators by examining into detail the commercialization tools. Based on critical review of previous empirical literature published over the past ten (10) years by recognized publishers (Technovation and Journal of Technology

Transfer), the findings were obtained from thirteen (13) journals and all posited that Technology support plays a significant role in idea and firm development and that university incubators have been proven by researchers to be points of disseminating technological innovations that assist in the development of entrepreneurial ventures. A study by Kirkman (n.d.) investigated whether university technology transfer could influence entrepreneurial orientation of potential entrepreneurs. The researcher, a survey method, was carried out in Houston University (USA). A questionnaire instrument was used to collect data from the respondents. A sample size of 838 biotechnology firms from a target population of 1000 was obtained. The findings revealed a positive relationship between university technology transfer and entrepreneurial orientation and that universities have a stake in the development of technologies that are very essential to startup and continuing businesses. Future research need to focus on university's specific factors that influence entrepreneurial orientation.

In Malaysia business incubation practices is technology oriented and the Malaysian Government has taken a step to establish incubation centers under the supervision of the Malaysian Development Committee which established a pool of ICT Micro Small and Medium Enterprises (MSMEs). The ICT incubators are specifically aimed to capture and cluster technopreneurs from both local and foreign countries to create and nurture a critical mass of technopreneurs MSMEs and startup companies involved in ICT and Bio-technology industries. The policy has propelled Malaysia to be one of the fastest ICT growing economies in the world (Said, Adham, Abdullah, Hänninen, & Walsh, 2012). In Taiwan 98% of the businesses are in the categories of MSMEs and these sector supports the economy and provides up to 76% of total job opportunities (Wang, Hung & Wang, 2013). Initially, these firms lacked strategic positioning tactic, proper distinction and effective programs, worthy capital, research and development (R&D) capacity (Lee, 2005). These barriers were later overcome by the introduction of business incubation programs in 98 of the 163 colleges and universities whose aim were to pass across technology to the MSMEs (Said, *et. al.,* 2012.). Business incubation programs have been established and designed to stimulate new-generation startups and activate traditional enterprises that employ new ways of doing thing. It has been used as an important policy tool to enhance innovation and entrepreneurship for economic growth and employment by providing integrated services. The policy has shown a lot of economic impact. University-type incubators, which are the majority in Taiwan, are in the forefront in influencing the entrepreneurial activities on campus and the surrounding regions. They have completely turned around the thinking of young potential individuals who have now taken to entrepreneurship (Lee, 2005).A summary of the literature for technical support services is as shown in table 2.7 below.

Table 2.7: : Summary of Literature on Technical Support Services and Entrepreneurial orientation

Author/ Date	Topic/Focus	Methodology	Sample Size	Data collection Technique	Findings	Future Research
Martin-Cruz, Rodriguez-Escudero (ND)	New Technologies and Entrepreneurial Intention	A survey study	183 students enrolled in the University of Valladolid and undergoing an entrepreneurial incubation program	Questionnaire method	The students intentions to be entrepreneur are driven by their attitude towards new technologies	Study could be extended by adding other factors as the networking(a powerful tool for enhancing knowledge) **(Gap)**
Markmana, Phan, Balkin and Gianiodis (2005)	Entrepreneurship and university based technology transfer	Qualitative research design	A sample of 128 university technology transfer directors	Interviews with university technology transfer director	The various resources that have been put to push the agenda of business incubation in university have not effectively addressed technical and research transfer to firms that require to be incubated	This study listened more to the directors of university technology offices and not the individuals whom these offices serve. A study that will consider both is essential**.(Gap)**

