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Innovation hub a venture for students' entrepreneurial talents: a case of college of business education

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ABSTRACT

Worldwide, unemployment is a challenging aspect that faces most of graduate students. Based on that, students in colleges and universities currently know that they have to engage in self-employment through entrepreneurship. Moreover, establishing innovation hubs during collaging has propounded to help bring different entrepreneurial and creativity traits among students. Apart from performing incubation of the business ideas, the innovation hubs could be a free innovative centre where students, stakeholders, lecturers, and alumnae meet, work, and collaborate on the range of innovative augmented ideas to stimulate entrepreneur intention. Colleges and universities do not have a proper plan to expose students to practical business environments while studying. Therefore, through mixed research design, this study entails designing and developing a participatory contextual model that will enhance the College of Business Education to establish a free space as the innovation hub for incubating talents, entrepreneurial ideas and research focused on solution-based for students and lecturers. A total of 132 respondents consisting of 20 instructors; 100 students and 12 entrepreneurial practitioners were involved in this study. Data was collected through questionnaires, in-depth interviews, Focus Group Discussions (FGD) and documentary review. The obtained data were analysed through descriptive statistics and thematic content analysis. Based on the findings, it is evident that establishing an incubation and innovation hub within the CBE community is necessary. The findings provide valuable insights into the participants' perceptions and highlight various aspects that should be considered during establishing and implementing the hub. Moreover, the findings stipulate that the incubation and innovation hub should incorporate the prototype environment that includes mindset change programmes, regular training, internship programmes, effective incubation practices, strong mentorship and coaching programmes, and a clear exit strategy that can enhance incubates' entrepreneurial skills and capabilities.

Introduction

Statistics show that more than 1,470 new job entrants in the years 2016 to 2030 (United Nations, 2020). However, the opportunities in business and entrepreneurship became important in generating and accommodating a large number of college and university graduates hence contributing to societal changes, nations as well as the global economy (Gbato, 2017). Likewise, a globalized business environment is characterized by an increasingly dynamic and competitive setting. This necessitates innovation to become a prerequisite for survival rather than a means of getting ahead of competitors (Lantz & Wu, 2017; Kim *et al.*, 2020). Therefore, unemployment and a competitive business environment ascend the need for colleges, and universities to become innovation hubs (Comins & Kraemer-Mbula, 2016). According to Surana, Singh & Sagar (2020), there is a need for developing a clear framework to emphasize the need of defining the start-ups' goals, coordination, embrace the performance monitoring systems and multi-phase capacity buildings. The practices in developed countries such as Italy proves that incubation and innovation start-up are significantly less in job creation although have a positive effect on increasing sales revenues in long terms and attainment of societal goals (Lukeš,

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Longo & Zouhar, 2019; Saka-Helmhout *et al.*, 2021). Yet, star-ups, incubation and innovation hubs are considerable mechanisms employed in developing countries for implementing Sustainable and Development Goals (SDGs). For example, Surana, Singh & Sagar (2020) and Kavita *et al.*, (2020) disclosed that in India the strengthened entrepreneurship incubation systems linked with SDGs targets promote the attainment of societal goals, promoting coordination and ensuring the presence of a clear monitoring system.

In Africa, most of youth particularly graduates seek jobs but could not be employed in public sectors (Dzomonda & Fatoki, 2019) and youth rely on the public-private employment syndrome of waiting to be employed. The Africa Development Bank report (2016) showed that jobs are not generated as fast as the population is growing. The complications related to unemployment raise the need to build a direct and dynamic relationship between academia and industry. The relationship has to focus on building the ability to provide practical solutions and innovations to solve social-economic challenges (Nyemba, Mbohwa & Carter, 2021).In Tanzania, the efforts are witnessed through establishing the incubation policy for enhancing entrepreneurial intention to operationalize and ensure the sustainability of youths and street vendors businesses (Mramba & Mhando, 2020; Steiler & Nyirenda, 2021).

