

EXPLORING THE IMPACT OF DIGITAL ENTREPRENEURSHIP EDUCATION AMONG GRADUATES IN BANGLADESH

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ABSTRACT: Unemployment, especially among graduates, is a big issue not only in individual countries but also globally. Digital entrepreneurship is proposed as a way to mitigate, if not completely remove, the hardships of unemployment for both individuals and governments. It has been demonstrated that becoming an entrepreneur is a conscious decision that necessitates a great deal of thought and planning. The current study incorporates cognitive and behavioural school of thought principles to develop a model that connects digital entrepreneurship education to graduate entrepreneurial intention. The attribute approach appears to imply that entrepreneurship is a privilege associated with certain characteristics, and digital entrepreneurship education will assist in the development of entrepreneurs. In light of the above findings, the current study examined the impact of digital entrepreneurship education on entrepreneurship among Bangladeshi graduates using the Theory of Planned Behaviour (TPB). The proposed framework illustrates that entrepreneurship education is a conscious strategy and that there is a link between digital entrepreneurship education and entrepreneurship intention, which is mediated by personal attitude (PA), subjective norm (SN), perceived behavioural control (PBC), and entrepreneurial decision (ED). This study employs a quantitative approach to address a methodological gap in the literature, which usually evaluates simply entrepreneurship intention instead of the actual process of entrepreneurship. Data were collected from several university students representing several study disciplines in Bangladesh and structural equation modelling was used to test the hypothesized model and structural relationships. The empirical findings and recommendations show that graduates' entrepreneurial intentions have a positive impact on their attitudes, subjective norms, perceived behavioural control, and entrepreneurial intentions, and that this information can assist policymakers, government officials, entrepreneurship experts, and lecturers decide to include digital entrepreneurship courses in higher education institutions.

KEYWORDS: *Digital entrepreneurship, Unemployment, Graduates entrepreneurs, Bangladesh, Theory of Planned Behaviour.*

1. INTRODUCTION

The most fundamental concept of entrepreneurship is self-employment. Digital entrepreneurship, on the other hand, deviates from this definition because it refers

to commercial initiatives that take place entirely online (Giones and Brem, 2017). Digital entrepreneurs rely on digital media technologies and information technology to pursue entrepreneurial opportunities. Digital entrepreneurship occurs when a business's asset, a service it provides, or a basic aspect of its operation is digitised (Kraus et al., 2018). Digital entrepreneurship goes beyond the traditional notion of entrepreneurship in that it involves a diverse collection of individuals who are constantly growing (Autio et al., 2018). The emphasis shifts away from the traditionally established participant and toward a more flexible group of players with a diverse set of talents, ambitions, and end goals (Gohmann, 2012).

Digital entrepreneurship is also profoundly rooted in digital opportunities. The level of technological advancement is at an all-time high, and digital entrepreneurs are aware of the potential that this development represents (Richter et al., 2017). Entrepreneurs are turning to digitalisation to take advantage of these prospects. Digital transformation can be defined as corporations changing their activities, but it can also refer to the expansion of our civilizations by the use of technology in a larger sense (Hess et al., 2016). The application of digital transformation entails rethinking business procedures to include digital technology in all aspects of the company (Bounfour, 2016). The widespread use of digital networking capabilities provides enormous opportunities for digital entrepreneurs. These opportunities exist as a result of digital media consumers' ability to seek help, respond to messages, and submit appropriate complaints and ideas to institutions (Chowdhury, 2017). Education seems to be a prerequisite for survival in some form in the twenty-first century, and it can improve one's chances in a variety of ways. Despite major educational improvements in Bangladesh, the modifications and the curriculum, in general, have not placed a high priority on digital entrepreneurship education. Dewi et al. (2017) highlight the importance of university education for leadership and entrepreneurship, with a focus on unemployed graduates who have stayed in the workforce after graduation. Since then, entrepreneurs have had the potential to shape the world by building a wide range of competencies and attractive businesses that are vital to the socioeconomic development of countries.

Graduates are an important resource for any country. Rather than being confronted with new problems, they should be nurtured. Entrepreneurial businesses can transform the way we live and work, as well as create jobs and contribute significantly to economic growth (Audretsch et al., 2016). The most successful entrepreneurs are able to communicate effectively and have the skills necessary to complete higher education. Entrepreneurial abilities aren't limited to entrepreneurship, and entrepreneurship education as part of a higher education curriculum provides financial rewards as well (Wlodkowski and Ginsberg, 2017). According to Donnelly et al. (2013), the top countries always invest in new entrepreneurs for research and development. To be a good entrepreneur, you must dedicate time and effort to studying and mastering skills. Many online platforms are prepared to supply almost everything intended to guide entrepreneurs in developing their creative abilities. In this circumstance, higher education plays an important role for the country and its citizens. However, entrepreneurial abilities do assist people in gaining experience and learning new skills. In this context, future graduates will be required to develop a diverse set of abilities that are vital to the progress of economies. Because of poverty, discrimination, and the economic growth incapacity to supply jobs, Bangladesh's graduate unemployment problem has

gotten worse in recent years. As a result, competition for existing available jobs has become more intense. As a necessary consequence of the densely populated country's poor social protection systems and inefficient and unsuccessful labour market policies, many of the country's youth are unable to find or create jobs, relying solely on their families for support, and are forced to do low-paid informal labour, as well as illegal work and crime (Khatun and Saadat, 2020). According to the World Bank (2019), 46% of college graduates and 39% of university graduates are unemployed or unable to find work within two years of graduation. Researchers also suggested that institutions make adjustments to focus on generating graduates with abilities that are matched with industry requirements and the present employment market.