Tang, Baskaran, Pancholi and Lu (2013)	Technology Business Incubators in China and India: A Comparative Case Study	Comparative analysis approach/Qualitative & Quantitative survey	A sample extracted from 670 BIs from China and 120BIs from India (No clarity on sample size)	Employed multiple data collection methods/largely secondary sources.	Apart from offering typical services (faculty consultancy, labs and workshops, training and ICT services), universities in China also offered University related services (mentoring and technical support). This was completely opposite with Indian incubators. They were not University based and only offered only typical services	Further theoretical and empirical work is needed to examine the effects of BIs on the growth of start-ups by comparing the progress of new ventures within and outside incubators **(Gap)**
Díez-Vial and Montoro-Sanchez, (2015),	Determining how technical knowledge sharing with universities may foster innovation, gathered some empirical evidence from the Madrid Science Park in Spain	Correlational study	76 firms located in Madrid within Autonomous University of Madrid	In-depth Interviews with managers	Increased technology transfer to startups and other firms, by universities, increases innovation tendencies.	Other environmental element could be studied to enhance understanding.**(Gap)**
Chaves, Rapini, Suzigan, Fernandes, Domingues and Carvalho (2016)	The Contribution of universities and research institutes to Brazilian innovation system	A survey study	1005 research group who were associated with university and research institutes in Brazil	Questionnaire and through group discussions	Technical support, research and development and short-term collaborations and consulting have considerable influence on innovation tendencies of emerging firms.	N/A
Kirkman(ND)	University Technology Transfer Factors as Predictors of Entrepreneurial Orientation.	A survey study	A sample size of 838 biotechnology firms	A questionnaire instrument used to collect data	The findings revealed a positive relationship between university technology transfer and entrepreneurial orientation	Future research to investigate which university specific factors that most significantly influences EO.

Source: Literature on Technical Support and Entrepreneurial Orientation

Conceptual Framework: To formulate a conceptual framework, the contribution from related empirical literature and theories underpinning the study came in handy. To provide an overview of the conceptual framework, a graphical presentation graphical representation that includes the three core variables of the conceptual framework: independent, dependent and moderating variables is shown.
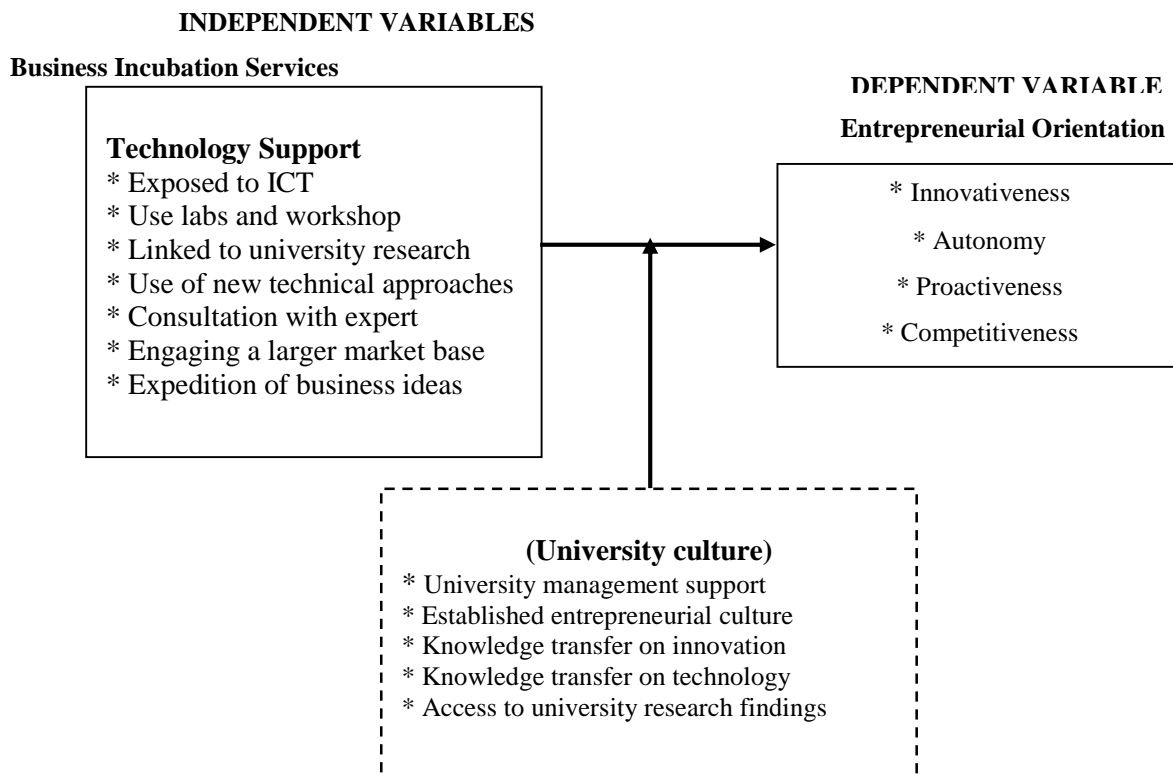
INDEPENDENT VARIABLES

