

Exploring Managerial Entrepreneurial Competencies Framework for Technical College Programs

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ABSTRACT

One of the challenges of technical education in Sub-Saharan Africa, including Nigeria, is the lack of an appropriate entrepreneurial framework for the content of the technical college curriculum. The purpose of this study was to explore the entrepreneurial competencies for technical college programs in Nigeria. This study was guided by qualitative approach through document analysis and semi-structured interview with 15 participants selected purposively and eleven Journal Articles were analyzed. The empirical findings from semi-structured interviews confirm the theoretical findings in document analysis. This study found several managerial entrepreneurial competencies in document analysis and interviews, eventually analyzed thematically. Themes include: Business plan, Decision making, technical know-how, Interpersonal relationship and Communication. The study analyzed only 11 documents and conducted 15 interviews, so the conclusions drawn from these sources depend on the authenticity of the information provided by the participants. The study found that managerial entrepreneurial competencies are worth for inclusion into the technical college programs curriculum in Nigeria. Therefore, it is recommended that the curriculum needs to be reviewed to ensure that they meet the educational changes such as global trends, 21st century education policies and Industrial Revolution 4.0, which now become a worldwide phenomenon.

Keywords: *Industrial Revolution 4.0, entrepreneurial framework, entrepreneurial competencies, 21st century.*

I. INTRODUCTION

Technical and vocational education is a key factor in the worldwide industrial development plan; it is a tool for empowering the public, especially the youth for sustainable living and social economic development [1]. United Nation Education and Scientific Organization [2] defined technical and vocational education and training (TVET) as all forms and stages of educational processes involving, in addition to general knowledge, relevant technology and science studies and the acquisition of practical skills, knowledge, attitudes and work-related knowledge in various economic and social sectors of life [2]. It is clear that technical and vocational education is the most reliable tool to reduce poverty, unemployment, eradicate disease, among other example in developing countries [3]. Thus, for example in Nigeria, the purpose of establishing technical colleges is to address the issues of job creation, youth employment, self-reliance, poverty eradication, skills development and productivity increase to compete with current opportunities and challenges in the labor market [4]. The colleges are considered as the leading vocational institutions in Nigeria to conduct

programs like building construction, electrical / electronics, metalwork, motor mechanics, woodworking, among other examples.

However, most technical college students graduate without the required entrepreneurial skills [5]. Similarly, [6] emphasize that technical college graduates roaming the streets due to the insufficient entrepreneurial competencies required to work individually as skilled staff. On the other hand, the gap between college-taught curriculum and the skills required in small businesses and enterprises is a main hindrance to SMEs growth and development [7]. In respects to this [8,9] suggested a need for a new school curriculum that will adapt the teaching of entrepreneurship education, which will be the solution to the current problem of unemployment and high poverty rates. As a result, this is clear evidence that technical college programs in Nigeria are experiencing weaknesses in entrepreneurial competencies in the curriculum. Therefore, integrating entrepreneurial competencies into technical education requires careful evaluation of the principles and concepts of entrepreneurial ability.

1.1 Entrepreneurship Education in the Context of Technical Education

Entrepreneurship education is an educational training that prepares an individual to become a responsible and enterprising person by developing entrepreneurial competencies [10]. This education helps individuals to develop skills, knowledge, and attitudes necessary for the achievement of their set goals. Research has shown that people with entrepreneurial education are more employable [10]. Hence, the significance of entrepreneurship education for sustainable industrialization and poverty reduction cannot be over emphasized. This phenomenon is imperative of creating adequate technical and entrepreneurial qualified personnel, who can stimulate investment opportunities, create jobs and increase productivity [11]. Therefore, entrepreneurship can be described as the entrepreneur performance that can be termed as someone who assumes innovation, finance, business knowledge to convert skills and innovation into economic assets.

