

CHAPTER 3

LITERATURE REVIEW

3. Literature Review

Introduction

The review of literature aims to comprehend the research undertaken at the national as well as global level and determine the further scope of research in the domain of entrepreneurship education. The review of literature also attempts to develop a uniform understanding of the term entrepreneurship education along with exploring the methods for measuring the impact of entrepreneurship education. Furthermore, the review will also focus upon understanding the concept of self-efficacy, entrepreneurial self-efficacy and explore the existing scales for measuring entrepreneurial self-efficacy.

The review of literature is classified into following broad categories:

- i. Studies reflecting on the impact of entrepreneurship education
- ii. Studies measuring of the impact of Entrepreneurship Education
- iii. Studies reflecting on the concept of self-efficacy
- iv. Studies determining the relation between self-efficacy and performance
- v. Studies commenting on the relevance of self-efficacy for entrepreneurs
- vi. Studies elaborating the concept of entrepreneurial Self-efficacy
- vii. Studies focusing on development of self-efficacy Scale
- viii. Studies determining the role of demographic variables in moderating the impact of entrepreneurship education

At the end of these sections, the implication of the literature review in reference to the propose study is presented in order to help identify the research gaps and provide direction to the current study. The chapter concludes with defined research objectives.

3.1 Measuring Impact of Entrepreneurship Education

With the increasing popularity of entrepreneurship education programs across the world, the impact assessment of such programs has gathered considerable interest of the researchers. Some of these studies have explored the impact of entrepreneurial education on actually pursuing entrepreneurship after completion of program. Kolvereid & Moen (1997) in their comparative study of business school graduates with entrepreneurship major and other business major in Norway found significant positive relation between entrepreneurship major and new venture

formation. Higher percentage of those with entrepreneurship majors owned their venture as compared to graduates with business majors from other functional areas.

Another study by McMullan & Gillin (1998) of students of graduate entrepreneurship program at Swineburn University, Australia found that 87% of the students started their own venture after graduation. The alumni from graduates of 1988 to 1995 from two Australian and one Canadian Universities were surveyed to understand the impact of the entrepreneurship program. The percentage of students pursuing entrepreneurship was much higher for those who undertook MBA in entrepreneurship as compared to other graduates as well graduates with few courses in entrepreneurship as a part of their MBA. With an average of six employees, the businesses started by these graduates were considered to be on a medium to higher scale, even contributing to job creation.

Charney & Libecap (2000) in their study on the alumni (1985 to 1998) of University of Arizona undertaking the entrepreneurship and non entrepreneurship courses found that the entrepreneurship education increases the probability of an individual starting a new venture by 25 percent as compared to non-entrepreneurship business graduates if environmental factors and other personal characteristics are controlled. In the same study, an entrepreneurship graduate was found to be three times more likely to start his/her own business. Income and assets of entrepreneurship graduates were also found to be significantly higher than business graduates by 27% and 62% respectively.

In a similar study of a Canadian university, engineering students who took either one or three elective courses in entrepreneurship it was found that 48% of the students with one entrepreneurship elective courses started their business as compared to 26% students in the control group (engineering without entrepreneurship elective). At the time of survey, 32% of those with one elective course in entrepreneurship owned the business as compared to only 19% of those in the non-entrepreneurship group. The study reflects immediate as well as prolonged impact of entrepreneurship education. 32% of entrepreneurship graduates started their business within 2 years and 35% ventured into the business between three to seven years after the completion of course. Time lag for venturing into new business was found to be lower for entrepreneurship graduates. Also in the long run, 70% of entrepreneurship graduate intended to start their own business as compared to 41% for control group graduates. (Menzies & Paradi, 2003).

Varela and Jimenez (2001), in an extensive study of undergraduate alumni of three different universities in California, found significant proportion of students venturing into entrepreneurship in the early career stage and entrepreneurship rates were higher among the universities that had invested more in entrepreneurship guidance and training for their students. This justifies the relevance of various entrepreneurship programs which aim at motivating participants to take up entrepreneurial career. Though most of the researchers have concluded the positive impact of entrepreneurship education, some exceptional studies have also argued no, little or negative impact of such intervention.

Longitudinal study measuring the impact of entrepreneurship education on the actual behaviour (pursuing entrepreneurship) of the individual is spread over years and is highly time consuming. Fayolle & Gailly (2005, 2009) pointed that limiting the impact of entrepreneurship education to immediate venture creation can also be deceptive as there might be delayed impact in some cases which will not be reflected in these studies. Another limitation of measuring actual entrepreneurial behaviour is its multidimensional nature and susceptibility to environmental factors as well as personal choices (Fayolle & Gailly, 2009). Hence majority of impact studies restrict themselves to the indicators of future entrepreneurial actions as systematic measurement of behaviour is difficult. In understanding the impact of entrepreneurship education, the indicators of entrepreneurial behaviour used by researchers as the antecedents of actual behaviour include perception about entrepreneurial career, intention to become entrepreneurs (Kolvereid & Moen, 1997; Cho, 1998; Charney & Libecap, 2000; Noel, 2002; Fayolle & Gailly, 2005; Lee, Chang, & Lim, 2005; McStay, 2008; Fayolle & Gailly, 2009; Tam, 2009; Oosterbeek, Praag, & Ijsselstein, 2010; Sánchez, 2013; Vanevenhoven & Liguori, 2013; Hattab, 2014; Fayolle & Gailly, 2005; Souitaris et al., 2007) and entrepreneurial traits like need for achievement, locus of control, risk taking propensity etc. (Charney & Libecap, 2000; Tam, 2009; Oosterbeek et al., 2010) to establish the merit of such education interventions.