Business Incubation Services

DEPENDENT VARIABLE

Entrepreneurial Orientation

Technology Support
* Exposed to ICT
* Use labs and workshop
* Linked to university research
* Use of new technical approaches
* Consultation with expert
* Engaging a larger market base
* Expedition of business ideas

* Innovativeness

* Autonomy

* Proactiveness

* Competitiveness

(University culture)
* University management support
* Established entrepreneurial culture
* Knowledge transfer on innovation
* Knowledge transfer on technology
* Access to university research findings

Figure 2.1: The Conceptual Framework
Source: Author (2019)

III. METHODOLOGY

The study used a quantitative approach to determine the extent to which mentoring services were offered and their impact on entrepreneurial orientation of incubatees (the dependent variable) in selected public universities in Kenya. The population of the study consisted of (N=1220) incubatees both current and graduated from public universities of study. This data was provided by the management of the incubators of study. The study sample was calculated from the target population using Yamane's formula for calculating sample size thus.

$$n \quad = \quad \frac{N}{1 + N\,(e)^2}$$

$$n \quad = \quad \frac{1220}{1 + 1220\,(.05)^2}$$

$$= \quad 301.2$$
$$\approx \quad 301$$

The study used a non-probability sampling method and employed stratified sampling design where samples were extracted from a population that had two distinct and identifiable strata. The strata consisted of current student incubatees and public incubatees who were chosen proportionately. The Questionnaire tool, interview schedules were used to collect primary data. Secondary data on the other hand were simply extracted from source and noted for reference. The questionnaire was meant for current incubatees, public incubatees. These were either residents within the incubator premises or had businesses elsewhere but had contact with the university incubators. The questionnaire tool was structured into three sections. The first section required the respondents to give some background information about themselves and their interaction with the business incubators. The second, third and fourth sections of the instrument were critically structured to ensure that the constructs captured all the variables of the conceptual framework. The independent variable required the respondents to state the extent to

which the networking services provided impacted on them. These variable, which had seven items were measured on a five-point Likert scale. The dependent variable required the respondents to assess their strength that was the result of networking services provided during the business incubation process. The last section of the questionnaire tool was the moderating variable (University culture). Respondents were required to state the extent to which University culture had influenced their ideas and businesses while at the same time being provided with networking services. The variable had five items and were measured on a five-point Likert scale. In all these scenarios, the reasons for selecting 5-likert scale are twofold: First is because most researches have adopted the same number and have been able to receive responses that are appropriately measurable and which allows for easy comparison of reliability coefficients during the analysis of data (Croasmun & Ostrom, 2011). Secondly, literature suggests that five-point scale appears to be less confusing and therefore increase the response rate from where data can be appropriately gathered for accurate analysis purposes (Spencer, 2016).

Validity of research instrument: Determination of the validity of the instrument was undertaken by carrying out face and content validity. This was done by allowing some of the incubatees and incubation experts before the pilot study, to just interact with the document so that their feelings and opinions are used to reorganize the study instruments. This was basically trying to find out from them whether the instrument they were about to be exposed to was measuring what it was intended to measure.

Reliability of research instruments: For content validity, the instruments were cross-examined by the lecturers from the School of Business and Economics (Kisii, Masinde Muliro and Maseno Universities) who are experts in the field of study to ensure appropriateness of the construct and that the questions posed to the respondents represents the construct domains of study. To further enhance the validity of the questionnaire, two managers associated with business incubators (not managers of incubators of study) were approached to give their input on the tools of the study and comment on any remedial actions. The experts scrutinized the questionnaire and the key informant interview schedule and addressed any anomaly that arose. The questionnaire was thereafter subjected to a pilot study which resulted into further remedial actions on the questionnaire.