To sum up, it has been argued that the role of entrepreneurship education in the development of entrepreneurs and the improvement of entrepreneurial activities in every economic could not be over emphasized. Because of this it can be understood that there is a need for integrating

entrepreneurial training in Nigerian technical colleges. Chekole, [7] observed lack of integration between the curriculum taught in the colleges and the required skills in the workplace at the small business and enterprise is a major hindrance to the growth and development of SMEs. Regarding this [8,9] suggested the need for new school curriculum that would adopt the teaching of entrepreneurial education, this will serve as a solution to the current issues of unemployment and high poverty rate. The purpose of instilling entrepreneurial mindset into students as well as producing new educated entrepreneurs and new businesses is to produce well-educated entrepreneurs who can create jobs [12]

1.2 Basic of Managerial Entrepreneurial Competencies

Managerial entrepreneurial competencies (MEC) are specific individual competencies which assist an individual to become an excellent manager, example of such are specific knowledge, abilities, skills, traits, motives, attitudes and values necessary to improve management performance [13]. These performance based competencies are assessed through observed behaviors [14]. Literature identifies various dimensions of managerial

competencies which contribute significantly to career success [15,16]. Additionally, [17] maintains that managerial competencies take the second set of factors related with successful entrepreneurs. Consequently, [18] identify early growth managerial competencies:

Demonstrates the financial skills needed to effectively run the business.

Regularly keeps track of the business's financial position.

Maintains low levels of overhead.

Does not spend excessive amounts on luxury or personal items.

Maintains a debt level that the business can manage.

Treats employees fairly.

Communicates regularly with employees. (p. 44).

Since, in today's competitive technological driven world a high degree of managerial competencies are required from the new breed of graduating students, to emerge as successful entrepreneurs [19]. Therefore, it is

evidently that managerial entrepreneurial competencies have a paramount important to be included in the ECs model of technical college programs which can lead to a better venturing start up.

II. THEORETICAL FRAMEWORK

2.1 Basic Concept of Entrepreneurship

The concept of entrepreneurship has a wide range of meanings. The origin of the word entrepreneur is a French word “*entreprendre*” means to ‘under take’ in a business context it means to start a business. According to [20] entrepreneur is a person able to focus at the environment, identify the opportunities and enhance the resources at hand and maximize the opportunities. Kaur, [21] ascertained that entrepreneurship is the propensity of a person to organize the business of his/her own and to run profitability, employing all the qualities of leadership, decision making and managerial caliber etc. UNESCO-UNEVOC, [22] adopted the definition of School, [23] “Entrepreneurship is the recognition of an opportunity to create value, and the process of acting on this opportunity, whether it involves the formation of a new entity. While concepts such as ‘innovation’ and ‘risk taking’ specifically are usually associated with

entrepreneurship, they are not necessary to define the term.”

2.2 Entrepreneurial Competencies

The term competency in education was initially used to define trainee teacher behaviors [24]. But management competency was promoted by Boyatzia, (1982) who had conducted a survey of more than 2000 managers, thus identified and considered more than hundred possible competencies. Competency is an underlying characteristic of an individual that he/she takes in a job situation, that may lead to a higher and effective performance in such job [25]. The notion of competencies in recent years has attracted attention from various disciplines in the academia, education, medicine, psychology, public policy to mention but a few [26]. They further reiterated that their work in various disciplines has demonstrated various proficiency, specifically competency is associated with high level of performance or productivity. Therefore, according to [27] individual characteristic is termed as entrepreneurial competency while a person who accepts risk to gain profits in venturing is entrepreneur. In fact, entrepreneur needs skill, knowledge and ability to perform a

successful business. Consequently, [28] maintained that competencies are the collective and unified components of knowledge, skills, and attitudes. Also, [29] attributed knowledge, skills, and attitudes as an important elements of competencies for various career ways. Therefore, entrepreneurial competencies are the integrated and combined elements of knowledge, skills and attitudes required by an entrepreneur to execute a successful venture.

2.3 Basic Concept of Managerial Entrepreneurial Competencies

Managerial Entrepreneurial Competencies (MEC) are specific individual competencies that assist an individual to become an excellent manager, example of such are specific knowledge, abilities, skills, traits, motives, attitudes and values necessary to improve management performance [13]. This is supported by [14] who affirmed that management performance based competencies are assessed through observed behaviors. Accordingly, MEC are identified [18] as an important aspect needed for early growth business.