Some researchers have also conducted longitudinal studies and found that entrepreneurship education ultimately lead to the selection of entrepreneurial career by higher percentage of participants as compared those who underwent education in other discipline. But the impact of entrepreneurship education on the intention of the participants to start an entrepreneurial career and its predecessors has gained more momentum after the advent of intention models discussed in Chapter 2. Intention is considered to be much more robust predictor of entrepreneurial behaviour

as compared to traits and demographics. Reviewing the application of various intention models, it was found that Shapero's Entrepreneurial Event model(SEE) proposed by Shapero in 1982 has been widely used throughout the literature by various researchers for measuring the entrepreneurial intention (Krueger & Brazeal, 1994; Krueger et al., 2000; Peterman & Kennedy,2003; Guerrero et al., 2008; Zhang, Duysters & Cloodt, 2014,). Another intention model used prominently for measuring the impact of entrepreneurship education is Theory of Planned Behaviour (TPB) proposed by Ajzen in 1991. Many researchers have substantiated the relevance of Theory of Planned Behavior in measuring impact of entrepreneurship education through empirical studies (Krueger & Carsrud, 1993; Krueger & Brazeal, 1994; Kolvereid, 1996; Tkachev & Kolvereid ,1999; Krueger et al. 2000; Noel,2002; Peterman & Kennedy, 2003; Linan,2004; Fayolle & Gaily, 2005; Souitaris et al., 2007; Gird & Bagraim,2008; Guerrero et al. 2008; Hamidi et al., 2008; Fayolle & Gaily,2009; Fayolle & Gaily,2013; Zhang et al. 2014, Rauch & Hulsink, 2015). Tkachev & Kolvereid (1999) found no significant impact of adding the demographic variables in TPB in enhancing the predictive ability of the model. The three factors of TPB ; attitude, subjective norms and perceived behavioral control were found to be sufficient and significant enough for predicting entrepreneurial intentions.

Krueger et al. (2000) compared the two models (TPB and SEE) for their predictive ability of determining entrepreneurial intention. He found SEE to be slightly more superior, though TPB was found to be equally relevant. All the components of both models except social norms of TPB were found to have significant impact on entrepreneurial intention. Perceived behavioural control of TPB and perceived feasibility of SEE had the most significant impact on the entrepreneurial intention.

Fayolle & Gailly(2005); Fayolle, Gailly, & Lassas-Clerc (2006) undertook grounded theory research to develop a framework for measuring the impact of entrepreneurship education program. The framework developed by them regarded the characteristics of entrepreneurship program as the independent variables. The impact was measured before and after offering the entrepreneurship program by assessing change in the intention and its three antecedents; attitude towards behaviour, subjective norms, perceived behavioural control as proposed by Theory of planned behaviour. Among the three factors, perceived behavioural control was found to explain the maximum variation (45%) in the intention of the entrepreneurs. Fayolle & Gailly(2009; 2013) empirically tested the proposed framework by conducting experiment on French students undergoing

entrepreneurship education programs of different durations. They also added the dimension of personal characteristics to the existing model and specifically explored the moderating role of prior entrepreneurial experience and initial entrepreneurial intention on the impact of entrepreneurship education on entrepreneurial intention. Both the moderating variables were not found to have any positive role in impacting the influence of entrepreneurship education. Also, the impact of longer duration Entrepreneurship Education Program (EEP) was found to be more significant as compared to smaller duration EEPs.

Vanevenhoven and Liguori (2013) in one of the largest study across globe concerning impact of entrepreneurship education i.e. Entrepreneurship Education Project rooted their research on Social Cognitive Theory. The first phase of the research included 18000 students from 70 countries and 400 universities. They proposed that entrepreneurial activity and goal is based on the intention which in turn is primarily influenced by self-efficacy and outcome expectation of the participants. Exposure to entrepreneurship and number of entrepreneurship courses was found to significantly impact the self-efficacy, outcome expectation and goal orientation of the participants.

Another framework for the measurement of the impact of Entrepreneurship education was developed by Danish Foundation for Entrepreneurship. It carried an 18 month long ASTEE project (Assessment Tools and indicators for Entrepreneurship Education) to develop a measurement tool that can help in assessing the impact of entrepreneurship education on knowledge, skills and attitude of the participants. The impact was measured based on five dimensions including skills, knowledge, mindset, connectedness to education and connectedness to future career. The measure of entrepreneurial mind-set was based on self-efficacy, locus of control and self-esteem. The three constructs collectively measured all the aspects of entrepreneurial attitude. The tool was tested across various countries of Europe through quasi experimental approach (Moberg et al., 2014). Hence the literature suggests entrepreneurial intention and its antecedents are the major indicators of influence of entrepreneurship education. Next section of literature review, therefore explores the influence of entrepreneurship education on entrepreneurial intention.

3.2 Impact of Entrepreneurship Education on Entrepreneurial Intention

Most of the studies have found positive correlation between entrepreneurship education and intention (Tan et al.,1996; Kolvereid & Moen, 1997; Henderson & Robertson,1999; Noel, 2002; Fayolle & Gailly, 2005; Fayolle & Gailly, 2009; Souitaris et al., 2007; McStay, 2008; Hamidi et al.,2008; Sánchez, 2011; Farashah,2013; Sánchez, 2013; Vanevenhoven & Liguori, 2013; Hattab,

2014; Bae, Qian, Miao and Fiet, 2014; Zhang et al. 2014; Rauch & Hulsink, 2015). On the contrary some reserachers observed no significant and even negative impact of entrepreneurship education on entrepreneurial intention (Wu & Wu, 2008; Florin, Karri & Rossiter, 2007; Fayolle et al., 2006; Graevenitz, Weber & Harhoff, 2010; Oosterbeek et al., 2010 and Shinnar et al., 2014).