The practices in Tanzania delineate that the universities and colleges have streamlined incubation and business training as part of the curricula to catalyse the entrepreneurial intention of students henceforth employability after graduating. A few cases are considered as examples, Small Industries Development Organization (SIDO) and COSTECH are champions in boosting entrepreneurial and innovative start-ups and hubs; there are ongoing initiatives at the University of Dar es Salaam (UDSM) via the Directorate of Innovation and Entrepreneurship (UDIEC); Institute of Accountancy Arusha (IAA) engage in identifying and incubating business start-ups; and the College of Business Education (CBE) is not far behind as initiatives for enforcing students to change mindset towards entrepreneurial readiness, develop business ideas, screening and financing are on board although there is no identified hub whereas start-up will be incubated as well as holistic framework as the lens to guide the operationalization. The establishment of innovation hubs in colleges or universities entails to enforce students to develop innovative competition catalysed instructors to mentor at the same time foster new competitive action researches ascertained in the provision of social-economic solution (Kohlers, 2016; Weiblen & Chesbrough, 2015). Furthermore, the operationalization of innovation hub comprising with productive and resourceful incubation start-up requires project management principles as Pertuz and Pérez (2021) cited that entrepreneurial idea generation techniques, concentration in changing products, process improvements and fundamentals of project management as well as human innovative talents are ideal in entrepreneur ventures succession.

'Hubs' are a new type of min-organization essential for incubating entrepreneurship careers (Dzomonda & Fatoki, 2019); enabling technologies, digital and social innovation, mentorship (Sambuli & Whitt, 2017). Moreover, innovation hubs used to connect partners such as investors, mentors, government, and students to mention few (Sambuli & Whitt, 2017; Jiménez & Zheng, 2018). Consequently, communication patterns in the hub are flat to foster systems of connections that put individuals, firms, start-ups, incubators, and accelerators together to transform innovative ideas into technologically feasible solutions (Wu & Lantz, 2017; Giaccone & Longo, 2016). According to Paula (2018); incubation hub is a free active innovation space platform of the local network facilitating getting insight innovative ecosystems. Within the hubs, the entrepreneurial intention and diffusion of innovation are stimulated (Bodalica & Spraggon, 2021). The hub is characterized to be an open tenant to build entrepreneurial-talents ecosystems for promoting new business ventures contributing to the economic growth (Theodoraki, Messeghem & Audretsch, 2021). According to Zouhar (2016) new business and innovative start-ups are experiencing faults of lacking internal resources such as human capital, financial capital and social capital replicated as obstacles for taking in entrepreneurial ventures. Moreover, incubation necessitates connecting colleges and universities to a network of experts who will provide technical, material and financial supports to apprehend the competitive spirits across the course and programme performance (Dobbs, Mwanyika, & Woetzel, 2016; Sambuli & Whitt, 2017).

Global, regions and countries unemployment status conflict to colleges and universities practices whereby youth graduate follow into self-entrepreneurial-employment (Rakthai, Aujirapongpan & Suanpong, 2019; Aruleba & Adediran, 2022). Due to the practices gaps colleges and university are required to change the practices of attaching students to internships and field work to practice what has already been established instead focus to induce innovative entrepreneurial competencies (Theodoraki, Messeghem & Audretsch, 2021). However, advocated curriculum related gaps in appropriate procedures, approaches for fostering creativity, problem-solving, innovation skills research and development are principally core functions in most colleges and universities (Wu & Lantz, 2017; Rinkinen & Harmaakorpi, 2018; Vardhan & Mahato, (2022). It is for these reasons that colleges need to change the focus of curriculum implementation towards inculcating students originated innovative entrepreneurial ideas, thereafter incubate these entrepreneurial ideas to become real start-ups projects within and outside innovation hubs (Friederici, 2019; Giaccone & Longo, 2016; Hausberg & Korreck, 2018). Despite of having numerous literatures on innovation and incubation hubs (Comins & Kraemer-Mbula, 2016; Dzomonda & Fatoki, 2019; Hausberg & Korreck, 2018), the researchers found the presence of limited information on the practical and documented prototype of incubation hub that is connected with normal academic courses offered in colleges and universities. Therefore, this paper focuses on developing a prototype to guide the establishment of innovation hub as a venture for students and lecturers to develop, share and collaborate in entrepreneurial talents at the College of Business Education. Thus, a mixed research design was employed, in which instructors, students and entrepreneurial practitioners were involved in the data collection. The data were collected through questionnaires, in-depth interviews, Focus Group Discussions (FGD) and documentary review for triangulation of results.