2.4 Managerial Entrepreneurial Competencies Framework

Therefore, the framework of the study shows the integration of MEC training as an independent variable and the curriculum content as dependent variables. The background study for the conceptual framework on ECs evaluates the centrality of competency development for the achievement of greater development and employment growth. Since technical education is based on providing opportunities there must be an excellent and strategic link to higher productivity, employment and development. So, producing significant numbers of technical entrepreneurial qualified individuals who can motivate investment opportunities, create jobs and increase productivity is the main purpose for this study. Relevant and affordable training programs are highly important for any development, certainly, absence of such programs hinders skills development and employability.

A strong theoretical underpinning was provided by this study based on the ECs for technical college programs in driving self-employment in Nigeria. McClelland motivation theory and Cochran's sociological theory of entrepreneurship emphasizes the need of nurturing good and

successful entrepreneurship right from the college level while simultaneously using factors such as culture, norms and social sanction. Similarly, Human capital theory by Becker, 1964; Schultz, 1961 stresses the value of education and shows that students with higher level of entrepreneurial competencies exhibits greater results of entrepreneurial activities. Finally, the underpinning theories suggested that an appropriate model of ECs for technical college programs will create a conducive environment for training of the students with high n-achievement so that they become successful entrepreneurs.

III. OBJECTIVE OF THE STUDY

The main objective of this study was to qualitatively explore the Managerial Entrepreneurial competencies required by technical college students for self-employment in Nigeria.

Research Question?

What are the Managerial Entrepreneurial competencies required by technical college students for self-employment in Nigeria?

IV. RESEARCH METHODOLOGY

The study utilized a qualitative research method for the data collection through two phases. The first phase involves document analysis, and the second phase involves interviews with research participants. Researchers have successfully conducted the study at technical institutions and SMEs of north-west zone in Nigeria with a total population of 891 experts. Cluster sampling [30,31] was adopted by the researchers to select three states out of seven in the study area, and quota sampling procedure [30] in selecting the 15 participants, which comprises 10 trade teachers from nine technical institutions (from each sampled institution); and 5 entrepreneurs from the SMEs (at least one from each sampled state). All the participants are conceded experts due to their education background, knowledge and experience in their respective field of specialization.

4.1 Method of Data Analysis

Document analysis and semi-structured interview for the data collection to explore the research questions by the researchers were used. For the document analysis, journal articles that discussed ECs were selected in Scopus database and Google

scholar search uses the following keywords: entrepreneurial competencies, managerial competencies, administrative skills. The author finds several documents that discuss the concept of managerial competencies. However, we only select articles that reflect managerial entrepreneurial competencies regarding the integration into the curriculum. Eventually, eleven journal articles were selected for inclusion in the study. The documents were analyzed using thematic analysis with the aid of form drawn to guide the analysis process. The documents were reviewed for identification of managerial entrepreneurial competencies appropriate integration in the technical college's curriculum, as shown in Table 1 below.

The qualitative data analysis process based on recommendations of [32], begins with the "recognition" of the data by listening to the tape used to record the interviews, transcribe the interviews in the papers and proofreading of the transcripts. In addition, the analysis of the semi-structured interview started initially with a visit to the institutions and the SMEs scheduled for this study, to brief the selected participants about the purpose of the study and make schedules for the interview with them. Subsequently, the interviews were conducted

with participants as scheduled. The interview protocol precisely requested participants to indicate their perceptions about entrepreneurial competencies in technical college and the components of the entrepreneurial competencies and their dimensions, suitable for integration into the technical college curriculum in Nigeria. For example, the first question reads `` what are the most important items or components concerned with entrepreneurial competencies in technical college? Thematic data analysis was also utilized in analyzing the generated data from the semi-structured interview by the researchers. The analysis was started by transcribing the audio-recorded form the data immediately after the first interview. The process continued in the same way of conducting and transcribing the interview, before conducting the subsequent interview

until it was believed that the data attained a saturation point. The analysis continued with an in-depth reading and rereading of the transcribed data which was subsequently offered to the interview participants for their corrections and confirmations to improve the validity of the data.