Unemployment, particularly among young people, is a big issue not only in individual countries but also globally. Entrepreneurship is seen as a way to alleviate, if not completely eliminate, the hardships of unemployment for both individuals and countries. Youth, who are impacted by the nation's growth cycle, control the destiny of each community and nation. Youth are not only the future but also a symbol of hope for a better future; they are vital contributors to the nation's development (Lakshminarayanan, 2020). Today, more than ever, diagnosing and managing youth development is essential due to the scarcity of job prospects. Unemployment is one of the most serious economic difficulties facing young people around the world, particularly in Bangladesh (Islam et al., 2016). Many countries, particularly those in transition, such as Bangladesh, face significant difficulties in finding graduate jobs (Asonitou, 2015). It is critical to assess graduate competencies as well as the difficulties that graduates encounter in order to address this issue (Abbasi et al., 2018). However, there is a significant disconnect between graduate competencies and industry requirements, raising worries about graduates' ability to properly integrate into the workforce (World Economic Forum, 2014). The ability of a country to efficiently use its population is important to the success of developing economies like Bangladesh's, and it needs active participation from all stakeholders, particularly graduates. Bangladesh's socioeconomic progress will be hampered if graduates lack the necessary professional skills and suffer major career difficulties (World Bank, 2018). There have been consistent challenges in Bangladesh regarding the employment of graduates. In the Bangladesh Labour Force Survey for 2020–2021, graduate unemployment was reported to be 13.4 percent, significantly higher than the national unemployment rate of 4.2 percent. The unemployment rate for graduates is 10.6%, with 29.8% unable to find work, education, or training (Bangladesh Bureau of Statistics, 2021). Poor graduate employability can be attributed to a lack of skills taught and acquired by students, as well as a failure to recognize and address the challenges that graduates face (Chowdhury and Miah, 2019).

Digital entrepreneurship can assist with interpreting new market opportunities, putting forward factors of production to produce the required product or service, taking risks, making decisions, relocating and adapting innovative technologies, overcoming challenges, managing change, and turning innovative ideas into reality (Cavusgil and Knight, 2015). Economic organisations are formed by graduates who can recognise opportunities, assess them, and turn them into viable business concepts. Digital entrepreneurship and economic growth are intricately connected. As a result, the entrepreneurial process is a major driver of economic growth, and

entrepreneurship is an important component of economic advancement. Regardless of a country's economic or political framework, entrepreneurship is essential for economic success (Uddin, 2021). In Bangladesh, unemployment is a continuous issue, and entrepreneurs are supporting the unemployed in significant numbers in finding work. As a result, digital entrepreneurship is important in addressing the country's unemployment problem and paving the way for economic growth. The results of this study will assist all relevant stakeholders, educational institutions, and government agencies in determining the influence of digital entrepreneurship education on improving the well-being of Bangladesh's unemployed graduates by providing them with their workspace.

2. LITERATURE REVIEW

2.1. Entrepreneurship in Education

Entrepreneurial development is centred on education in general and entrepreneurship education in particular. This is not unexpected, given that education is the greatest and most well-established system in most civilizations for shaping the nation's destiny (Ghasemi et al., 2011). As explained by Rasmussen and Sorheim (2006), entrepreneurial education can refer to either entrepreneurship education or education that teaches students the skills needed to become entrepreneurs. The second definition agreed on a wide definition of entrepreneurship education as classes in which students learn how to plan a new company venture by blending knowledge from several functional areas and the dynamic external world (Solomon, 2007).

The definition of entrepreneurship education was expanded by Fayolle et al. (2006) to include any pedagogical programme or educational process that fosters entrepreneurial skills and attributes. As reported by Mojab et al. (2011), entrepreneurial competency is comprised of mindsets, capabilities, values, convictions, experience, and preferences. In light of the above discussion, entrepreneurship education is defined as "education that develops entrepreneurial ability." Despite significant differences in how entrepreneurship education is defined, all definitions ultimately point in the same direction: entrepreneurship education is intended to train students to become successful entrepreneurs. This is especially important at the college level because many high school students aspire to be entrepreneurs but lack the necessary knowledge (Bernstein, 2011). Entrepreneurship education at the undergraduate level is thus intended to assist students in better understanding entrepreneurship and increase their chances of success.

2.1.1. Objectives of Entrepreneurship Education

Entrepreneurship education attempts to prepare students to start their businesses. There are three broad objectives of entrepreneurial programs, namely to understand entrepreneurship, to become entrepreneurial, and to become an entrepreneur. In accordance with the program's goal, an entrepreneurship education system will be developed. For example, enterprise education (also known as entrepreneurship education) is provided to students in order to raise entrepreneurial consciousness (Cheung, 2008). Students are taught the concepts of how to create and manage a firm to achieve this goal. On the other hand, to stimulate entrepreneurship, a curriculum that includes professional experience for

small business start-ups and operations, often known as education for enterprise, should be implemented (Kuratko, 2005). Hence, enterprise education is offered with the goal of assuring the growth of the enterprise. On the other hand, it concentrates on workplace learning, growth training, and product creation.

2.1.2. Pedagogy in Entrepreneurship Education

According to Bridge et al. (2010), entrepreneurship education is a lifelong process. Given the length of time, it's conceivable that the education requirements for entrepreneurs should differ based on the student's developmental stage. In accordance with Fayolle and Gailly (2015), students will be able to make their judgments, challenge their minds, and make their own mistakes if their education is personalised to their needs, strengths, and limitations. These will assist them in being more aware of their skills, allowing them to overcome their deficiencies and, in turn, preparing them to take risks.

Jones and English (2004) advised that entrepreneurship education be taught in a distinct learning environment in response to the ongoing debate about the optimal pedagogical method for entrepreneurship education. According to an analytical hierarchy process study by Samah et al. (2010), students rated hands-on learning techniques first in the list of entrepreneurship education components needed to help them establish their own business after graduation. This is especially true for students who have no prior experience with entrepreneurship. Because of the advancement of IT-based teaching materials, research has been expanded to look into the outcomes of IT use in entrepreneurship education. Students who were taught corporate entrepreneurship in a course that included an empirical case study, a take-home exam enabled by WebCT, and group activities said that the combination enhanced their learning process (Heinonen et al., 2007).

2.1.3. Instructors of Entrepreneurship Education

According to Lewis and Massey (2003), the efficient implementation of entrepreneurship education is dependent on the synergy of resources and objectives. As reported by research on participants in the Young Enterprise Scheme, teachers were considered the key influence on whether the programme was conducted successfully. Teachers are the ones who have the greatest interaction with the program's participants and have a long-standing relationship with them. As a result, the participants' perspectives are influenced by their knowledge, actions, attitudes, and passion.