Positive influence of entrepreneurship education on entrepreneurial intention:

Tan et al.(1996) in their study on the university students in Singapore found considerably higher entrepreneurial intention among the business entrepreneurship students as compared to business non- entrepreneurship students, engineering entrepreneurship students as well as engineering non entrepreneurship students. Kolvereid & Moen (1997) found Norwegian university students with entrepreneurship major had significantly higher intentions to start their own business as compared to other business graduates. 67% of UK business graduates who took a course in entrepreneurship intended to start their own buisness as compared to only 5% of non entrepreneurship business groduates (Henderson & Robertson,1999). Fayolle & Gailly (2005, 2009) assessed the impact of entrepreneurship programs of varying durations including one day, three day and seven month EEPs. The results demonstrated significant positive impact all duration entrepreneurship education programs on the entrepreneurial intention of French students.The impact of longer duration EEPs was found to be more prominent as compared to shorter duration EEPs. Also the influence was highest for the participants who had low initial intention to pursue entrepreneurship. Souitaris et al. (2007) conducted similar study on Science and Engineering students at two universities in London and Grenoble (France) to understand the influence of taking a semester course on entrepreneurship. The entrepreneurial intention of the students was significantly higher after the completion of the course and the inspiration from the entrepreneurship education program was found to play a major influential role. While comparing the entrepreneurial intention of the undergraduate students of various programs like Business, Law, IT, Journalism, Biotech etc.; Mc Stay (2008) found no initial significant difference in entrepreneurial intention of the students' from varied programs but a course on entrepreneurship significantly increased the entrepreneurial intention of students compared to those who took a course in straegic management. In a rare research measuring the influence of long duration master's program in entrepreneurship in three different colleges in Sweden, entrepreneurship education students were found to have significantly higher entrepreneurial intentions as compared to master students of other disciplines . The three experimental groups comprised of business students undergoing one year masters program in

entrepreneurship, engineering students and diverse background students undergoing one and half year masters program in entrepreneurship. The control group consisted of students enrolled in one to one and half year masters program in medicine and students enrolled in in one to one and half year masters program in IT and business development or logistics and business development. Very significant difference in the entrepreneurial intention was observed between students pursuing masters in business, engineering and medicine.

Another large sample study in Spain by Sanchez (2011), found entrepreneurial intention of the university students who took an elective course in entrepreneurship increased significantly after the course whereas no significant change was observed in the entrepreneurial intention of control group students. Similar results were obtained for secondary school students by Sanchez (2013). Farashah(2013) in his study based on 601 Iranian students who undertook entrepreneurship education in some form or the other concluded that participation in entrepreneurship education increases the entrepreneurial intention of the participants by 1.3 times. Another global research spanning 70 countries and 400 universities across North America, South America, Europe, Africa and Asia pacific found significant positive relationship between exposure to entrepreneurship education and entrepreneurial intention (Vanevenhoven & Liguori, 2013)

Most of the impact studies pertaining to entrepreneurial education focus on developed countries. In an attempt to understand the relationship between entrepreneurship education and entrepreneurial activity in a developing country, Hattab (2014) compared the entrepreneurial intention of Egypt graduates who had undergone 14-week entrepreneurship program with the intention of engineering students. Entrepreneurship education significantly influenced the entrepreneurial intention in a positive manner. The research also found significant difference among the intention of students who took entrepreneurship course based on their academic majors. Business Studies students had higher intentions of becoming an entrepreneur after the course as compared to computer science students who underwent the same course on entrepreneurship. Another meta-study of 73 studies by Bae et al. (2014) on the influence of entrepreneurship education on entrepreneurial intention amounting to sample size of 37,285 revealed significant positive relationship between entrepreneurship education and intention with correlation of 0.143. Also the relation between entrepreneurship education and intention was found to be significantly stronger than the relationship between business education and entrepreneurial intention. The correlation between the latter was only 0.051.

Insignificant or negative influence of entrepreneurship education on entrepreneurial intention:

Shinnar et al. (2014) in their study on undergraduates in USA did not observe any significant change in the entrepreneurial intention of the students at the end of semester long entrepreneurship program. In fact, the entrepreneurship intention of male students increased whereas those of female students decreased but none of the two changes was found to be statistically significant. Wu & Wu (2008) also did not find any significant relation between entrepreneurship curriculum and entrepreneurship intention among the university students of Shanghai, China. In another study by (Florin et al., 2007), the researchers concluded that entrepreneurial drive of the undergraduate business students could not be attributed to the specific courses studied by them.

Graevenitz et al. (2010) found negative influence of compulsory semester long entrepreneurship course on the undergraduate business students at one of the largest universities in Germany. They proposed that the course helped the participants in understanding their entrepreneurial aptitude in a better way and hence the impact was more prominent for the students who were indecisive before the course as compared to those with stronger positive or negative intentions before the beginning of the course. Similar results with respect to negative influence of entrepreneurship education on intention were observed by Oosterbeek et al.(2010). The result of two studies differ on the impact of entrepreneurship education on the student's self assesment of their entrepreneurial skills. The latter found the impact to be insignificant whereas former research attributed the negative influence on intention to increased self assesment of entrepreneurial skills.

Studies have also been undertaken to understand the role of moderating variables like duration of entrepreneurship education program, content of entrepreneurship education, development level of entrepreneurship in the country where the program is offered etc. in influencing the impact of entrepreneurship education on entrepreneurial intention. According to Bae et al. (2014), the duration of entrepreneurship education ranging from workshop to semester long courses do not significantly influence the impact of entrepreneurship education on changing entrepreneurial intention. Even the moderating role of content of entrepreneurship education (venture creation vs. business planning) was found to be insignificant. However, the level of development of entrepreneurship in the country was found to influence the impact of entrepreneurship education on the intention of the participants. Lee et al. (2005) suggested that the impact of entrepreneurship education on the entrepreneurial intention is much higher in the countries where entrepreneurship is in the embryonic phase as compared to the entrepreneurially oriented countries. A distinctive

study by Noel (2002) examined the role of time period after the course in influencing the impact of entrepreneurship education on the intention. Though the majors in entrepreneurship increased the entrepreneurial intention even one year after the course, entrepreneurial graduates had much stronger intention to pursue entrepreneurship two or five years after the course as compared to one year after the course.