This paper is organized as follows: following the introduction part, a second part is a literature review with theoretical and empirical studies that shed a light on linkage between theory and practice. The third part introduces the background information on research

and methodology. After analysis and findings of the study, authors provide discussions and implications. Finally, this paper concludes with key points, recommendations, future research directions and limitations.

Literature Review

Theoretical Review

The open innovation theory was engaged as a holistic lens for conducting need assessment as well as developing a holistic model whilst to be integration in CBE curriculum in developing multi-entrepreneur talents through provision of knowledge, skills and competencies.

Open Innovation Theory

In developing innovation hub, as a venture for students' entrepreneur talents, the open innovation theory developed by Henry Chesbrough in 2003 was considered as the theoretical lens in understanding different attributes of the study (Hausberg & Korreck, 2018). The paradigm inaugurated on the use of external and internal ideas (Jarvenpaa, 2011; Wu & Yang, 2018), markets as well as technology advancement to foster innovation and incubation of entrepreneurial start-ups (Cooke, 2017; Russell & Smorodinskaya, 2018; Battistella, De Toni & Pessot, 2017). The theory insists on the employability of inflows and outflows of knowledge for internal innovation acceleration, and external markets innovation network paths and ecosystems (Dougherty, 2017). Consequently, Hausberg and Korreck (2018) addressed that hub embraces innovation network to involve heterogeneous and autonomous mediators including innovators, competitors, suppliers, research centres, whose interact through collaboration to develop and pursuing the common entrepreneurial goals, exploiting and commercialization.

Holistic model for establishment of innovation hubs

The models for establishing college-based innovation hub are not far from other models (Macchi, Rizzo & Ramaciotti, 2014; Soetanto & Jack, 2018) as students will be exposed to new attractive venture for tangible entrepreneurial and business opportunities. The articulated aspects for consideration of the college incubation model is ascertained on the provision of basic business support services, facilities, free meeting space for tenant start-up teams to communicate; collaborate; innovate; create linkages with experienced entrepreneurs; other college based start-up teams for exchanging knowledge, experiences, contacts, and resources (Cooke, 2017); professionals specialized in intellectual property, financing, strategic and managerial issues (Blok, Thijssen & Pascucci, 2017; Stephens & Miller, 2022).

Moreover, the model focus is on equipping the students with multi-skills obtained due to multiple connections (Russell & Smorodinskaya, 2018). Further, (Battistella, De Toni & Pessot, 2017) asserted that, due to networking and collaboration tenant's start-up in the innovation hubs will be in position of being facilitated to generate new ideas, transform intangible augmented ideas into marketable innovative assets henceforth knowledge transfer. The composition of start-up teams has to be open across the programme to enable simulation of inflow and outflow of entrepreneurial and technical knowledge across the incubated units within the innovation hub boundaries (Gupta *et al.,* 2016; Soetanto & Jack, 2018)

Empirical Review

Tidd and Bessant (2013) defined innovation as the ability to see connections, draw opportunities and take advantage of deploying better solution, unarticulated needs, and existing market needs achieved by effective products, processes, technologies and business models. That instance makes innovation hubs to works as networking platform to blend diverse range of competences among the practitioners to improve innovation process (Wu & Lantz, 2017). The open innovation within the hubs usually accelerates problem solving skills, enables entrepreneurial idea generation leads to quality innovations, enhance informal communication, knowledge sharing and open collaboration (Giaccone & Longo, 2016; Sharma & Bhatt, 2022).