Interestingly, Kabongo and McCaskey (2011) reported that the majority of entrepreneurship professors in the United States have business degrees rather than entrepreneurship degrees. According to their data, just 18% of the 195 faculty members with PhDs surveyed have a doctorate in entrepreneurship or a combination of entrepreneurship and another discipline. On the other hand, it's comforting to know that the absence of entrepreneurship PhD holders among entrepreneurship teachers was partially balanced by their experience as entrepreneurs and their attention to the field in their teaching and research. Kabongo and McCaskey (2011) reported that prior to entering academia, 81% of respondents worked as consultants, business owners, corporate executive directors, or venture capitalists. In their study, 37% of respondents said entrepreneurship was their research focus, and 75% said entrepreneurship and small business management were the subjects of their teaching assignments.

2.2. Theory of Planned Behaviour (TPB)

The theory of planned behaviour (TPB) (Ajzen, 1991) has become one of the most influential and popular conceptual frameworks for the study of human action, particularly the intentions of individuals to participate in diverse activities. TPB is a member of a broad family of intention models that have been used in the field of entrepreneurship several times, yielding reliable research results (Krueger et al., 2000; Fayolle et al., 2006).

The TPB's primary component is an individual's purpose to engage in a specific behaviour (Ajzen, 1991). As a result, attitude toward the activity, subjective norms, and perceived behavioural control are the best predictors of intention. Exogenous elements (such as personal attributes, demography, abilities, and societal, cultural, and economic assistance) thus influence intention and behaviour indirectly. The following three predictors of intention are proposed by the theory of planned behaviour.

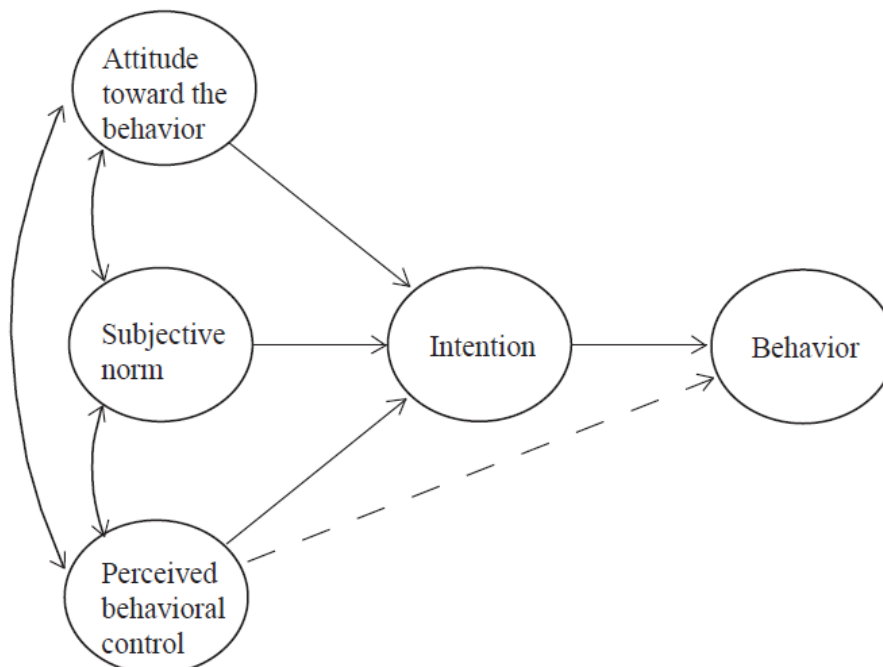


Fig. 2.1. Theory of Planned Behaviour, Source: Ajzen (1991)

According to Ajzen (1991), the stronger an individual's intention to conduct the activity under consideration should be, the more favourable his or her attitude and subjective norm are, and the greater the perceived behavioural control (Ajzen, 1991). However, the importance of attitudes, subjective norms, and perceived behavioural control may alter depending on the type of conduct. As a result, it may be discovered that simple attitude or attitude and perceived behavioural control have a significant impact on entrepreneurial intention or that all three predictors are adequate to explain entrepreneurial intentions.

2.1.2. TPB and Its Application to the Field of Entrepreneurship

In the context of entrepreneurship, the intention to participate in a specific activity is the intention to engage in entrepreneurship (entrepreneurial

intention). In addition, the following are the three predictors of intentions. The degree to which the respondent views being an entrepreneur favourably or negatively is referred to as attitude towards entrepreneurship. As a result, a positive attitude toward entrepreneurship shows that the responder prefers entrepreneurship over alternative career options. The term "subjective norm" refers to respondents' impressions of what influential people in their lives think of their decision to start a business. Lastly, "perceived behavioural control" refers to a person's perceived ability to become an entrepreneur, particularly the perceived ease or difficulty of doing so, as well as their optimism about their opportunity to improve (Kolvereid, 1996).

2.3. Personal Attitude Consider for Entrepreneurs

According to Kobia and Sikalieh (2010), there are three schools of thought in entrepreneurship, such as trait, behavioural, and opportunity identification approaches. Entrepreneurship combines with innovation to get a competitive advantage in the market (Roininen and Ylinenpaa, 2009). This necessitates a process known as "creative destruction," in which new products and services are developed and a new market, or at the very least a new niche, is created. As reported by Hamidon (2009), once an entrepreneur has established himself in his business, he loses his entrepreneurial position. In other words, the day-to-day operations of running a firm are not considered entrepreneurial since they are inventive activities that redefine economic boundaries and take them to new heights (Stevenson and Jarillo, 2007).

Because of the difficulty of the tasks that an entrepreneur must complete, Schumpeter argued that only those who are extremely motivated, creative, and innovative can succeed (Hamidon, 2009). An entrepreneur is a person who takes the initiative to make use of resources available in his or her environment and turns them into a new idea (Betta et al., 2010). As a result, it may be argued that an entrepreneur possesses some inner characteristics that non-entrepreneurs lack. The trait theory is built on this foundation.