The studies on entrepreneurial intention reveal mixed findings regarding the influence of entrepreneurship education though most of the studies are optimistic about the role of entrepreneurship education. The most prominent construct that found notable and repeated mention in majority of studies measuring entrepreneurial intention is entrepreneurial self-efficacy. Hence, the next section of literature review explores the concept of entrepreneurial self-efficacy and its predictive ability to determine entrepreneurial intention.

3.3 Entrepreneurial Self-efficacy (ESE)

Self-efficacy is defined as one's belief in his/her capability to perform a particular task (Gist, 1987). The concept of self-efficacy evolved from the Social Learning Theory proposed by Bandura in 1977.

Chen et al. (1998) defined entrepreneurial self-efficacy as the '*strength of a person's belief that he or she is capable of successfully performing the various roles and tasks of entrepreneurship involving marketing, innovation, management, risk-taking and financial control*'. It is not concerned with the skills possessed by the individual but the judgment of the person about what he/she can do with the skills possessed by him/her. It is believed that an individual determines the kind of activity to undertake, amount of effort to put in that activity and ways of enduring through hindrances on the basis of one's self-efficacy (Bandura, 1977b).

The concept of self-efficacy has been extensively used in measuring the career decisions throughout the literature. The relationship between career choice and self-efficacy is well established (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Betz & Hackett, 1981; McLellan, Barakat, & Winfield, 2009). Pursuance of entrepreneurship being a career choice decision reinforces the relevance of self-efficacy as a predictor of the future action of the prospective entrepreneurs. Hence, self-efficacy appears as a robust and legitimate construct that can be used to envisage the decision of the individuals to pursue entrepreneurship. In fact, entrepreneurial self-efficacy not only helps to predict entrepreneurial behaviour, but is found to have lasting legacy on venture growth and success (Barakat et al., 2010).

The existing contemporary literature primarily assesses the impact of entrepreneurship education by either measuring its influence on entrepreneurial intention or its determinants. Among the antecedents of entrepreneurial intention, entrepreneurial self-efficacy has consistently stood out as the highest influencing factor. Boyd and Vozikis (1994) proposed that entrepreneurial self-efficacy predicts the strength of entrepreneurial intentions as well the likelihood of transformation of entrepreneurial intentions into entrepreneurial actions. A robust body of research in the field of entrepreneurship has explicitly investigated the relationship between entrepreneurial self-efficacy and entrepreneurial intention. There is a general agreement among researchers that change in the 'self-efficacy' can be considered as one of the important criteria for measuring the impact of entrepreneurship education due to the significant predictive ability of self-efficacy in determining entrepreneurial intention and actions (Boyd & Vozikis, 1994; Krueger & Brazeal, 1994; Davidsson, 1995; Kolvereid, 1996; Chen et al., 1998; Krueger et al., 2000; Segal et al., 2002; Fayolle & Gailly, 2005; Kickul & D'Intino, 2005; Sequeira et al., 2007; McStay, 2008; Hamidi et al., 2008; Mc Gee et al., 2009; Sanchez, 2011, Sánchez, 2013; Liñán, Cohard & Cantuche, 2011; Farashah, 2013; Malebana & Swanepoel, 2014; Shinnar et al., 2014). Very few studies lead to contradictory findings of no significant relation or negative relation between self-efficacy on entrepreneurial intention (Noel, 2002; Zhang et al. 2014). Noel (2002) in their study of 84 undergraduate business course alumini with entrepreneurship major, major other than entrepreneurship and non business course alumini, found no significant correlation between entrepreneurial self-efficacy and entrepreneurial intention. But he attributed it to the lower sample size of the research. Zhang et al. (2014) held negative environmental components in China like administrative complexities, access to finance, and general economic climate as responsible for negative correlation between self-efficacy and intention.

Zhao et al. (2005) evaluated various models for the prediction of entrepreneurial intention found that the impact of all factors on entrepreneurial intention including entrepreneurship education is fully mediated through the self-efficacy. The models proposing the direct influence of education, risk propensity and gender on the entrepreneurial intention were empirically disproved. In a study by Hattab (2014), 95% of the variation in entrepreneurial intention was attributed to perceived desirability and self-efficacy. High entrepreneurial self-efficacy increases the perception of venture feasibility and opportunity (Krueger et al., 2000) thereby not only directing entrepreneurial behaviour but also influencing venture growth and success (Barakat et al., 2010).

Various studies suggest that ‘self-efficacy enhancement’ should be the guiding principle while designing any entrepreneurship program and can be used for evaluating entrepreneurship education programs studies (Chen et al.,1998; Tkachev & Kolvereid ,1999; Peterman & Kennedy, 2003; McStay, 2008; Mclellan et al., 2009; Barakat et al., 2010; Liñán, et al., 2011).

Moreover, as proposed by the self-efficacy theory, self-efficacy is not a static trait, it can be developed and enhanced through various measures. As the social, cognitive, linguistic and physical skills of the individual improve through various experiences and education, one’s self belief in the activities he/she can carry out, also increases. The various sources of increasing the self-efficacy include enactive mastery, modeling, verbal persuasion and emotional arousal (Bandura,1982). Enactive mastery is expected to be most effective enhancer of self -efficacy followed by modeling through successful experience of other people (Gist,1987). The various components of entrepreneurship education like preparing business plan, conducting feasibility studies, simulation exercises etc. can potentially enhance the confidence of the participants in their abilities related to starting and running a business (Wilson, Kickul & Marlino, 2007). Training in particular task strategies also enhance the self-efficacy of the individuals (Locke, Frederick, Lee & Bobko, 1984). Entrepreneurial self-efficacy is that distinctive characteristic of an entrepreneur which demonstrates predictive validity of an individual becoming an entrepreneur (Mclellan et al., 2009). Based on the implications from previous researches, self-efficacy can be regarded as the most important explanatory variable for evaluating the effectiveness of entrepreneurship education in influencing the participants to pursue entrepreneurship. The following section deliberates on the findings of the previous studies related to influence of entrepreneurship education on entrepreneurial self-efficacy.