Data Analysis: This study data was analyzed quantitatively using descriptive and inferential statistics. Descriptive statistics, being the first level of analysis was used to analyze individual variables where data is summarized and patterns found through means, frequencies and percentages of distributions. Inferential statistics on the other hand was used to determine the relationships that existed between the variables of study which later on assisted in generalizing results and making appropriate predictions. To analyze the objectives, multiple regression analysis (specifically stepwise multiple regression analysis) through SPSS was used to establish the relationship between the dependent and independent variables. Reference was made to Schneider, Hammel and Blettner (2010) who deducted that multiple regression is a useful tool for investigators to examine the impact of multiple variables (independent variables and moderating variables) on a single outcome of interest (dependent variable). To assist in the analysis of the above objectives, the multiple regression model below was used.

$$Y = \beta_0 + \beta_1 X_1 + + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e \ldots\ldots\ldots\ldots\ldots\ldots \text{ (Mod: 1)}$$
Source: (Schneider, Hammel and Blettner, 2010)

When testing for the X – Y relationship ……………… ($\beta_{1\ldots\ldots 4}$)

Where,

Y	=	Entrepreneurial Orientation (EO)
β_0	=	Constant performance
$\beta_1, \beta_2, \beta_3, \beta_4$	=	Coefficient of the independent variable on BI services
X_1	=	Networking services
X_2	=	Mentoring services
X_3	=	Technical support services
X_4	=	Funding Support services
e	=	Error margin that may arise from other factors that Influence usage

Multiple regression analysis was used to analyze objective (2). To achieve this, stepwise regression, which is a form of multi regression analysis was used.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 M (X_1 + X_2 + X_3 + X_4) + e \ldots \text{ (Model 2)}$$
$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e \ldots\ldots\ldots\ldots \text{ (Step 1)}$$

$$Y = \beta_5 M(X_1 + X_2 + X_3 + X_4) + e \dots \dots \dots \dots \dots \dots \text{(Step 2)}$$

When testing (i)   X – Y relationship $(\beta_{1\dots\dots 4})$
(iii) XM – Y relationship (β_5)

Where, M -   University Culture
β_0 -   Constant performance
β_1 - β_5 Coefficient of the predictors
$X_{(1\dots\dots 4)}$ - Independent variable $(X_1 \dots\dots X_4)$

The model helped explain the moderating influence of university culture on the relationship between networking services and entrepreneurial orientation of incubatees in public universities in Kenya.

IV.   RESULT, DISCUSSION AND CONCLUSSION

A total of 361 questionnaires (150 to current student's incubatees and 211 to public incubatees) were distributed to respondents. Out of these, 309 were received back accounting for 85.6% response rate. A similar study by Thobekani and Tengeh (2016) titled 'An evaluation of the effectiveness of business incubation programs: A user satisfaction approach', while trying to establish whether business incubation was leveraging small and medium enterprises posted a response rate 40% after giving out seventy questionnaires getting back 28 that were useful.

Table 4.1: Descriptive Statistics for the elements of technology support services

	N	Min.	Max.	Mean	SD
Exposed to ICT	309	2	5	3.37	.893
Allowed the use of labs	309	2	5	3.59	.910
Accessed university research findings	309	2	5	3.70	.930
Develop new ideas using better methods	309	2	5	3.89	.802
Consult with many technology experts	309	2	5	3.95	.857
Can explain business idea to larger market	309	2	5	3.93	.867
Development of idea expedited	309	2	5	4.07	.854
Valid N (listwise)	309				

Source: Field data (2019)
Note: Response levels - 'not aware' (1); 'no extent' (2); 'some extent' (3); 'large extent' (4); 'very large extent' (5).

From table 3.1, it can be seen that the mean responses on the extent to which technology support services provided impacted on incubatees was, M = 3.37, SD = .893 for exposed to ICT, M = 3.59, SD = .910 for allowed to use the labs, M = 3.70, SD = .930 for accessed university research findings, M = 3.89, SD = .802 for develop new ideas using better methods, M = 3.95, SD = .857 for consult with many technology experts, M = 3.93, SD = .867 for being able to explain business idea to larger market, M = 4.07, SD = .854 for being able to expedite development of ideas. The descriptive statistics findings was further confirmed by the frequency and percentage distribution outcomes of the IVs the results of which are shown in table 4.2.