2.3.1. Tolerance to Risk and Tolerance to Uncertainty

Aside from the aforementioned traditional personality attributes, academics interested in entrepreneurship are also interested in risk tolerance. Risk propensity, as defined by Sharma et al. (2009) in the subject of consumer behaviour, refers to one's proclivity to take or avoid risk. The word was coined by Lan and Wu (2010) to describe a willingness to tolerate possible loss. According to Sharma et al. (2009), risk propensity is an overarching trait that manifests itself through attitude, risk evaluation, and consciousness. Because small and medium businesses have limited resources, the authors believe that a risk-taking orientation is especially vital for them. As stated by Fairlie & Holleran (2012), risk-taking tendency is the most often studied personality factor in entrepreneurship. Although the idea that it is the capitalists who face the risks is psychologically appealing, business ownership is obviously dangerous (Betta et al., 2010). As a result, only risk-takers are likely to choose self-employment. As suggested by Sandhu et al. (2011), risk-taking proclivity is negatively related to ambiguity tolerance. Pillis and Reardon (2007) hypothesized that individuals who are more adventurous (receptive to uncertainty) are more inclined to take the risk of establishing a firm in the

setting of entrepreneurship, where start-ups might give financial gain or financial loss and disgrace to the entrepreneur.

2.3.2. Innovativeness

The link between innovation and entrepreneurship is perhaps best articulated by Schumpeter himself, who argued that entrepreneurs are those who dream of and work toward success because they enjoy the thrill of achieving it; those who create for the sake of creating; and those who seek challenges because they thrive on change. Nonetheless, Craig and Johnson (2006) argue that the distinction between innovator and entrepreneur is hazy. In their study, business students perceived themselves as excellent opportunity identifiers who also knew how to gather resources to capitalise on the opportunity. As a result, they were effectively both entrepreneurs and innovators. On the other hand, engineering students did not regard themselves as capable opportunity recognizers in their studies but rather as inventors. Craig and Johnson (2006) hypothesised that entrepreneurship education would be advantageous to the engineering group (or else the innovation and invention would neither be marketable nor profitable). According to Marcati et al. (2008), innovativeness was first defined as the degree to which a person embraces innovations before others in their social context. However, the concept of inventiveness has been expanded and separated into two categories: general and specific inventiveness. General innovativeness refers to the level of creative thinking used in issue solving and decision making. On the other hand, specific innovativeness is the predisposition to be among the first to accept fresh ideas in a given circumstance (Marcati et al., 2008).

2.3.3. Self Confidence

Based on Taatila (2010), advanced entrepreneurs are confident in themselves. Their ability to envision future goals and paths to those goals provides them with self-assurance. As a result of their confidence projection, others will be influenced to trust them. According to Trevelyan (2008), confidence is a two-dimensional construct that includes positivity and overconfidence. It was established in her research that positivity and overconfidence are two different dimensions rather than two ends of a spectrum. On the other hand, overconfidence attracts negative energy, whilst optimism attracts positive energy. Positivity is a good attitude that is rooted in one's personality and so remains consistent and predictable. In addition, according to Trevelyan (2008), overconfidence refers to an extremely strong belief that arises from a scenario, which might lead to frame-blindness. The author compared overconfidence to perceived self-efficacy. As a result, a confident entrepreneur may feel optimistic about his or her business in general but not so much about individual business responsibilities.

2.3.4. Proactive Personality

Presbitero (2015) reported that a proactive personality is characterised by a stable inclination to plan and act in such a way that one's current and future state are improved. According to Rideout (2012), a proactive individual is self-motivated, diligent, and quick to act. As stated by Yang et al. (2011), proactive

people are aware of opportunities and take advantage of them. People who are proactive also initiate change and are not bound by circumstances. A proactive person likes to create a network of contacts and so boost his or her social capital (or a pool of allies and acquaintances that can provide resources). Rideout (2012) considered that proactivity is a personality attribute that can be influenced by education and incentives. The proactive attribute leads to proactive conduct, which is important in entrepreneurship because entrepreneurs must not only recognise but also identify opportunities. As a result, the findings indicating that a proactive personality is positively connected to entrepreneurial intentions are not surprising.

2.4. Digital Entrepreneurship Ecosystem

Traditional entrepreneurs are a subgroup of digital entrepreneurs that ensure that everything is done digitally in their businesses. Digital entrepreneurship is the pursuit of opportunities via the use of digital media and other forms of information and communication technology (Efeoglu, 2014). The phrase "digital entrepreneurship" refers to how information and communication technologies (ICTs) are changing and becoming more extensively employed. Digital entrepreneurship is an attempt by the existing entrepreneurial environment to adapt to the needs of the digital age in the face of developing and changing conditions (Dinh et al., 2018). E-entrepreneurship, often known as digital entrepreneurship, is the process of identifying and exploiting business possibilities through the use of digital media and other information and communication technologies (Dy et al., 2017). According to Santana (2017), digital entrepreneurship encompasses all new and former enterprises that use digital technologies to create economic and social value.

The digital entrepreneurship ecosystem is made up of governments, users (industrial organizations), technology vendors, educational institutions (universities, research institutes), investors (including financial institutions), and other value-chain enterprises. One of the primary features that stimulate transformation is the completion of these stakeholders' roles in cooperation and coordination. One of the most important components in the development of digital entrepreneurship is the creation of favourable conditions for the development of the digital entrepreneurship ecosystem. In order to contribute to the creation and development of the digital entrepreneurship ecosystem, it is necessary to construct a technological infrastructure, collaborate amongst institutions, give financial and technical assistance, expedite research and development, and make legal provisions to stimulate the emergence of creative products and services. Engel (2015) highlighted the following basic behaviours in the digital entrepreneurship ecosystem to enable the development of high technology-based businesses: there is an increase in human capital, financial capital, and knowledge as a result of the formation of the proper ecosystem. Digital entrepreneurship has enabled the emergence of new opportunities and markets globally and also encouraged the intensive use of the existing market by establishing a technological infrastructure and by using scientific and technological developments as a result of cooperation between institutions.