3.4 Impact of Entrepreneurship Education on Self-Efficacy

The consistent findings of the literature regarding the high predictive ability of ‘self-efficacy’ in determining entrepreneurial intention, action as well as performance has led to the inclusion of the construct of self-efficacy in most of the researches attempting to establish the influence of entrepreneurship education in the 21st century. Entrepreneurship education is found to have significantly positive impact on the self-efficacy of the participants (Chen et al.,1998; De Noble, Jung & Ehrlich,1999; Peterman & Kennedy,2003; Zhao et al., 2005; Alvarez, Noble & Jung, 2006; Cooper & Lucas, 2006; Wilson et al., 2007; Kilenthong, Hills & Monllor, 2008 ; Mclellan et al., 2009; Barakat et al., 2010; Graevenitz et al., 2010; Sánchez, 2011; 2013; Bernstein & Carayannis,

2012; Fayolle & Gailly, 2013; Vanevenhoven & Liguori, 2013; Karlsson & Moberg, 2013; Farashah, 2013; Malebana & Swanepoel, 2014; Shinnar et al., 2014; Rauch & Hulsink, 2015; Ho, Uy, Kang & Chan, 2018)

Positive influence of entrepreneurship education on entrepreneurial self-efficacy:

One of the landmark research exploring self-efficacy and entrepreneurship education intervention at a northeastern university in United States compared the entrepreneurial self-efficacy of MBA students who had undertaken entrepreneurship course with the entrepreneurial self-efficacy of the students who opted for organization behavior and psychology course. Students from entrepreneurship class had significantly higher self-efficacy as compared to the other two groups. Also the students from organizational behavior course had higher entrepreneurial self-efficacy as compared to psychology students as the former course was comparatively more related to entrepreneurship course. Among all the dimensions of self-efficacy considered for the research, the main impact of entrepreneurial education was observed in the self-efficacy related to marketing, management and financial control (Chen et al., 1998).

Another significant research measuring the influence of entrepreneurship education on the entrepreneurial self-efficacy of the participants conducted by De Noble et al. (1999) found significant difference among entrepreneurship graduates and other business graduates at a public university in Southwestern United States. Entrepreneurship graduates had significantly higher self-efficacy than other management graduates pertaining to opportunity recognition and dealing with unexpected challenges. However, management graduates fared better than entrepreneurship students in the self-efficacy for defining core purposes and maintaining investor relationships but the difference was not statistically significant. Wilson et al. (2007) examined the influence of entrepreneurship education on the entrepreneurial self-efficacy of MBA students across 7 universities in USA. The results revealed significant increase in self-efficacy of the participants. Similar study examining the influence of entrepreneurship education on MBA students across 5 universities in USA was conducted by Kilenthong et al. (2008). They observed that students who undertook entrepreneurship major depicted higher self-efficacy in business related tasks as compared to other MBA students. The undergraduate students at mid-Atlantic research university who opted for entrepreneurship major as well as entrepreneurship elective had higher self-efficacy of pursuing the career in entrepreneurship. Results also suggested that students with

entrepreneurship majors would have more successful entrepreneurial career as compared to those with non-entrepreneurship major (Bernstein & Carayannis ,2012).

Peterman & Kennedy (2003) in their study of secondary school students at Queensland, found significant increase in the perceived feasibility (self-efficacy) of participants who took course in entrepreneurship as compared to those who did not opt for the course. Another study on secondary school students in Spain by Sanchez (2013) revealed similar results; self-efficacy of the treatment group who underwent a semester course in entrepreneurship increased significantly after the program. Sanchez (2011) also observed similar results with respect to the significant increase in the self-efficacy of post graduate students in Spain who underwent 8 month elective course in entrepreneurship. Graevenitz et al. (2010) found significant increase (7%) in the perceived feasibility of performing entrepreneurial tasks among German students at a management school in Munich after a semester long course on business planning.

Studies have also concluded on the endurance of the positive impact of entrepreneurship education on the entrepreneurial self-efficacy of the participants, months and years after the completion of the course by conducting delayed post-tests. Mclellan et al. (2009) analysed and empirically tested the measuring instrument for the different components of entrepreneurial self-efficacy that results from various types of entrepreneurship education intervention. Building upon the study, the researchers, along with (Barakat et al., 2010) conducted a longitudinal study on the post graduate students of five different cohorts who underwent the 4 day intensive Enterpriser program designed specifically to enhance the self-efficacy of the participants. The self-efficacy of the participants increased significantly on all the dimensions taken into consideration including norm and criterion referenced general entrepreneurial self-efficacy, problem solving skills self-efficacy as well as group inter personal skills self-efficacy. The increased level of self-efficacy sustained even six months after the completion of the program. Norm referenced problem solving self-efficacy scores in fact increased significantly from post-test to delayed post-test conducted 6 months after the completion of the program. Another research investigating the delayed impact of entrepreneurship program by Cooper & Lucas (2006) also revealed persistence of the influence of the 4-day Enterpriser program six months after completion. Post-test self-confidence of the participants on performing entrepreneurial tasks increased on all the parameters with the highest increase in self-efficacy of understanding what it takes to start a business as well as starting a successful business. Implication from this research indicated that the influence of entrepreneurship education is not

short lived; it endures over the time and actually increases the self-confidence of the participants in their own ability to perform entrepreneurial tasks. Similar evidence of increased entrepreneurial self-efficacy six months after the three-day entrepreneurship education intervention was also observed in the study of 275 French management masters' degree students (Fayolle & Gailly,2013).