Certainly, organized student's start-up teams within innovation hubs are offered powers to be exposed into market dynamics and business-related technical uncertainties, design creating solutions through learning, develop the potential businesses and create partnership links (Gupta *et al.,* 2016; Chesbrough, Vanhaverbeke & West, 2006). Consequently, the colleges and universities need integrative framework that nexus Private-Public Partnership (PPP) into innovation hub for collaboration, resources provision, share best practices for entrepreneurial and business prospects (Juma *et al.,* 2017; Kim et al., 2020), and expose new college tenants on the expected risks and resilience mechanisms (Quelin *et al.,* 2019; Lashitew *et al.,* 2020).

Researchers such as Saka-Helmhout *et al.* (2020) and De Silva *et al.* (2019) insisted on sustainable business model that takes at least three years for materialization of innovation outcomes of the new project ideas. In Colleges, students are new entrepreneurs who could work in the teams thus needs to experience the entrepreneurial knowledge, supportive experimentation and interdependences practices environment and learn developing own entrepreneur business start-ups (Blok, Thijssen & Pascucci, 2017; Gupta *et al.,* 2016). Further, Sharma & Sharma (2021) pointed out that the Colleges and universities need to revelt in training modalities whilst inculcating students with highest efficiency, entrepreneurship and creativity levels.

Establishment and development of hubs, is beneficial to the colleges for enhancement changes in practitioners' mindsets towards developing enriched action researches and development that are originating from the contextual practices (Chirchietti, 2017; Lantz

& Wu, 2017). Still, well established innovation hubs have capabilities to nurture entrepreneurship competences, innovative, creativity, and collaboration skills among instructors and students with the same entrepreneur treats (Giaccone & Longo, 2016; Hausberg & Korreck 2018). Similarly, the hubs are nexus points whereas instructors and students meet for practical mentorship, incubate the entrepreneurial ideas to tangibility, bridge the innovative, technical and materials gaps by triangulating the community towards large entrepreneur-business ventures for sustainable development (Friederici, 2019; Chirchietti, 2017; Kullur, 2023).

The university and college incubation hubs are having clear mentorship and are proven to be a catalyst in developing readiness, grooming and promoting to scale-up new sustainable businesses and entrepreneurs. Scholars in Singapore proves that students learning should be beyond academic sphere but need to change perspectives towards research and development, capacity-building, acceleration (incubation) program focusing into preparing graduates to foster creativity and innovative business ideas that works as start-ups ecosystems under the hub (Cheah et al., 2016; Cheah & Ho, 2019). In addition, the universities and colleges engaging in grooming entrepreneurial talents initiate the responsibility of solving socio-economic problems as current students are future human capital (Kumari, et al., 2019; Ünal, Başaran, & Bektaş, 2022).

Methodology

At this juncture, the approach, procedure and methods for sample selection, data collection and analysis are presented. The participant characteristics, sampling procedures, sample size, power and precision, measures and covariates, as well as research design are described herein.

Participant (Subject) Characteristics

This study was conducted at CBE-Dar es Salaam campus. The area is selected as is engaged in incubation of entrepreneurial and business ideas from students without having a real holistic prototype model for developing a hub as the working space. The study in hand involved categorical participants selected from CBE and other stakeholders as practitioners of innovation through incubation and entrepreneurial starter-up operations out of CBE. The study articulated the internal participants from CBE particularly the instructors and students engaged in developing business ideas without financial capabilities and entrepreneurial competences. Further, counterpart external participants are stakeholders engaged in entrepreneurial operations and SUGECO as dealers of agricultural innovation hub for grooming youth entrepreneurship assisted in exploration of experiences persisting provision of key cases of study interests. The selected external participants enabled to get insights about innovation hubs, starter-ups and incubation requirement cases that were used as inputs in developing the holistic approach as well as prototype to suit academic practices.