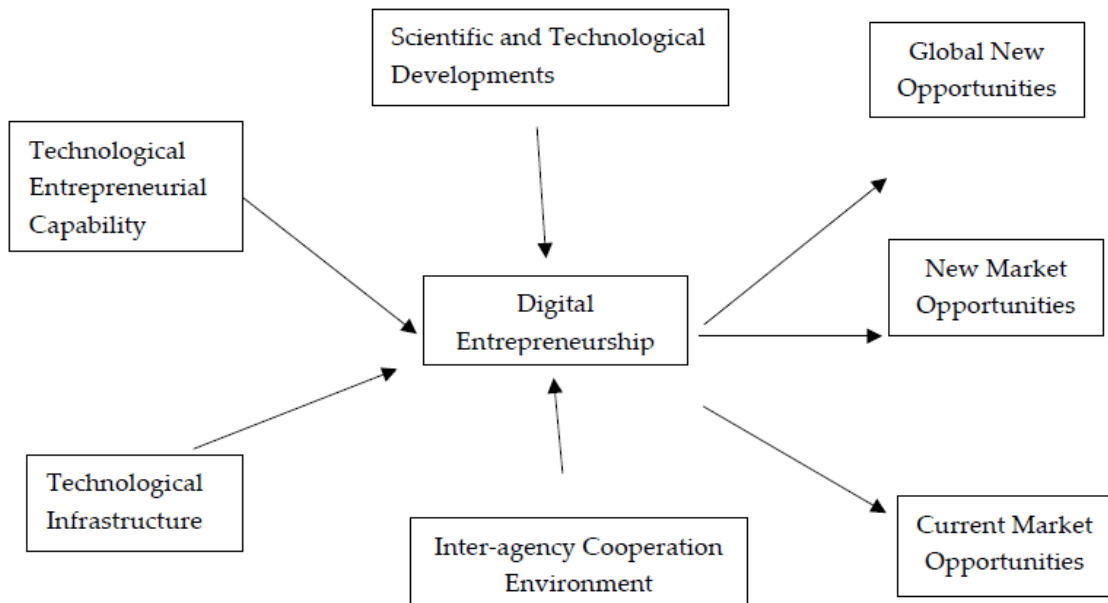


Fig. 2.2. Inputs and outputs of the digital entrepreneurship ecosystem.
Source: (Chaston, 2017)

2.5. Digital Entrepreneurship on Employment Prospect

A decent job used to be considered a ticket to good university education. More students are pursuing undergraduate and postgraduate studies in anticipation of a promising working future. In Cyprus, 80 percent of secondary school graduates enrolled in university for the 2007/2008 academic year. A university degree no longer guarantees employment, compared to student expectations. Between 2003 and 2009, graduates in Cyprus had an overall unemployment rate of 13.4 percent, compared to 12 percent across the European Union (Menon et al., 2012).

In 2004, the number of students enrolled in China's universities and colleges reached a record high of 20 million (Bai, 2006). The high enrollment reflected the Chinese government's goal of enrolling 19 percent of high school graduates in postsecondary institutions. The deadline had been set for 2010, yet it was met six years early. The achievement of the goal has a detrimental side effect: graduates are more likely to be unemployed. Graduate unemployment has long been a concern in China, but the widening gap between the number of students graduating from higher education institutions and the number of available job opportunities has worsened the situation (Wang and Lai, 2012). However, the shift in the economy from being industry-driven to being service-driven has resulted in fewer new job possibilities in the sector. To make matters worse, developments in the job market in the west, where many Hong Kong professionals have gone, have prompted them to come home. The repatriation increased the labour market's size and heightened the competition for scarce job openings.

Previously, corporations would look for university graduates to help them develop a pool of future top executives (Mihail, 2008). Firms would provide job security and possibilities for promotion based on the graduates' education,

skills, and talent. Unfortunately, fierce global competition has caused businesses of all sizes and regions to become flatter, more nimble, and more cost-effective (Nabi et al., 2006). According to Birdthistle (2008), such changes put paid staff at risk. According to Muja and Appelbaum (2012), worry and anxiety are to be expected given the circumstances, but recent graduates who are new to the job market and lack work experience face a worse nightmare. They will have a difficult time finding work. To summarise, the contemporary labour market for graduates is characterised by an oversupply of knowledge-based workers relative to the potential for graduate-fitting positions.

2.6. Entrepreneurial Decision

Employees must plan for their employment and career growth in light of the imbalance between the numbers of youngsters seeking employment, the potential or actual loss of jobs by graduates who are presently employed, and the limited chances for new job opportunities. Employees must be loyal to themselves rather than a single company throughout their lifetime career, and they must manage their own career growth rather than expecting companies to do it for them, as was the case when jobs were plentiful but well-educated workers were rare (Beeka and Rimmington, 2011). Employees should also consider their time with a company as an opportunity to learn new skills that will make them more marketable in the future. Schwarz et al. (2009) went a step further by advising unemployed graduates to pursue entrepreneurship. Birdthistle (2008) described how self-employment has been considered a suitable choice for graduates in the UK and Ireland in lieu of unemployment in her study of Irish and English students.

As stated by Birdthistle (2008), although the previous discussion of employment prospects hinted at a bleak outlook for graduates in salaried positions and the necessity for employees to plan their career paths, becoming an entrepreneur is not an easy undertaking. That is why, according to Olugbola (2017), one will choose self-employment only if the expected utility from entrepreneurship is seen to be greater than the expected utility from a salaried job. Anana and Nique (2010), on the other hand, stated that graduates will choose their employment depending on their principles (namely conformity, stability, self-direction, self-transcendence, and virtuosity). Their studies found that those who work in the field of social science (which is typically considered entrepreneurship) love challenging the status quo and refusing to conform. The numerous factors to consider before embarking on a career in entrepreneurship (such as expected utility, value, and a salaried alternative) may explain why Jin et al. (2009) found that graduates typically delay their employment decisions until later in their studies, despite knowing the unpleasant job market that awaits them.