Farashah (2013) in his study on entrepreneurship training program in Iran observed increased self-efficacy of the participants due to increase in knowledge and skills required for starting a business. Karlsson & Moberg (2013) explored the influence of entrepreneurship education in Denmark on the entrepreneurial self-efficacy with respect to different tasks of searching, planning, marshalling, implementation of human resources and implementation of financial resources. Entrepreneurship education increased all task specific entrepreneurial self-efficacy though significant increase was observed in planning, searching and marshalling. The self-efficacy of the participants increased the most in the task involed during the planning phase of the venture creation. The increase in self-efficacy was significantly more strong for the students with low initial self-efficacy as compared to those with high initial self-efficacy. For the control group consisting of marketing management masters' students, none of the five constructs of entrepreneurial efficacy depicted significant increase. The planning self- efficacy of the control group, infact decreased after the course. Another research measuring the influence of entrepreneurship education on all the above mentioned phases of entrepreneurship was conducted by Malebana & Swanepoel (2014) in two rural universities of South Africa. They explored the the difference in the task specific self-efficacy of three groups of students viz. students undertaking three year course in entrepreneurship, students undertaking one semester introductory course in entrepreneurship and students with no exposure to entrepreneurship course. The groups differed significantly in self-efficacy related to all three tasks of the searching phase, two out of four tasks of planning phase, two out of six tasks of marshalling phase and seven out of eleven tasks of implementation phase. Though significant difference was observed in the self-efficacy of the participants who underwent entrepreneurship education in all the phases of entrepreneurship life cycle but the influence of entrepreneurship education was more pronounced on the activities involved in searching and implementing phase. The extent of exposure to entrepreneurship education also significantly influenced the self-efficacy of the participants. The participants who were exposed to semester course in entrepreneurship had significantly higher self-efficacy as compared to those with no exposure to entrepreneurship

education on only four parameters of self- efficacy out of 24 whereas as the students with three year course in entrepreneurship had significantly higher self-efficacy on twelve parameters out of 24 when compared with those with no exposure to entrepreneurship education.

Zhao et al. (2005) found entrepreneurship education as the most significant variable influencing the entrepreneurial self-efficacy amongst all other variables like gender, prior entrepreneurial experience and risk propensity in his study across 5 different universities in USA. The respondents with higher components of entrepreneurship education during their MBA program reported higher self-efficacy as compared to others. Tam(2009) in his dissertation, quantitatively as well as qualitatively verified the significant positive impact of entrepreneurship education on the entrepreneurial attitude amongst the students of Technology Management Program (TMP) at the University of California. The change in attitude towards entrepreneurship at the end of the course was significantly contributed by increase in self-efficacy and innovation of the participants. Another USA based study of undergraduate students who underwent a semester long compulsory course in entrepreneurship found significant increase in the entrepreneurial self-efficacy of the students at the end of the program though the increase was more pronounced in case of male students than female students (Shinnar et al., 2014). Alvarez et al. (2006) investigated the perception of the students of three major universities in Mexico regarding the influence of entrepreneurship education on the self-efficacy of the respondents. Though entrepreneurship education in Latin America is less developed as compared to USA, but business graduates who were offered elective courses in entrepreneurship had higher correlation between exposure to entrepreneurship education and their self-efficacy as compared to engineering, law and architecture students.

Rauch & Hulsink (2015) compared the entrepreneurial self-efficacy of MSc. Entrepreneurship and MSc. Supply Chain students of Rotterdam School of Management in Netherland. The two groups were found to have significantly different self-efficacy indicating positive impact of entrepreneurship training on self-efficacy of participants. The study also revealed significant positive impact of entrepreneurship education on the actual entrepreneurial behaviour of venture creation through delayed post test conducted 18 months after the post-test.

Ho et al. (2018) in their study on the impact of entrepreneurship training on the entrepreneurial self-efficacy and alertness on the secondary school students found significant impact on the self-efficacy of the participants related to entrepreneurial mindset, entrepreneurial skillset as well as

entrepreneurial alertness related to scanning, searching, evaluating and judging the idea for new venture.

Insignificant or negative influence of entrepreneurship education on entrepreneurial self-efficacy:

In contrast to the above studies, some studies have also resulted in partial (Tan et al., 1996; McStay, 2008; Farashah, 2013) and neutral (Noel, 2002; Souitaris et al., 2007; Oosterbeek et al., 2010; Bergman, Rosenblatt, Erez, & Haan, 2011; Hattab, 2014; Fayolle & Gailly, 2005; 2013) impact of entrepreneurship education on the self-efficacy of the participants. An exceptional study by Cox, Mueller & Moss (2002) found the impact of entrepreneurship education on the self-efficacy of the participants to be negative.

Some studies found the impact of entrepreneurship education on the self-efficacy of the participants to be significantly different as compared to the impact of education in other disciplines but not significantly different from the impact of business education. Tan et al. (1996) in their study of undergraduate students from a Polytechnic in Singapore found the significant difference in the self-efficacy of business entrepreneurship students when compared to engineering non-entrepreneurship students as well as in comparison to engineering entrepreneurship students. But no significant difference was observed in the self-efficacy of business entrepreneurship students as compared to business non-entrepreneurship students. McStay (2008) in his dissertation also observed only partial impact on the self-efficacy of undergraduate students who underwent 14-week entrepreneurship course at an Australian university. There was significant difference in the self-efficacy of the students before and after the entrepreneurship course but there was no significant difference in the self-efficacy of students who took entrepreneurship as compared to those who studied strategic management after undergoing respective courses for a semester. Both the courses increased the self-efficacy of their respective participants to the similar extent.