Table 4.2: Descriptive Statistics for the IV Construct Expressed in Frequencies and Percentages

		Exposed to ICT		Allowed the use of labs		Accessed university research findings		Develop new ideas using better methods		Consult with many technology experts		Can explain business idea to larger market		Development of idea expedited		
		Freq.	Valid %	Freq.	Valid %	Freq.	Valid %	Freq.	Valid d%	Freq.	Valid d %	Freq.	Valid %	Freq.	Valid d %	CUM%
Valid	not aware	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	No extent	50	16.2	39	12.6	32	10.4	15	4.9	16	5.2	24	7.8	14	4.5	**8.8**

Some extent	133	43.0	101	32.7	97	31.4	73	23.6	73	23.6	55	17.8	60	19.4	**27.4**
Large extent	89	28.8	118	38.2	111	35.9	152	49.2	130	42.1	148	47.9	125	40.5	**40.4**
Very large extent	37	12.0	51	16.5	69	22.3	69	22.3	90	29.1	82	26.5	110	35.6	**23.5**
Total	309	100.0	309	100.0	309	100.0	309	100.0	309	100.0	309	100.0	309	100.0	**100.0**

Source: Field data (2019)

Note: Response levels - 'not aware' (1); 'no extent' (2); 'some extent' (3); 'large extent' (4); 'very large extent' (5).

The descriptive statistics outcome shown in table 3.2 expressed in percentages showed that cumulatively, most of the incubatee (40.4%), to a large extent agreed that technology support services offered to them has a greater impact. Another 23.5%, to a very large extent believed the same and another 27.4% believed that to some extent it had done so living only 8.8% who did not feel that technology support services had done anything to them.

Multi Regression Analysis of Data: The linear relations between the dependent and independent variable and the interaction of moderator variable in that relationship were determined using Stepwise Multiple Regression Analysis. The first objectives was analyzed using Model 1 whereas the second was analyzed using model 2 the result of which is as shown in table 4.3, 4.4 and 4.5.

Table 4.3:Model Summary[c]

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	.195[a]	.038	.026	.259	.038	3.017	4	304	.018
2	.608[b]	.370	.359	.210	.332	159.366	1	303	.000

a. Predictors: (Constant), FSS, MS, TSS, NS

b. Predictors: (Constant),FSS, MS, TSS, NS, UCUL

c. Dependent Variable: EO

In table 4.3, the results, with all the predictor variables considered collectively, was such that $R^2 = .038$, adjusted $R^2 = .026$ and SEE = .259. These results of the regression analysis showed that the multiple correlation coefficient (R) between the predictors and the outcome variable was a simple correlation (R = .195). The interactive variable entered changed the models values such that $R^2 = .370$, adjusted $R^2 = .359$ and SEE = .210. It also showed that the business incubation services accounted for 3.8% of the variation in entrepreneurial orientation of incubatees but on insertion of the interactive variable (university culture), this value increased to 37.0%.

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Source: Field Data (2019)

a. Predictors: (Constant), FSS, MS, TSS, NS

b. Predictors: (Constant), FSS, MS, TSS, NS, UE

c. Dependent Variable (EO)

Key (FSS – Funding Support services; MS – Mentoring Services; TSS – Technical Support Service
NS – Networking Services; UE – University culture; EO – Entrepreneurial Orientation)

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Table 4.4: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.811	4	.203	3.017	.018
	Residual	20.430	304	.067		
	Total	21.241	308			
2	Regression	7.853	5	1.571	35.544	.000
	Residual	13.388	303	.044		
	Total	21.241	308			

Source: Field Data (2019)
a. Dependent Variable: EO
b. Predictors: (Constant), FSS, MS, TSS, NS
c. Predictors: (Constant), FSS, MS, TSS, NS, UE
Key: (FSS – Funding Support Service; MS – Mentoring Services; TSS – Technical Support Services; NS – Networking Services; UE – University culture)

Table 4.4 shows the overall regression model with the element of the predictor variable (business incubation services) considered as a group which was statistically significant at F (5,303) = 35.544, P < .05 from the initial F (4,304) = 3.017, P<.05. This result meant that the ratio of the improvement in the prediction was greater than the inaccuracy within the model because F > 1. The researcher interpreted these results as implying that the model significantly had the ability to predict the outcome variable EO. Determination of the effectiveness of technology support services was done using the coefficient table 4.5

Table 4.5: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.276	.165		25.873	.000
	NS	-.034	.046	-.055	-.735	.463
	MS	.081	.041	.144	1.981	.048
	TSS	-.069	.032	-.159	-2.176	.030
	FSS	-.045	.028	-.093	-1.614	.108
2	(Constant)	3.526	.147		24.054	.000
	NS	.033	.038	.053	.870	.385
	MS	.098	.033	.172	2.928	.004
	TSS	-.085	.026	-.195	-3.284	.001
	FSS	-.008	.023	-.016	-.346	.730
	UCUL	.136	.011	.593	12.624	.090

Source: Field Data (2019)
a. Dependent Variable: EO

From table 4.5, the predictor variable (technology support services) t (308) = -3.284, P = .001 after interaction and t (308) = -2.176, P = .030 before interaction were statistically significant predictors of the outcome variable (entrepreneurial orientation) and the changes in p - values was an indication that an interaction effect had taken place.