V. RESULTS

The data collected were theoretically determined to answer the research question through analyzing the document and empirically by interviewing participants as outline below:

A. Document Analysis

The documents analyzed by the researchers were eleven journal articles focused on MEC as shown in Table 1. These include: [18] and [33]-[34].

Table 1: Finding matrix from document analysis

Authors	Business plan	Decision making	Technical know-how	Interpersonal relationship	Communication	Administration
Brown and Hanlon [18]		√			√	
Chang and Rieple [33]	√					√

Ilayaraja, [35]		√	√			
Nath and Sahu [36]	√	√			√	
Robles and Zárrega-Rodríguez [37]		√			√	
Fatoki [38]	√	√			√	
Rezaeizadeh et al. [39]		√		√	√	
Inoti [40]	√	√	√			
Malekipour et al. [34]	√	√				
Sundah et al. [41]	√	√	√			
Chang et al. [42]	√	√		√	√	

The above table 1 indicates that eleven journal documents on MEC were analyzed and found that among the dimensions of the MEC ‘decision making’ has the highest citation with ten journal articles indicating the important of this dimension in MEC. This was followed by ‘business plan’ and ‘communication’ dimensions as also another important dimensions in MEC. Consequently, ‘technical know-how’ and ‘interpersonal relation’ are another important MEC dimensions found in the documents analysis. Therefore, these dimensions due to their importance in management of entrepreneurial activities are found worth for inclusion in the ECs model for technical college programs in Nigeria.

B. Interview Findings

Managerial Entrepreneurial Competencies

Following the interview with the 15 experts (ER1 to ER15) participated in the study. Example of some typical responses of the participant on the managerial ECs were given below:

ER1: *“I believe managerial competencies are very important for technical college students since they are expected to establish their own business after graduation. So, they need all the leadership qualities.”*

ER2: *“I recommend managerial competency because I am anticipating these young people after graduation and establishing the business to be the leaders of that venture. So managerial competency is very important”*

ER3: *“Hmmm Manager, ah I mean, managerial skills are needed for these students to become novice entrepreneurs because of administrative work, yes, they need it.*

ER4: *ability ... ah yes, managerial competency is important for these youngsters in preparing them to be self-employed”*

ER5: *“Then, they need to know how to manage the business when it was established”*

The below table show the code and categorization of Managerial entrepreneurial competencies construct.

Building on the responses of the qualitative data, all the experts mentioned that managerial entrepreneurial competency is important ECs required by technical college students for self-employment.

Findings on Dimensions of Managerial Entrepreneurial Competencies

Based on the qualitative data, all the 15 experts stated that managerial entrepreneurial competencies play a vital role in running entrepreneurial activities as fundamental

sources to get profit and influence administrative behavior. Therefore, providing students with managerial competencies is one of the basic requirements of producing students with leadership ability that will lead them to become prospective entrepreneurs. Therefore, they stressed that the managerial competencies should be given specific attention in an attempt to achieve long-term prosperity.

Consequently, the experts advocated that business plan and decision making as very important managerial competencies should be involved when considering ECs level. In his part expert ER10, emphasizes the need for business plan in entrepreneurship *“proper planning, without planning your business on how to start where to start and so on you will end missing the road.”* While on the issue of decision making, they reiterated that *“selection between alternatives, sensitized, undertake analysis, evaluate and select the logical choice are very crucial for a good manager.”* It has been understood that decision making is a fundamental part of modern management. Therefore, it is one of the specific components of managerial entrepreneurial competencies for the integration in the ECs model for technical colleges in Nigeria.

Experts ER1, ER2, ER3, ER4, ER5, ER6, ER7, ER8, ER9, ER10, ER11, ER12, ER13 and ER14 had a common comprehension about the importance of technical know-how skills in entrepreneurship, and directly stated that “you see, one cannot just wake up to start a business without the knowledge of that trade and it is the knowledge that you have either formally or informally that will make

you to start the business.”, further they stressed that “*it elucidate new venture creation in order to bring out total personality trait, skills and knowledge ability in performing successful job role. It also involves the will to build up and make unilateral decision that will accumulate effect in various aspects of development process of the country.*”