Given the indicated timelines for young entrepreneurship by Astebro et al. (2012), which are six months and three years after graduation, some people may take even longer to decide whether to pursue entrepreneurship or work as a salaried employee. The previous discussion of entrepreneurship as a professional path alluded to a continuing debate over the factors that influence graduate entrepreneurship. Given governments and educational institutions around the world's ambition to develop entrepreneurs through education,

questions about the impact of education on entrepreneurship demand answers. To yet, no definitive findings have been drawn from studies conducted to address the issue. These aspects will be explored in the sections that follow the definition of entrepreneurship.

2.7. Proposed Research Framework

The proposed framework in the figure below is based on a study of current information and a discussion of hypotheses that follows. The framework was built on TPB's theory, but it was enlarged to add entrepreneurial decisions and intention. The value of digital entrepreneurship education in measuring graduates' intentions to become entrepreneurs is explained in the research framework (Fig 2.3). To identify the graduates' entrepreneurial desires, four mediating variables were chosen: personal attitude, subjective norms, perceived behavioural control, and entrepreneurial decision. Mediating variables were selected because of the potential effects of digital entrepreneurship education on them, which could influence the graduate's entrepreneurial tendencies. A true experimental design is used to investigate the mediating role of entrepreneurship education in the relationship between independent variables and dependent variables.

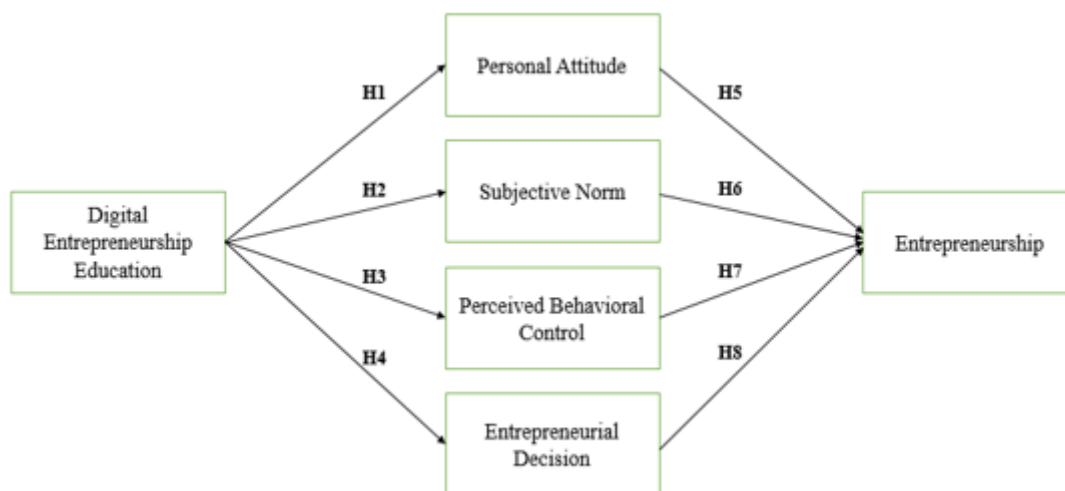


Fig. 2.3. The research framework for evaluation of entrepreneurship

2.8. Hypotheses Development

A hypothesis is a particular prediction regarding a certain behaviour that should be witnessed if a study is true. It's a straightforward explanation based on a few key components. Frequently, hypotheses are clear forecasts of what will happen in a certain investigation. They are made by taking into account existing evidence and employing reasoning to forecast what will occur in a certain situation. Hypotheses are frequently, but not always, derived from theories. While most hypotheses are predictions based on theories, some hypotheses are not theoretical, and theories are only developed after a series of observations. This is due to the fact that theories can explain a large amount of data and cover a wide range of topics.

H1: Digital entrepreneurship education has a significant positive impact on personal attitude towards being a successful graduate entrepreneur.

H2: Digital entrepreneurship education has a good impact on the subjective norm of becoming a graduate entrepreneur.

H3: The perceived behavioural control of being a graduate entrepreneur is positively influenced by digital entrepreneurship education.

H4: Digital entrepreneurship education has a favourable impact on graduates' entrepreneurial intentions and mindset.

H5: Personal attitude has a considerable positive impact on entrepreneurship among graduate entrepreneurs.

H6: Subjective norms among graduate entrepreneurs have a substantial impact on entrepreneurship.

H7: Perceived behavioural control has a positive impact on entrepreneurship among graduate entrepreneurs.

H8: Entrepreneurial decisions among graduate entrepreneurs have a significant positive impact on entrepreneurship.

3. METHODOLOGY

This study uses case study and survey research as the most popular non-experimental research methods, whereas quantitative approaches are employed. The qualitative part aims at exploring the characteristics of the study. By adopting this type, the quantitative part is performed by carrying out senses for collecting population, social, and economic statistics of a particular area. They are subjected to statistical analysis. It depends on primary data like surveys and questionnaire techniques.

Data can be gathered from primary or secondary sources or both. Primary data means getting information from the original source by a researcher on variables of interest for the identified objective of the study. Secondary data means gathering information from existing sources (Sekaran and Bougie, 2011). Primary data sources are composed of people, discussion teams, round tables of research subjects, the internet facility, and so on. Secondary data sources include knowledgeable journals, books, various research papers, proceedings, historical data, firm archives, formal publications, websites, and the like. Relying upon the type of information required in this study, data was collected through a survey questionnaire.

Furthermore, data collection is an important aspect of the research. The survey includes demographic information as well as five sections on entrepreneurship education, personal attitude, subjective norm, perceived behavioural control, and entrepreneurial decision. Participants are required to indicate how much they agree or disagree with a statement using a five-point Likert scale. The self-administered questionnaire is a data collection method in which respondents take the responsibility for reading and answering the questionnaire.