Sampling Procedures

Non-probability approach was employed during sampling process. From the CBE community possessing the population of 212 academic staff, 217 non-academic staff and 14,059 students, the researchers chose the respondents who are dealing with incubation practices. Moreover, although the approach is non-probability there was an equal chance for homogeneity population to be selected. The purposive or convenient sampling procedures enabled the selection of the sample articulating to provision of reliable and valid data reflective to meet the research objectives. The researchers requested the sample respondents for voluntarily participation through filling a consent form to engage in providing data. Moreover, all ethical considerations concerning the respondents and area of the study was taken into consideration.

Sample Size, Power, and Precision

The sequential study that embraced quantitative then qualitative design needs the moderate sample size. However, involvement of the heterogeneity sample size enhances reliability of the findings. Based on time constraints and limited resources it is difficult to conduct the study involving the population size of 14,488 distributed into 212 instructors, 140,59 students from departments and 217 other stakeholders. Besides, convenient sampling procedure that were involved in selecting categorical sample size. The study targeted respondents who are involved in incubation program at CBE i.e. incubation practitioners, CBE instructors and students. A total of 132 respondents were involved in this study in the combination of; 20 instructors (five screening committee members appointed from each CBE campus, 100 students from all academic departments submitted their business idea through incubation programs and 12 incubation practitioners (three appointed external members to join screen committee from each CBE campuses). However, based on nature of study aims at developing the incubation hub conceptual model, required the researcher to involve in site visiting at SUGECO one of the successful incubations to enrich the findings, and gain experience. The data collection tools were administered to each of the sample category without replacement based on data requirements. Further, the selected sample size was exhaustive in enriching the findings, being categorical reduced the errors and foster flexibility in data collection as well as analysis.

Measures and Covariates

The study in hand being mixed in approach was embraced by setting the line of demarcation of the quantitative and qualitative in data collection phase whereby, researchers collected quantitative data through questionnaire. The qualitative data were collected through; interview, focus group discussion and documentary review, thereafter, thematic content analysis was carried out (Williams *et al.,* 2019).

Research Design

This study applied a mixed research design (Cresswel, 2016) specifically explanatory sequential mixed method. Under this design researchers started with quantitative design then followed by a qualitative as shown in figure 1.

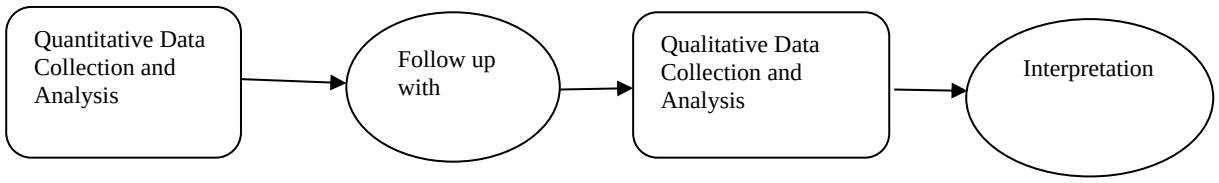

Figure 1: Sequential Mixed Research Method

The researchers employed a case study approach to carry out the investigation based on contextual relevant condition of the studied phenomenon (Yin, 2009, (Creswell & Poth, 2016). This approach stands from broad assumptions to detailed methods of data collection and analysis. Researchers found items as pinpoints from quantitative findings then used them for detailed qualitative data collection to come up with holistic model of incubation and innovation hub.

Findings and Discussions

Needs assessment for the establishment of incubation and innovation hub for CBE community of practice

The findings support the need for the establishment of an incubation and innovation hub for the CBE community. Participants generally expressed agreement regarding their awareness of the hub's activities. This indicates that there is some existing knowledge or communication about the hub among the participants. However, their knowledge of the hub's requirements was found to be at a moderate level, suggesting the need for further clarification and information dissemination to ensure a clear understanding among the community (see Table 1).