Dimensions	Respondents: ER1 – ER15															%
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Business	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	100
Decision	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	100
Technical	√	√	√	√	√	√	√	√	√	√	√	√	√			93
Interpersonal	√	√	√	√	√		√	√		√	√	√	√	√	√	87
Communication		√	√	√		√	√		√	√	√	√	√	√	√	80

Table 2 Summary of important Dimensions of Managerial Entrepreneurial Competencies

Thirteen out of the fifteen experts referenced the interpersonal relationship skills and stressed that “Start-up ventures having

combination of the above variable will attract and maintains customers in the business of any entrepreneur because managerial competencies

will result in creating awareness over a wide horizon, and customer relation competencies will attract people because of excellent human relation.”

For the communication skills, it is worthy to be mentioned that the experts agreed on the specific importance of this dimension of managerial competency, “*effective communication, because one have to communicate with the people you are dealing with, as customers. In fact, having good communication skills is probably the most important skill of all, for managers.*” This is in line with the findings of [38] indicates that communication is one of the important skills and characteristics necessary to successfully conduct venture start-up by student upon graduation.

To sum up, the experts presented common perspectives and understandings of the importance of managerial entrepreneurial competencies for technical colleges. Table 2 presented the outcome of the analyzed data by the researchers. It indicated that there was congruence between experts’ views and opinions about selecting the important managerial entrepreneurial competencies.

DISSCUSS

Managerial Entrepreneurial Competencies

Managerial entrepreneurial competencies are set of knowledge, skills and attitudes required by technical college students to become an outstanding leader in running an established business for the enhancement of management performance. Managerial entrepreneurial competencies are found to be positive and significant components of ECs required by the students to establish new businesses, since the students are expected to become business leaders in the future. In fact MEC are specific individual competencies which aid an individual to become an excellent manager, example of such are specific knowledge, abilities, skills, traits, motives, attitudes and values necessary to improve management performance [13]. This is supported by [14] who affirmed that management performance based competencies are assessed through observed behaviors. It is imperative to include MEC among the ECs required by technical college students because they contribute significantly to career success and entrepreneurship activities. Consequently, [18] identifies MEC as an important aspect needed for early growth business.

The interview participants strongly advocate for MEC by stressing that: “managerial entrepreneurial competencies play a vital role in running entrepreneurial activities as fundamental sources to get profit and influence administration behavior (ER1, ER2, ER15). Likewise, (ER2, ER3, ER14) stress that Managerial competencies should be given specific attention in an attempt to achieve long-term prosperity. This is in agreement with [39] who affirmed that providing students with managerial competencies is one of the basic requirement of producing students with leadership ability that will lead them to become prospective entrepreneurs. Therefore, management ability is significant for the development of students’ leadership skills as the students are expected to establish their own venture upon graduation; hence this recommendation should be put into consideration. Consequently, the experts highlighted the most important dimensions of the MEC required by technical college students for self-employment that should be included into the ECs model in this study. These are business plan, decision making, technical know-how, interpersonal relationship and communication.

The experts advocated that “*business plan is a very important managerial competency that should be involved when considering ECs level.*” In his part expert ER10, emphasizes the need for business plan in entrepreneurship “*proper planning, without planning your business on how to start where to start and so on you will end missing the road.*” This finding is in agreement with [43] who emphasizes the necessity of business plan ability as an important aspect for every entrepreneur. It has been understood that planning is one of the fundamental aspects of modern business, without good and timely planning, a business can easily break. Therefore, it is vital in this study to include business plan in the ECs model required by technical college students in Nigeria for self-employment. Similarly, [44] affirmed that business plan is one of the most important MEC found worthy for inclusion in their entrepreneurial program.

While on the issue of decision making the experts reiterated that “selection between alternatives, sensitization, undertake analysis, evaluate and select the logical choice are very crucial for a good manager.” From the view of the experts it is clear that decision-making in a business setting is important for a business to prosper. This finding is in agreement with [44]

who asserted that ability to make decision was found to have a vital role as an entrepreneurial skills in solving managerial problems in a business setting. Therefore, since we are committed to have a ECs model that would cater for the technical college students who become novice entrepreneurs as well as in turn metamorphoses to managers of their ventures; so, decision making is vital for inclusion in this work; ECs model for technical college programs. The findings are also concurred along with that of [39] who confirmed that decision-making is vital skill required by technical college students to become an entrepreneurial managers. Consequently, [36] found that decision making is one of the fundamental skill required by an entrepreneur as a manager. Therefore, it has been understood that decision making is a fundamental part of modern management. Hence, it is one of the dimensions of managerial entrepreneurial competencies for integration in the ECs model for technical college programs in Nigeria.