Hypothesis testing: The decision on whether to reject or not to reject the hypotheses was made based on the P – value of the regression outputs and specifically the ANOVA table. A value less than 0.05 leads to the rejection of the null hypothesis and vice versa

Table 4.6: Values of Hypothesis Test Results in Summary

Source: Table 4.5 (2019)

Hypothesis Tested	P-Value	Verdict
H_{01}: There is no statistically significant role of technology support services on entrepreneurial orientation among incubatees in selected public universities in Kenya.	.030	Rejected
H_{02}: There is no statistically significant moderating role of university culture on the relationship between technology support services and entrepreneurial orientation among incubatees in selected public universities in Kenya.	.001	Rejected

On application of multi regression analysis to determine the role of technology support services on entrepreneurial orientation of incubatees in selected public universities in Kenya, the verdict based on the hypothesis was 'to reject' the null hypothesis (P = .030). This result was supported by the output of descriptive statistics that showed that incubatees were satisfied with the networking services that they were receiving from the business incubation program.

This position which is supported by the theoretical arguments fronted by Abdullahi (2018), in his study that was looking at technology business incubation as a strategy for entrepreneurship and development in Kano, Nigeria. The study used a qualitative method that also entailed field visits to the incubators to observe and carry out interviews with incubatees and incubator management. One of the major deductions was that the success of businesses will be leveraged based on how technology leaves the incubator and reaches the incubatees and that since there had been tremendous effort to link entrepreneurial pursuits and incubation facilities in universities, research centers and technology and scientific institutions in Kano – Nigeria, there was bound to be increased entrepreneurial undertaking moving forward.

The 'Rejection of the hypothesis is supported by findings of author Chaves *et al.,* (2016) who concluded that firms and individuals who share knowledge with universities in matters technology tend to show a great deal of innovativeness and a wealth of proactive tendencies. The rejection is further supported in a study by Kirkman (2011) who investigated the position of university technical support factors as predictors of entrepreneurial orientation. The goal of the study was to explore the relationship between university technology transfer and EO by examining the transfer process, transfer experience and the transfer items. The study targeted the biotechnology firms that are in relationship with the University of Study (Houston). A survey research method was used with questionnaires as the data collection instrument. The study found a positive relationship between university technical support and entrepreneurial orientation of biotechnology firm owners.

Objective 2: To establish the moderating role of university culture on the relationship between technology support services and entrepreneurial orientation among incubatees in selected public universities in Kenya.

On application of multi regression analysis to determine the moderating role of University culture on the relationship between technology support services and entrepreneurial orientation among incubatees in selected public universities in Kenya, this study found a statistically significant moderating role P < .05 hence 'rejecting' the null hypothesis. The finding is true and is based on the most recent and eminent trends that has taken shape in universities and higher learning institutions around the globe. These institutions have started playing a predominant role in strengthening entrepreneurial competencies through mentorship and support to the aspiring entrepreneurs at the nascent stage of their startup journey. Universities have shifted their focus from traditional to entrepreneurship-oriented education, instilling confidence in the budding entrepreneurs to turning their entrepreneurial ideas into reality (Lindberg, Bohman & Wilso, 2017).

This observations is supported by Díez-Vial and Montoro-Sanchez, (2015), who while determining the performance strength of organizations that had linkage with university technologies deducted that there existed a positive connection between technological assistance obtained from university research and individuals and individuals entrepreneurial orientation.

V. RECOMMENDATIONS

The study revealed a positive association between technical support services and entrepreneurial orientation of incubatees. Technical support is a means of ensuring that incubatees are exposed to current technology through utility and transfer processes. The incubator management should ensure that incubatees are fully engaged in technology transfer process to enable them gain ownership of the technology and quality information that come with it. Other fundamental undertakings that management should engage in include exposing incubatees to ICT and the use of labs and workshops. These benefits positively informs an entrepreneurial orientation of an incubatee.
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