The participants strongly agreed on several key aspects that are essential for the effectiveness of the innovation hub. Firstly, there is a recognized need to identify start-ups and innovative approaches based on the context. This demonstrates an understanding that context-specific solutions and ventures can have a significant impact. Secondly, there is an agreement on the importance of creating innovative competencies in academic institutions. This aligns with the recognition that nurturing an innovative mindset and skill set within the educational environment can lead to a more entrepreneurial and creative workforce. Additionally, the participants emphasized the need to link students' innovative competencies with market requirements. This suggests an understanding that aligning education with industry demands can enhance students' employability and entrepreneurial potential. Moreover, the participants acknowledged the need to focus on new innovative opportunities for future self-employment. This indicates a desire to foster a supportive ecosystem that encourages entrepreneurial endeavours and self-employment among students and graduates.

Table 1: Needs Assessment (N = 132)

Statements	Mean	Std. Dev
I am aware of the activities of the Innovation Hub	1.53	.914
I know the requirements of the innovation hub	2.03	1.043
There is a need to identify start-ups and innovative approaches	1.57	.827
There is a need to create innovative competencies in academic institutions	1.30	.734
There is a need to link students' innovative competencies with the market drive requirements	1.26	.717
There is a need to focus on new innovative opportunities for future self-employment	1.33	.731
There is a need to shift training practices towards solution-based perspectives	1.36	.891
There is management support for the establishment of the Innovation hub at CBE	1.42	.940
There is stakeholders' support in the establishment of the innovation hub in CBE	1.32	.834
There is students' readiness in engaging in innovative and entrepreneurial activities	1.35	.782
There is a need to use technology to speed up students' entrepreneurial ideas in the market	1.42	.940
There is a need to equip the innovation hub with resources that will assist in grooming incubates entrepreneurial abilities	1.46	.961
The innovation hub should use ICT to ensure easy access to information about businesses, opportunities and ideas.	1.32	.768

The findings also highlight the importance of shifting training practices towards solution-based perspectives. This reflects an appetite for more practical and problem-solving-oriented training methods, enabling individuals to apply their skills and knowledge to real-world challenges. Furthermore, participants recognized the need to leverage technology to speed up students' entrepreneurial ideas

in the market. This underscores the role of technology as a catalyst for innovation and the importance of equipping students with the necessary technological tools and skills to succeed in the entrepreneurial landscape. Likewise, the respondents emphasized the significance of equipping the innovation hub with resources that assist in grooming incubates' entrepreneurial abilities. This underlines the importance of providing the necessary infrastructure, mentorship, funding, and other resources to support and nurture aspiring entrepreneurs.

The findings also indicate that students' readiness in engaging in entrepreneurial activities and the support from the management of the College and other stakeholders are crucial considerations for the establishment and implementation of incubation hubs. This suggests that involving students and garnering support from key stakeholders will be vital for the success of the innovation hub.

Moreover, through a follow-up on a qualitative design, the respondents through interviews and focus group discussions revealed that establishing incubation and innovation hubs within high learning institutions can be highly important and beneficial. Since, these hubs provide a supportive environment for fostering creativity, innovation, and entrepreneurship among students and faculty members. The respondents acknowledge that these hubs play a crucial role in encouraging innovation. By providing a supportive environment, resources, and mentorship, they enable students and faculty members to explore new ideas, experiment with different approaches, and push the boundaries of knowledge and creativity. This fosters a culture of innovation within the institution, leading to breakthrough discoveries and advancements. Moreover, they stipulated that incubation and innovation hubs are instrumental in fostering entrepreneurship by offering guidance on business planning, market research, and funding opportunities, to empower students and researchers to transform their innovative ideas into viable startup ventures. This not only cultivates an entrepreneurial mindset but also contributes to job creation, economic growth, and societal impact. Some of the respondents reported that;

"….These centres act as intermediaries between academia and industry, creating avenues for knowledge exchange, research partnerships, and technology transfer. Such collaborations benefit both academia and industry by driving practical solutions, commercialization of research, and industry-relevant skill development" (Interview: Participant no. 3).

"The incubation and innovation hubs offer valuable opportunities for skill development. Through workshops, training programs, and hands-on projects, students can enhance their problem-solving abilities, teamwork skills, communication, and leadership capabilities. These practical skills go beyond theoretical knowledge and are highly sought after by employers in the job market" (Interview: Participant no. 5).