4. DATA ANALYSIS AND FINDINGS

The use of structural equation modelling (SEM) can not only estimate the unknown coefficients of the causal relationship between latent variables but also specify how the hypothetical constructs are represented by observed variables (Jöreskog and Sörbom, 1998). We followed the procedure proposed by Anderson and Gerbing (1988) to conduct SEM data analysis and to test whether the collected data fit well with the proposed model by using the AMOS 6.0 and SPSS 14.0 software packages. First, confirmatory factor analysis (CFA) was conducted to test the quality and adequacy of the measurement model (Anderson and Gerbing, 1988) in an attempt to ensure the reliability, convergent validity, and discriminant validity of the studied constructs. Second, in order to understand the causal relationships among the latent variables, SEM was adopted to verify the hypotheses presented in this study.

4.1. Descriptive Analysis

This section begins with a discussion of the findings of a survey of 300 students from various levels of numerous Bangladeshi universities. After the debate, an overview of the survey findings is given to several groups of people who have graduated with their respective academic degrees. After the data has been confirmed to be acceptable and accurate, descriptive analysis is used to examine the respondents' background information for the research. The descriptive analysis entails identifying the respondents' backgrounds based on frequencies and percentages.

4.1.1. Respondents' Background

This chapter examines the demographic and socioeconomic features of female and male respondents who were found to be suitable for digital entrepreneurship education among Bangladeshi graduates who responded to the survey. Students from a variety of Bangladeshi universities provided a total of 300 responses. All of the respondents in this survey are male and female because digital entrepreneurship education is offered to graduates in Bangladesh. The demographic profile of the respondents, as shown in Table 4.1, is as follows:

Table 4.1: Respondents' Demographic Profile

Respondents' Characteristics	Sub Characteristics	Frequency	Percentage
1. Gender	Male	184	61.3
	Female	116	38.7
2. Age	17-21	49	16.3
	22-25	126	42
	26-29	100	33.3
	Above 30	25	8.3
3. Current level of study	Bachelor	147	49
	Master	119	39.7
	PhD	25	8.3
	Others	9	3

4. Employment Status	Employed	105	35
	Unemployed Self-employed	143	47.7
	Others	47	15.7
		5	1.6
5. Has working experience	Yes	221	73.7
	No	79	26.3
6. Own a business	Yes	86	28.7
	No	214	71.3
7. Family members have a business	Yes	193	64.3
	No	107	35.7
8. Friends have a business	Yes	254	84.7
	No	46	15.3

4.2. Reliability Test

The degree to which test scores are consistent with one or more causes of inconsistency, such as the selection of specific questions, the selection of raters, and the day and time of testing, is known as reliability. Every inconsistency statistic, such as measurement error, corresponds to a specific source of inconsistency. It refers to how similar an instrument's results are for the same participants or factors at different times. According to Brown (2002), accurate data is necessary to assure the accuracy and consistency of future outcomes. The construct's reliability was initially tested using the most commonly utilised instrument reliability tests, such as Cronbach's Alpha and composite reliability, as shown in Table 4.2.

Table 4.2: Refined items loading after factor analysis

Items	Loading	Composite reliability	Cronbach's alpha
Digital Entrepreneurship Education (DEE)			
A1	0.771	0.915	0.882
A2	0.854		
A3	0.877		
A4	0.862		
A5	0.811		
Personal Attitude (PA)			
B1	0.745	0.885	0.843
B3	0.761		
B5	0.765		

B6	0.735		
Subjective Norm (SN)			
C1	0.825	0.925	0.915
C2	0.865		
C3	0.863		
C4	0.792		
C5	0.785		
C6	0.725		
Perceived Behavioural Control (PBC)			
D1	0.833	0.913	0.886
D2	0.837		
D3	0.804		
D5	0.722		
D6	0.849		
Entrepreneurial Decision (ED)			
E1	0.867	0.843	0.746
E3	0.732		
E4	0.798		
E6	0.735		
Entrepreneurship Intention (EI)			
F1	0.832	0.953	0.862
F2	0.841		
F3	0.823		
F4	0.871		
F5	0.864		
F6	0.876		

4.2.1. Analysis of Measurement Model

In light of the skewed data, AMOS is deemed the optimum method for assessing the fitness of the hypothesised model (Figure 4.1). Model fitness is evaluated in two stages: measurement model evaluation for determining construct validity and reliability, and structural model evaluation for examining hypotheses (Schepers et al., 2005). To begin with, a variety of reliability and validity tests were used to evaluate the measurement quality of constructs.

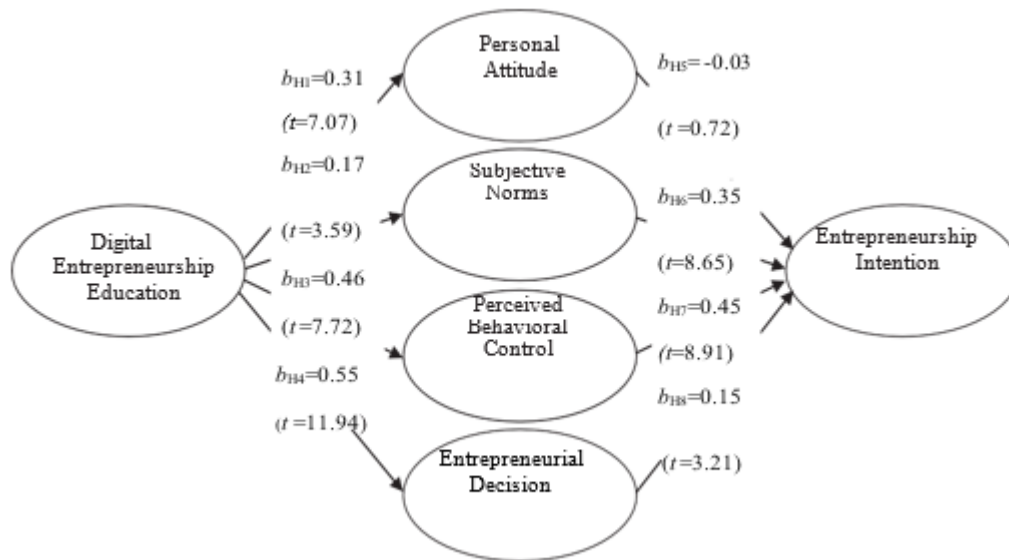


Fig. 4.1. The results of path analysis of entrepreneurship intention

4.2.2. The Correlation Coefficients Matrix

CFA validated the correlation coefficient matrix of the constructs proposed for this study to ensure the measurement model's reliability and validity. The analytical technique of structural equation modelling (SEM) allows a stepwise strategy to progressively improve the goodness-of-fit indices of the model (Chau, 1997).