Farashah (2013) examined the influence of different kinds of entrepreneurship education offered to Iranian students. He observed that significant impact on self-efficacy can be concluded only for those undertaking entrepreneurship training under the employers or informal training whereas other forms of entrepreneurship education like school, university, government or online programs were unable to bring any significant difference in the self-efficacy. The lack of influence was attributed to the inability of these programs to inculcate the skills and knowledge required in real business scenario. Segal et al. (2007) conducted another exploratory study surveying the

perception of entrepreneurship educators regarding the influence of different components of entrepreneurship education on the self-efficacy of the participants. They found that internships, formal mentoring by entrepreneurs, starting a business, role play and consulting projects undertaken as a part of entrepreneurship education are more influential in enhancing the entrepreneurial self-efficacy.

In a study by Noel (2002) at mid-sized university in USA, no significant difference was noticed in entrepreneurial self-efficacy as well as general self-efficacy of the participants who took entrepreneurship majors at undergraduate business course in comparison to those who took other business major courses in discipline other than entrepreneurship. Souitaris et al. (2007) also found no significant difference in the self-efficacy of science and engineering students of esteemed university in London and Grenoble after undertaking a course in entrepreneurship. It was argued that the initial self-efficacy of students was quite high as they belonged to highly reputed universities, hence the change in self-efficacy through entrepreneurship course intervention was insignificant. Similarly, no significant impact was observed on self-assessed entrepreneurial skills (and traits) like need for achievement, market awareness, creativity, risk taking propensity, self-efficacy of the respondents who undertook a yearlong student mini-company program at a vocational college in the Netherlands (Oosterbeek, et al. , 2010). Graevenitz et al. (2010) found similar results with semester long course offered to graduate students at German university. A study on the influence of one-year entrepreneurship training program on the high school students in Israel by Bergman et al. (2011) also demonstrated no significant impact on the self-efficacy of the participants. The self-efficacy of the female students', in fact declined at the end of the program as compared to their initial self-efficacy.

Fayolle & Gailly (2005,2013) also did not find any significant impact of entrepreneurship education intervention (one day ETP) on the self-efficacy of French engineering and management students respectively. Although the ETP enhanced the confidence of the participants regarding entrepreneurial tasks but it also acquainted them with the hardships faced in pursuing entrepreneurship. Hence the impact of the ETP was positive but not significantly higher immediately after the program. Hattab (2014) in his study on the impact of 14-week entrepreneurship module offered to undergraduate students in Egyptian university found no impact of entrepreneurship education on the self-efficacy of the participants though the perceived desirability increased as a result of the intervention. Cox et al. (2002), in-fact discovered in their

study that self-efficacy of the students after the introductory course in entrepreneurship was lower after the course as compared to before the course. The major limitation of these studies as cited by the researchers themselves included very small sample of French students in a study by Fayolle & Gailly (2005) and sample of students from only one university in a study by Hattab (2014). Cox et al. (2002) cited that the course was mainly aimed at building awareness and group of students had no prior or very little exposure to entrepreneurship.

Based on the literature survey of studies pertaining to influence of entrepreneurship education it can be concluded that pre-dominantly the studies can be classified into two categories:

a) Studies comparing ESE of participants before undertaking entrepreneurship education *vis-a-vis* their ESE after taking entrepreneurship education of varied durations

Most of these studies (Peterman & Kennedy, 2003; Wilson et al.,2007; McStay,2008; Graevenitz et al.,2010; Barakat et al., 2010; Sanchez,2011;2013; Farashah, 2013; Ho et al.2018) concluded significant influence of entrepreneurship education on the ESE of participants. Some of the researchers (Tam, 2009; Karlsson & Moberg, 2013; Malebana & Swanepoel, 2014; Shinnar et al., 2014) found partial influence of entrepreneurship education in terms of significant difference in ESE on some of the parameters of ESE and other parameters remaining unaffected. Another group of studies (Fayolle & Gailly, 2005; Souitaris et al., 2007; Oosterbeek, et al.,2010; Graevenitz et al., 2010; Bergman et al., 2011; Fayolle & Gailly, 2013; Hattab, 2014) revealed no significant difference in the ESE of respondents with and without entrepreneurship education. The varied results among these studies represents an unpretentious need to understand the influence of entrepreneurship education in the Indian context.

Hypothesis 1: There is significant difference in the ESE of individuals with entrepreneurship education as compared to those without entrepreneurship education.

b) Studies comparing ESE of students undertaking entrepreneurship education vis a vis ESE of students taking other business majors or non-business majors

With respect to the second category of studies, mixed results have been observed. Though majority of studies found significant difference between ESE of students undertaking entrepreneurship education as compared to non-business education but there is no consensus among researchers

regarding significant difference in ESE of those undertaking entrepreneurship education compared to those pursuing other business majors. Some studies (Chen et al.,1998; De Noble et al., 1999; Kilenthong et al., 2008; Rauch & Hulsink 2015) revealed significant difference between these groups whereas other studies (Tan et al. ,1996; McStay,2008; Noel, 2002) did not find any significant difference between ESE of entrepreneurship major students vis a vis other business major students. In this context, it is meaningful to substantiate whether ESE of entrepreneurship graduates is different than management graduates

Hypothesis 2: *There is significant difference in the ESE of entrepreneurship education candidates as compared to management education candidates.*

Literature review also indicates that entrepreneurship education has lesser impact on the ESE of respondents with higher initial ESE as compared to those with lower initial ESE (Fayolle & Gailly, 2005; 2009; Karlsson & Moberg, 2013). This suggest that if the initial ESE of entrepreneurship graduates is different than the initial ESE of management graduates, their respective education may influence the ESE differently which may provide further insights into the results. Hence, it seems prudent to verify the differences in the initial ESE of management and entrepreneurship graduates before pursuing education.

