

INTRODUCTION TO UNIVERSITY BASED ENTREPRENEURSHIP ECOSYSTEM (U-BEE): A MODEL CASE STUDY FROM BANGLADESH

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ABSTRACT

University Based Entrepreneurial Ecosystem is an interconnected tool to develop students' venture within the university framework. Now-a-days, a university not only plays a vital role in entrepreneurship development, but also develops a systematic process where talented graduates invent, innovate and commercialize their ideas. Encouraging university based entrepreneurial ecosystem can bring a greater change in our societies. Universities are setting institutional arrangement to support the students' venture. A University based entrepreneurial ecosystem (U-BEE) enables key ecosystem for creating innovative value to commercialize the knowledge which will help to develop enterprising communities.

This study combines literature on university based entrepreneurial ecosystem (U-BEE) and shares an entrepreneurship supporting framework applied within a university based framework. This paper indicates that university based entrepreneurial ecosystem (U-BEE) ensures the nurture of the budding businesses to transform into sustainable growth. It requires a stress on working on the innovative ideas, teamwork, appropriate mentoring, networking and strategic relationship development, funding, induction of ideas and effective training and education on venture management, that have to be provided over time. Developing entrepreneurs within the university framework will enhance the industry academy relationship and bring direct impact on new employment generation in the country. This paper recommends a supportive framework to develop, nurture, initiate and implement the idea throughout the university to effect in creating ventures.

Keywords: University, Entrepreneurship, Ecosystem, Innovation, Sustainable, Commercialization, Growth.

INTRODUCTION

Entrepreneurship is a profession by which people direct one's step in fulfilling essentials and desires through innovations and energetic handling of risks and critical situations. Entrepreneurship is not by birth; therefore it is achieved through innovativeness, calculated risk-

taking and pro-activeness (Morris & Sexton, 1996; Chowdhury, 2007). Entrepreneurial competencies may be earned through a proper educational system and training (Gibb, 1986; Romjin, 1989; Chowdhury, 2007) which may be the crucial stimulus for developing entrepreneurial attitudes among the interested group. Thus a country with conducive business environment, an entrepreneurial education system and favorable policy guidelines can go a long way in creating ventures that may generate employment.

Entrepreneurship education in Bangladesh has not been heard of in this country until 1990, when it has been started in other nations across the world. Education system of Bangladesh is teaching traditional common subjects even private universities in Bangladesh initiated a course on entrepreneurship which is more theoretical than practical. At present, employment problem is a great challenge for a densely populated country like Bangladesh. Thus entrepreneurship education and venture creation are vital for sustainable employment generation. University around the world are changing traditional education paradigm to knowledge commercialization as contributing in national economy and enhancing employment elasticity.

Therefore, Universities of Bangladesh are expected to play a role in providing skills, education, and exposure and support services as a contributing factor not only to foster but to grow entrepreneurship. That is why university based entrepreneurship ecosystem may help to nurture innovative ideas. Isenberg (2010) developed a conceptual model and provide a more comprehensive framework for the analysis of entrepreneurial ecosystems and contributed nine key elements such as human capital, markets, policy, finance, support and culture where creation of entrepreneurial human capital is a process of university and university itself can create an ecosystem by facilitating these components within university ambience and this systematic approach can generate an effective process where a university can take the first place in generating venture through developing entrepreneurial ecosystem within the university framework.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows;

1. To analyze the conceptual framework of global university based entrepreneurial ecosystem (UBEE) to find out the elementary actors within a university framework.
2. To propose a cultured UBEE framework developed by Daffodil International University to support and boost entrepreneurship in a university framework.

LITERATURE REVIEW

University entrepreneurship education is in the embryonic stage, still a new venture in itself (Hills, 1988). Universities are setting up institutional arrangements such as technology transfer offices (TTOs), incubators, entrepreneurship centers, and internal seed funds to increase the commercialization of research (Rasmussen & Sørheim, 2006; Rasmussen & Borch, 2010).