"….By nurturing startups, attracting investment, and supporting entrepreneurship, these centers contribute to job creation, stimulate local economies, and foster innovation-driven growth. Successful startups that emerge from these hubs can become key players in their industries, driving economic development and generating further opportunities" (Focus group discussion: Participant no.2).

The respondents' responses highlight the positive impact of incubation hubs on fostering innovation, entrepreneurship, industry collaboration, skill development, and economic growth among students. Thus, creating a need for their establishment to provide a supportive ecosystem for students, and contribute to the overall development and success of individuals, the institution, and the broader society.

These study findings align with some previous studies by (Dahlstrand & Berggren, 2010; Lerro & Schiuma, 2022; Mgaiwa, 2021; Secundo, Mele, Passiante, & Albergo, 2021) which suggested that incubation and innovation hubs should be established for the sake of creating and developing entrepreneur mind-sets among students while considering its configuration with respect to the market requirements, innovation, leverage of technology, shifting of training practices, and fully engagement of key stakeholders.

In conclusion, the findings confirms the need for an incubation and innovation hub within the CBE community. The findings provide valuable insights into the participants' perceptions and highlight various aspects that should be considered during the establishment and implementation of the hub, such as contextual identification, innovative competencies, market alignment, self-employment focus, solution-based training, technology utilization, and resource provision. These findings can inform the development of strategies and initiatives to effectively support innovation and entrepreneurship within the CBE community.

Develop the holistic model (Prototype) for the establishment of the incubation and innovation hub suiting CBE community

The given quantitative data consist of responses to a set of statements about the role and assistance to be provided by an incubation and innovation hub. The responses are measured on a scale from 1 to 5, where 1 represents strongly agree and 5 represents strongly disagree. The findings indicate that the respondents strongly agreed that the incubation hub should be formed in a prototype that will enable the incubates to develop knowledge and skills or get access to the following aspects; marketing and business management, networking with partners, provision of internet access, access to finance, venture capital, and guarantee programs, technology commercialization, development of competitive and viable ideas, development of innovative solutions and accounting and financial management abilities (see Table 2).

Table 2: The Holistic Model for Incubation Hub (N = 132)

Statements	Mean	Std. Dev
The incubation and innovation hub has to assist incubates in marketing and business management	1.42	.881
The incubation and innovation hub has to assist incubates in networking with partners	1.50	.971
The incubation and innovation hub has to assist incubates in the provision of internet access	1.49	.862
The incubation and innovation hub has to facilitate access to finance, venture capital, and guarantee Programs	1.34	.840
The incubation and innovation hub has to advise boards, mentor/coach, and technology commercialization	1.42	.851
The incubation and innovation hub has to help incubates to develop competitive and viable ideas	1.56	1.086
The incubation and innovation needs to help incubates in developing a prototype	1.42	.940
The incubation and innovation needs to help incubates in establish and manage business	1.45	1.023
The incubation and innovation hub has to assist academic staff to shift the paradigm from descriptive to action, and design science research based	1.47	.943
The incubation and innovation hub should help incubates with accounting and financial management abilities	1.43	.921

Moreover, the interviews and focus group discussions were conducted to gather insights on the creation and development of an effective incubation and innovation prototype. The respondents highlighted several key features that should be featured in the prototype, which include the following;

Mindset change programmes: The respondents emphasized the importance of mindset change programs. This likely refers to initiatives aimed at shifting the mindset of incubates and encouraging them to embrace an innovative and entrepreneurial mindset. Such programs can help individuals develop a proactive and problem-solving attitude, which is crucial for successfully navigating the challenges of innovation and entrepreneurship.

Provision of regular trainings: Regular training programs are seen as essential for the development of an effective incubation and innovation prototype. These training sessions can cover various aspects, including business management, marketing strategies, technological advancements, and other relevant skills. By providing ongoing training, the incubation and innovation hub can enhance the knowledge and capabilities of incubates, equipping them with the necessary tools to succeed.