Table 4.3: Average variance extracted score of constructs

	DEE	PA	SN	PBC	ED	EI
DEE	0.827					
PA	0.517	0.836				
SN	0.657	0.538	0.851			
PBC	0.574	0.386	0.531	0.979		
ED	0.390	0.278	0.523	0.416	0.804	
EI	0.628	0.458	0.458	0.464	0.276	0.756

Table 4.3 shows that based on the modification indices and expected parameter change statistics, the fit of the analytical model can be slightly improved by allowing some pairs of errors to correlate step by step till all goodness-of-fit measures of the focal model achieve the recommended values (Schaufeli et al., 2002).

4.2.3. Hypothesis Testing

AMOS was used to create a structural model to investigate the hypothesised causal link between variables. The structural model's path coefficients (standardized beta) represent the strength of the association between two variables. The outcomes of the hypothesis testing are shown in Table 4.4.

Table 4.4: Results of hypotheses testing

Relationship	β	Standard Deviation	Standard Error	T Statistics	Conclusion
Digital Entrepreneurship education to Personal Attitude	0.314	0.039	0.039	7.076*	Accept H1
Digital Entrepreneurship education to Subjective Norm	0.175	0.036	0.036	3.598*	Accept H2
Digital Entrepreneurship education to Perceived Behavioural Control	-0.063	0.054	0.054	7.723	Reject H3
Digital Entrepreneurship education to Entrepreneurial Decision	0.551	0.056	0.056	11.945**	Accept H4
Personal Attitude to Entrepreneurship Intention	0.325	0.052	0.052	0.724*	Accept H5
Subjective Norm to Entrepreneurship Intention	0.358	0.046	0.046	8.656**	Accept H6
Perceived Behavioural Control to Entrepreneurship Intention	0.457	0.047	0.047	8.915*	Accept H7
Entrepreneurial Decision to Entrepreneurship Intention	0.156	0.053	0.053	3.215**	Accept H8

*Significant at 1% confidence level; **significant at 5% confidence level

The enhanced TPB framework is somewhat supported by the results in Table 4.4. As expected, digital entrepreneurship education has a positive impact on personal attitudes, subjective norms, perceived behavioural control, and entrepreneurial decisions. The coefficient scores (= 0.325 for personal attitude, = 0.358 for subjective norm, = 0.457 for perceived behavioural control, and = 0.156 for entrepreneurial decision) show that the entrepreneurial intention to become an entrepreneur has a larger positive impact. Although the link between digital entrepreneurship education and perceived behavioural control is statistically insignificant, the negative β indicating an inverse correlation between the two is worth highlighting.

5. CONCLUSION REMARKS

5.1. Discussion

The study findings contribute to the literature in terms of theory and provide insight into the intentions of graduates to become entrepreneurs. The findings support the hypothesis that if a person's personal attitude, subjective norms, and entrepreneurial decision towards entrepreneurship are good, and he or she sees more behavioural control to patronise entrepreneurship, he or she is more likely to want to start a business. Furthermore, digital entrepreneurship education can provide graduates with a comprehensive learning management system, assisting

them in establishing correct values and cognitive systems, improving their perceptions of innovation, and continuously integrating and accumulating new knowledge to shape their innovative ability and personality. The findings add to our understanding of how digital entrepreneurship abilities are linked to inventive awareness, innovative ability, and innovative personality traits, as well as answer the question of whether entrepreneurship and innovation are observable. Digital entrepreneurship education can help graduates change their attitudes and behaviours in addition to providing human capital such as knowledge and skills.

According to the theory of planned behaviour, individuals learn skills and immerse themselves in the entrepreneurial community through entrepreneurship education, which improves their ability to recognise entrepreneurial opportunities and capture real entrepreneurial opportunities in the community. The fundamental components of entrepreneurial competence are skills and the capacity to recognise business opportunities. Entrepreneurs need explicit entrepreneurship skills focused on persuasion, infection, and attraction, while entrepreneurial opportunity recognition is a professional talent that entrepreneurs require. The multiple mediating roles of opportunity recognition in the relationship between digital entrepreneurship education and entrepreneurship intention are clarified using structural equation modelling, which clarifies the specific path and internal mechanism of entrepreneurial competence in the impact of entrepreneurship education on innovation.

5.2. Limitation and Future Research

Despite its importance, the current study has some drawbacks. There are a number of constraints that must be considered. To begin with, the current study did not collect samples from a wide range of higher education institutions and fields. This study was mostly conducted using quantitative research methods, with a follow-up survey questionnaire conducted as well. Second, the survey results were evaluated, which is generally stated to be unaffected by data size. The small sample size made it impossible to test the influence of digital entrepreneurship education on the three different types of academic programmes after respondents had graduated. More research is needed to properly comprehend the contextual factors that can inspire people with entrepreneurial dreams to start a business. In the proposed model of TPB, we identified the existence and influence of crucial push and pull variables that may promote or prevent entrepreneurial intention from changing into actual inventive activities, but this component of entrepreneurship remains under-researched and under-explored, especially in the context of Bangladeshi graduates.

In addition, from a theoretical standpoint, this study focuses solely on one theory, namely the theory of planned behaviour. To investigate the capabilities of Bangladeshi graduates and to measure their livelihood assets in terms of standard living indicators, more theories, such as the theory of capabilities approach, the growth theory, and the sustainable livelihood approach can be used in future research. Furthermore, this study mostly used the quantitative method from a methodological standpoint. However, there are many aspects of this study that would benefit from qualitative approaches, such as interviews with graduates, policymakers, government officials, entrepreneurial experts, and lecturers. Any future research would be considerably more valuable if it used a rigorous qualitative approach in this area.

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