The core of university based entrepreneurship ecosystem (UBEE) is the start-ups of the students which discusses to exertions undertaken by university to generate, develop & nurture,

promote and commercialize venture within a university framework. A university-based entrepreneurial ecosystem is defined as “*multidimensional enterprises that support entrepreneurship development through a variety of initiatives related to teaching, research and outreach*” (Greene et al., 2014; Entezari, 2015) and offers a comprehensive picture of university-based entrepreneurial ecosystems which takes practical as well as theoretical aspects into account (Fetters et al., 2010; Entezari, 2015). Wilson et al. (2009) has mentioned that the university is expected to promote entrepreneurial thinking and act through various activities and initiatives which go beyond the university itself to support networking with relevant internal and external stakeholders. The concept of UBEE proposes interconnectedness with all the stakeholders, organizations, institutions, and entrepreneurial processes by the dynamic university system which coexist to connect, mediate and govern the performance of the entrepreneurial environment (Fauzi et al., 2019). A university based entrepreneurship (UBEE) can be implemented through the UBEE elements and functioning it within the university framework (Greene et al., 2010). This is particularly true for U-BEEs in which universities are seen as primary drivers of entrepreneurship activity (Allen & Lieberman, 2010; Butler, 2010; Fayolle & Bryne, 2010; Yu et al., 2017). Rice et al. (2010) examined six U-BEEs, including Babson College, NUS, and Texas University, providing a qualitative analysis of key institutional elements (i.e. strategic vision, entrepreneurship courses, incubators, and program endowments) and identifying CSFs (i.e. senior leadership vision, engagement and sponsorship, strong programmatic and faculty leadership, and sustained commitment) mentioned by Yu et al (2017). Thus development of UBEE will bring a wind of change among the university graduates whereas the human capital considered as monumental in creation of future entrepreneurs.

In Singapore, The role model university such as National University Singapore (NUS) created university based entrepreneurship model to commercialize the creation of the students. Etzkowitz et al, 2000; Leong, Wee and Yuen-Ping (2008) have termed as the “*entrepreneurial university*” model. Highlighting the Innovation and Entrepreneurship, authority created NUS division which is widely known as “*NUS Enterprise*” created in 2001 for providing a comprehensive “*Eco-System*” to support ground-breaking dimension to NUS education and research and to generate value from university resources through experiential education, industry engagement and partnerships and entrepreneurship support. NUS operations are performed through three main divisions: NUS overseas colleges (NOC), the industry liaison office (ILO, formerly INTRO) and the NUS Entrepreneurship Centre (NEC) stated by Leong, Wee and Yuen-Ping (2008) and having many support services through Innovation center, Incubation center, Research and Technology center, Maker’s Lab, Nus communities and Interest groups, NUS communities outside campus (Source: Website, NUS Enterprise).

In Sweden, Leong, Wee and Yuen-Ping (2008) mentioned that five starts- up had formed from Royal Institute of Technology and three of them comprised from biotechnology and others were from engineering in between 1999 and 2006. Taiwan has over 100 public/private universities and vocational colleges (Yu et al., 2017). Among them, NTU-TW and NTHU-TW belong to public, comprehensive, and research-oriented universities (Yu et al., 2017). These universities have (NTU-TW & NTHU-TW) launched its Creativity/ Innovation and Entrepreneurship Program (CEP) working as an academic division and initiated both

compulsory, elective and supplementary curricula for entrepreneurship education program (Yu et al., 2017). NUS targeted the students of masters and PhD level for commercializing their inventions and expanded the entrepreneurship education for all students especially for engineering, computing and science. A Technopreneurship minor course was introduced. For increasing outreach program NUS organizes annual national and International business plan competitions, developing on campus student entrepreneurship, conducting different forums and techno venture forum on a regular basis (Wong et al., 2007). On the other hand Sweden and Taiwan has pushed the entrepreneurship curriculum as compulsory, supplementary and elective courses to the undergraduates' level students or in the interested group (Yu et al., 2017). NUS enterprise is managed independently but in Sweden academicians are involved with formation of student start-up (Leong et al., 2008) and in Taiwan, it is run as an academic division stated by Yu et al., (2017). NUS entrepreneurship center is closely related with NUS Overseas Colleges (NOC) to make outward and inward program for the students. Students receive international exchange program, international internship facilities with partner universities and summer program with consortium universities to explore entrepreneurship and education in different countries and inward program. NUS attracts foreign talents to know NUS entrepreneurship education (Wong et al., 2007). But in Sweden there is a good supply of researcher and trained in university framework if inventors involves in business management (Leong et al., 2008). Both Taiwanese universities (NTU-TW and NTHU) team up with the Ministry of Science and Technology to host start-up incubators and assisting students in securing funds for innovative ideas (Yu et al., 2017).

Wong et al., (2007) mentioned that contrasting to Singaporean and Taiwan counterparts, Majority Swedish entrepreneurs chosen to leave the administration of a start-up to a competent and experienced person especially entrusted by the Swedish academics for their competent management skills or former sound technical background taking up the role of CEO; hired through incubator's contact even though technology transfer is often impeded because of lack of people with competency to manage new technology startups. The accessibility of public funding or smart money in Sweden facilitates start-ups to overcome their financial obstacles. Without the formation of an enterprise framework within the universities, Swedish start-ups rely on the agencies from the government and industry for support in business development and funding (Leong et al., 2008). Taiwanese Start-ups also depends on angel investors and collaborate with govt. agencies for fund to accelerate their business (Yu et al., 2017).