The experts had a common comprehension about the importance of technical know-how in entrepreneurship, and directly stated that “you see, one cannot just wake up to start a

business without technical know-how. The knowledge of that trade is the knowledge that you have either formally or informally that will make you to start a business.” (ER1, ER3, ER5). Further they stressed that “*it elucidate new venture creation in order to bring out total personality trait in performing successful job role.*” This finding is in line with the assertion of [35] who found that technical know-how is one of the most important barriers to entrepreneurship entry that limit the number of emerging entrepreneurs. Consequently, [45] conducted a comparative study between Russian and US entrepreneur; found that technical know-how is the main basis of intellectual capital for entrepreneurs. Based on the conclusion it is worthy to include technical know-how as a skill required by technical college students in setting up their own business upon graduation to become prospective entrepreneurs for self-employment.

Interpersonal relationship is another vital entrepreneurial skill required by technical college students to start up their own venturing. This had been stressed by the experts such as (ER1, ER3, ER5, ER7 and ER14) start-up ventures having combination of the MEC dimensions will attract and maintains customers in the business of any entrepreneur

because managerial competencies will result in creating awareness over a wide horizon, and customer relation competencies will attract people as a result of excellent human relation. This is in confirmation with [39] who recommended interpersonal skills as one of the key driver competencies, and could be best developed through the use of new educational approaches. Consequently, [46] affirmed that interpersonal skills influence financial and non-financial performance of a business.

For the communication it is worth mentioning that the experts agree on the importance of this dimension in managerial competency, for instance, ER2, ER7 and ER15 stated that *“effective communication, because one has to communicate, with people he is dealing with as customers, in fact, having good communication skills is probably the most important skill of all, for managers.”* This is in line with the findings of [37,38] indicates that communication is one of the most important skills and characteristics necessary to successfully conduct venture start-up by student upon graduation. Likewise, [39] affirmed that communication skills improved ECs structure. Therefore, communication ability

is one of the important skills needed by an entrepreneur in modern leadership. It is worth concluding that communication skills should be among the required dimensions of ECs model by technical college students for self-employment.

To sum up, the experts presented common perspectives and understandings of the importance of MEC required by technical college students for self-employment. Likewise, the findings are concurred with the above-mentioned literature. Finally, these results indicated congruence between experts' views and opinions about selecting the important managerial entrepreneurial competencies. Therefore, to achieve long-term prosperity and sustainable entrepreneurship managerial competencies should be given specific attention, so that it should be included in the ECs model for technical college programs in Nigeria.

CONCLUSION

Despite the importance of entrepreneurial training to technical college students, ECs have not reflected in the curriculum of the colleges. Therefore, there is no any entrepreneurial course at the technical college level because it is out of the syllabus. As such the present

technical college curriculum consists only the technical skills thus is too scanty for the production of technicians with an entrepreneurial attitude who can create job opportunities and self-employment upon graduation. As a consequence, technical college students lack appropriate training of entrepreneurship that will enable them acquire desirable and relevant competencies needed for job creation and self-employment. Therefore, it is imperative to identify managerial entrepreneurial competencies for self-employment that would enable the development of a conceptual model for effective integration at the technical colleges to allow the students obtain both technical and entrepreneurial skills. The study recognized the need for integrating ECs into technical college programs curriculum for self-employment and thereby analyzed documents on MEC to identify key competencies required for integration into the curriculum. Subsequently, the researchers conducted semi-structured interview with the experts from both the technical teacher and the SMEs entrepreneurs to verify the findings theoretically discovered in the document analysis. The **findings** revealed the important competencies required for

integration business plan, decision making, technical know-how, interpersonal relationship and communication.

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