Availability of internship programmes: The availability of internship programs indicates a focus on practical learning and hands-on experience. Internships can offer incubates the opportunity to work in real-world settings, gain exposure to industry practices, and apply their knowledge and skills in a practical manner. Internship programs can bridge the gap between theoretical knowledge and practical application, fostering the development of future entrepreneurs.

Incubation practices: The data suggests that effective incubation practices are crucial for the creation and development of an incubation and innovation prototype. This likely refers to the processes, methodologies, and support mechanisms provided by the incubation and innovation hub. These practices may include networking opportunities, access to resources, guidance in product development, and assistance in business planning. Implementing well-defined and structured incubation practices can significantly contribute to the success of incubates.

Formulation of strong mentorship and coaching programmes: Mentorship and coaching programs are identified as key features for the effective creation and development of an incubation and innovation prototype. Having experienced mentors and coaches can provide valuable guidance, advice, and support to incubates. Mentors can share their expertise, provide industry insights, and help in refining ideas and strategies. Strong mentorship and coaching programs can accelerate the growth and development of incubates, increasing their chances of success.

Overall, the discussions highlighted the significance of mindset change programs, regular trainings, internship programs, effective incubation practices, and strong mentorship and coaching programs for the creation and development of an incubation and innovation prototype. The findings are supported by previous studies such as (Bae & Choi, 2021; Li, Ahmed, Qalati, Khan, & Naz, 2020; Lyken-Segosebe, Montshiwa, Kenewang, & Mogotsi, 2020). In respect to the abovementioned discussions, some of the respondents were quoted as follows;

"…. It is very difficult to implement incubation practices in absence of mindset change programmes, due to the fact that entrepreneurship is about identifying and solving problems. A mindset change programme can foster a problem-solving mindset among participants, encouraging them to approach challenges with a solution-oriented mindset….". (Interview: Participant no. 7).

"Without the provision of trainings to incubates in incubation and innovation hub, individuals may experience a lack of new knowledge and skills development. This can result in a stagnation of their abilities and limit their capacity to adapt to changing industry trends, technological advancements, and market demands. In rapidly evolving fields, such as technology or business, staying

up-to-date with the latest practices and techniques is crucial for remaining competitive". (Focus group discussion: Participant no. 10).

Moreover, the respondents emphasized the development of clear exit strategy as it helps to set a timeframe and milestones for achieving the desired exit. It provides a timeline within which entrepreneurs or incubates can work towards specific goals and objectives. This helps create a sense of accountability and focus on reaching key milestones that are critical for the successful execution of the exit strategy.

".....An exit strategy requires careful planning and consideration of the long-term goals and objectives of the startup. It prompts entrepreneurs to think about the direction they want to take their business and how they plan to achieve their desired outcomes. By defining an exit strategy, entrepreneurs can align their decisions and actions with the ultimate goal of exiting the business in a way that is most beneficial for all stakeholders involved…." (Interview: Participant no. 5).

Therefore, the colleges and universities by incorporating the above-discussed features, can create incubation and innovation hubs that enhance the entrepreneurial skills and capabilities of incubates, foster a culture of innovation, and contribute to their long-term success.

Conclusions

In conclusion, based on the findings, it is evident that establishing an incubation and innovation hub within the CBE community is necessary. The research provides valuable insights into the participants' perceptions and highlights various aspects that should be considered during the establishment and implementation of the hub. These findings can inform the development of strategies and initiatives to effectively support innovation and entrepreneurship within the CBE community.

Moreover, the incubation and innovation hub should incorporate the prototype environment that includes mindset change programmes, regular training, internship programmes, effective incubation practices, strong mentorship and coaching programmes, and a clear exit strategy that can enhance incubates' entrepreneurial skills and capabilities. These features foster a culture of innovation and contribute to the long-term success of incubation and innovation hubs within colleges and universities hub should be formed in a prototype that enables incubates to develop knowledge and skills, as well as gain access to various resources and opportunities such as marketing and business management, networking with partners, finance options, technology commercialization, and development of competitive ideas.

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