But disparities exists with Singapore where university start-ups can directly source funding from the university stated by Wong et al. (2007). NUS has initiated many funding opportunities for their venture up to \$50000- \$5, 00,000 (Website, NUS Enterprise). Some start-ups are facing difficulties in getting the second round of funding due to the absence of sophisticated venture capital industry in Singapore (Wong et al., 2006; Leong et al., 2008). It will take time to develop new policies for fundraising after seed stage but NUS has continuous search for managing fund from Angel investors and also from industry (Leong et al., 2008). There is some debacle to whether the university should disburse seed funding to the startups and limited ability to seed more companies from a university is a challenge. On the other hand, subjecting the start-ups to external funding will provide a good control to limit funding to companies that

can achieve a higher rate of success mentioned by Yu et al (2017). In the Swedish system, the linkages are inherently straightforward without any replication of core of the government–industry–university in the Triple Helix nexus (Leong et al., 2008). In Taiwan, government intervention on entrepreneurship education seems to be common in many Asian countries and this practice may enhance the efficiency of entrepreneurship education and can be implemented in developing countries (Yu et al., 2017). In this study, we provide crucial similarities and contrast among the three UBEE Models to overcome key challenges, such as education, funding and incubation and entrepreneurship support services to implant enterprise structure within university based framework.

METHODOLOGY OF THE STUDY

In this study, secondary data were used for developing literature which was collected from different articles. A case study of Daffodil International University has been analyzed by qualitative observation methods. For proposing a cultured model, the authors used focus group discussion with the faculty members, administrative officials and relevant people.

DISCUSSION

Authors have chosen “*Daffodil International University*” as a model case study. Founded in 2002, DIU is the youngest private university among the private universities in the country with a total enrollment of 25,000 students and 700 faculty members. Although, there are 107 private universities in Bangladesh, the entrepreneurial education scope is narrow. DIU has started the country’s first formal entrepreneurship education in the country and created a department named “Innovation and Entrepreneurship”. For encouraging entrepreneurship development within university framework, many of the policies have been revised, regularized and newly proposed for entrepreneurship development. In 2018, DIU was placed in QS Asia ranking and Times Higher Education Ranking. This University is shifting traditional education model to entrepreneurial model.

Entrepreneurship Support Programs

Daffodil International University (DIU) has started to provide entrepreneurship support program to reach their strategic vision to develop 2000 entrepreneurs in the country within the university framework and created a complete ecosystem facilitating all the relevant facilities to support entrepreneurship development. DIU has rooted the seed of entrepreneurship; the rupture will be seen after a certain period of time. Entrepreneurship support programs are divided in four main facilities. These are entrepreneurship education and outreach program, startup incubation and mentorship, funding for scale up, industrial collaboration (Figure 1).



FIGURE 1
ENTREPRENEURSHIP SUPPORT PROGRAM OF DIU

Education Initiatives of DIU

The university has started country's first department named "*Department of Innovation and Entrepreneurship*" for ensuring wide range of entrepreneurship education in 2015. A non-campus learning attempt is the conscious attempt to reach beyond campus in building. Department of innovation & entrepreneurship is focused on three key areas; entrepreneurship development, entrepreneurship education and entrepreneurship research under the Faculty of Business and Entrepreneurship. The faculty provides MBA program major in entrepreneurship which is targeted for graduate level students. This university offers 100 percent scholarship as education support to talented young students. A non-major course technopreneurship has been initiated for engineering students to some departments for creating their venture. The Department of Innovation and entrepreneurship circulates a revolving fund named "*Entrepreneurship Development Fund (EDF)*" to the students for starting venture. This particular department provides active mentoring for every individual student to solve business problems with the help of expert and even students are suggested to solve a problem through entrepreneurship club. DIU is also working for developing government collaboration to support student's venture for external funding. The university also encourages learning entrepreneurship out of the campus sending to Malaysia, Thailand, Indonesia, Turkey and some other countries. DIU delivers in-house internship facilities for the students to learn in real and practice through their own business. It has been proposed that all entrepreneurial activities will be included under the school of entrepreneurship (SOE); many wings are proposed to be added with SOE for more formalization. The Department of Innovation and Entrepreneurship arranges and organizes a

business plan competition such as startup idea for fund, startup huddle, hult prize, social business plan competition, 'are you the next start up' and some other programs to find the right person for proper education. The education and venture creation are mainly focused on the students of undergraduate level in Daffodil International University. It might be a good idea if the university puts emphasis on graduate level students to become an entrepreneur in the coming days.

Incubation Center Support

The incubation center was formed with an obvious aim of providing targeted assistance to DIU's transformation. Incubation center is related with developing a business concept to venture start up. Daffodil has the greatest infrastructure facilities by providing maker space where interested students can develop their prototype products in a small extent. Among many ideas incubator center arranges business plan competition on every six months to find the startup for providing funds. If any ideas are already implemented by the innovators, the incubation center facilitates business space to reduce the primary level cost of the start-up in a significant manner. For inventors DIU has country's first innovation lab where all kinds of technological supports are available. The incubation center facilitates training to develop the skills of the students on recent ideas, innovations, and technological up gradation and so on. DIU has market space where students can showcase and sell the product to the prospective customers for gaining customer experience in their academic period.

Funding for Venture Support

DIU has the funding support from the beginning of the startup of the students. A university based startup can initiate the journey from department of innovation and entrepreneurship by taking entrepreneurship development fund (EDF). It is not seed fund but an interest free revolving fund to develop their innovative idea corroborates them with the prospective customers. DIU has a venture capital which is specially developed for funding students' venture. Venture capital provides long term funding options which is mainly equity investment through university body up to BDT 100 million to scale up the prospective technological business within the university framework. Rather funding venture capital searches for innovative ideas from different background students to develop their venture analyze the business and risk and arranges fair and seminars to disseminate knowledge for business development. Direct advising and mentorship is also facilitated by venture capital to keep eyes on new venture. For external funding DIU always searches for angel investors and external body such as govt. or private body who are interested in investment.

Industrial Collaboration and Networking Events

Daffodil has strong collaboration with the industry. A good collaboration exists with different universities of many countries. Daffodil has signed more than 400 Mutual of understanding (MOU) with industry and academy to improve university education, industry

achievement and employment creation is the main reason. Daffodil has strong alumni network all over the world where entrepreneur student can easily be connected to their business reason. Daffodil arranges many industry academia lecture series to visualize the contribution of existing entrepreneurs of the country. For proper maintenance of industrial liaison is necessary to reduce the knowledge gap in business and technological implementation. Developing a university based entrepreneurship ecosystem, DIU facilitates, sponsors and organizes networking events in collaboration with industry. DIU coordinates fairs, workshops and seminars on a continuous basis to enrich the knowledge and application to provide more updated skills for developing students' venture.

FINDINGS OF THE STUDY

Through the observation of UBEE framework of mentioned university, the authors found that their entrepreneurial practices are in full compliance with the elements of UBEE. A university can ensure the elements of entrepreneurial university with a strong framework where students will be facilitated by the university to create the ideas into their dream in their education period. The transformation is necessary for the country and change is inevitable to cope with global phenomena. DIU has set the root and on the way of rupture. The process of adaptation as an entrepreneurial university is nonlinear, the evolution path and implementation paths are slippery which conflicts with the interest of traditional academic issues. It needs an umbrella to manage all the initiative from a central point. The university may consider the students of engineering background at first because of their innovative project rather putting emphasis only on business graduates.

CONCLUSIONS

The development of the university based ecosystem in Bangladesh by a private university is self-directed initiative of the university authority which was not government focused because DIU has a good amount of infrastructural support, access of technology, academic development and senior management support which is helping to establish the system within the university framework as a whole. Different entrepreneurial initiatives have been taken throughout the entire university. Entrepreneurship education is available from basic level to advanced level, and different forms of business and ideas, business mentoring and fundraising capabilities, training and soft skills development, commercialization of tech-based idea are the core competencies of DIU. Therefore, it is evident that the overall entrepreneurial thinking and implication of U-BEE elements helped DIU to establish the root of ecosystem of being the part of the transition of teaching university to entrepreneurial university or research based entrepreneurial university which is a non-typical way. This model is more similar to the Singaporean model. Similar model can be applicable to other universities in developing university based entrepreneurship ecosystem. With the cooperative model govt.-industry-university can work in the triple helix nexus in order to create more university based ecosystem in Bangladesh. In conclusion, to make

the U-BEE model triggered, university can take the initiatives to foster more entrepreneurial mindset among the students that is more imperative in the context of Bangladesh.

LIMITATIONS AND FUTURE DIRECTION OF RESEARCH

This study was based on focus group study, a qualitative analysis of UBEE framework. Further research can be carried out to identify the real impact of these U-BEE initiatives through quantitative research and measure the outcomes of U-BEE implantation within the university framework.

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