Hypothesis 3: *There is significant difference in the ESE of entrepreneurship graduates as compared to management graduates.*

3.5 Entrepreneurial self-efficacy and entrepreneurial performance

Most of the previous studies are univocal about the relation between self-efficacy and the subsequent task performance (Bandura & Adams,1977; Bandura, 1977b ; Bandura, Adams, Hardy, & Howells, 1980; Bandura, 1982; Gist, 1987; Markman, Balkin, & Baron, 2002). According to Self-efficacy theory, outcome expectancies and self-efficacy expectancies are the two major influencing agents of the behaviour. The latter is found to be even more powerful predictor of behaviour than outcome expectancy and past performances. Difference in the past experiences and attribution of success to skill or chance, leads to the difference in the level of generalized self-efficacy expectations. Personal mastery expectations enhance self-efficacy only for those individuals who attribute success to skills (Bandura, 1977b). The change in self-efficacy leads to

the change in performance. The greater the increment in perceived self-efficacy, higher would be the performance accomplishments (Bandura, 1977b; 1982).

The people's judgment of their capabilities to organize and execute activities required to accomplish the dedicated task determine their performance (Bandura, 1989; Markman et al., 2002; Mclellan et al., 2009). Their level of motivation, affective states and actions are based more on what they believe rather than objective ability. Bandura et al. (1980) provided the evidence for the predictive generality of self-efficacy theory across the different behavioural domains. They later emphasized that the task specific tailored self-efficacy measure should be used to predict the performance of the individual in that particular domain (Bandura, 1982). Bandura's claim was reiterated in the research by Locke et al. (1984) who found the magnitude as well as strength of self-efficacy is the key determinant of task performance, goal choice, goal level and goal commitment. The predictive ability of self-efficacy becomes even higher for moderate to highly difficult tasks as compared to easy tasks. The research was based on sample of 209 introductory management course students in USA. Though self-efficacy is more related to past performance than the future performance but even when the past performance was partially led out, significant correlation was observed between self-efficacy and future performance. The research also found higher explanatory power of self-efficacy in determining the performance as compared to other factors like ability, strategies used and strategy training. Self-efficacy, therefore is the key factor in determining human agency (Bandura, 1989).

Self efficacy not only determines human behavior towards initiating a task, but also contributes significantly to the work performance. It regulates the amount of effort individual will exert, the level of goals he/she would set for himself/herself and the amount of perseverance during the challenges encountered. Higher entrepreneurial self-efficacy leads to higher goal setting as well as higher persistence during adversities particularly during launching new venture (Bandura, 1986). Chandler & Jansen (1992) in an extensive study of the entrepreneurs across five industries in manufacturing as well as service sector in Utah (USA) found the significant influence of self-efficacy of the entrepreneurs on the performance of their venture. On the contrary, the influence of prior work experience as well number of previous business ventures was found to be insignificant. Owners of highly successful ventures were reported to have high self-efficacy with respect to opportunity recognition, organizational skills as well as inter personal skills. In fact, high growth business venture owners had high self-assessed competencies in entrepreneurial,

managerial as well as technical-functional role. These three domains have been identified as the most important and necessary for an entrepreneur in the entrepreneurship literature. Also, a meta-analysis based on 114 previous studies of self-efficacy found a significant weighted average correlation with r value of 0.38, between self-efficacy and work-related performance (Stajkovic & Luthans, 1998).

Anna, Chandler, Jansen, & Mero (2000) in their study of women entrepreneurs in Utah and Illinois found that self-efficacy is the determining factor in the selection of nature of business as well as its success. The different skill specific venture self-efficacy consist of self-efficacy for opportunity recognition, economic management, human competence and planning. Women with higher self-efficacy for opportunity recognition were found to be engaged in traditional businesses whereas those with higher self-efficacy for planning opted for non traditional business. The success of women in traditional as well as non traditional business was impacted by their self-efficacy. For the women involved in traditional business, positive correlation was observed between the success of the venture and opportunity recognition self-efficacy as well as economic management self-efficacy. Though for the same group of women, planning self-efficacy was negatively related to the sales. On the contrary, the success in non traditional business was positively related to planning self-efficacy. Another longitudinal study extending over six years involving large number of entrepreneurs and CEO's from architectural woodwork industry in North America found significant relation between self-efficacy and venture growth. Higher self-efficacy for venture growth resulted in high goal setting and high goal setting subsequently resulted in higher growth of venture (Baum and Locke, 2004).

Higher self-efficacy also leads to better opportunity recognition by the entrepreneurs as well as increase in the trust of the entrepreneurs among other network entrepreneurs. The knowledge gained by entrepreneurs from trusted peers helps in advancing entrepreneurial opportunities. The positive impact of higher trust (on other entrepreneurs) on the opportunity recognition is moderated by the self-efficacy of the entrepreneurs. Entrepreneurs with low efficacy are benefitted less from formal learning networks and have lesser capacity to act upon business opportunities at low as well as high trust levels (Bergh, Thorgren & Wincent, 2012).

3.6 Scale for Measuring Entrepreneurial Self-Efficacy

Self-efficacy can be measured at different levels including global level, domain specific level and task specific level. The initial attempt to develop a self-efficacy scale measuring self-efficacy of

the respondents independent of specific situation or behaviour was undertaken by Sherer et al. (1982). Their scale consisted of 23 items including 17 generalized self-efficacy measures and 6 social self-efficacy measures. General self-efficacy focused on willingness to initiate behaviour, willingness to expend effort in completing the behaviour and persistence in the face of adversity whereas social self-efficacy measured self-efficacy of the respondents in social situations.

As self-efficacy has been regarded as one of the most significant factors in determining career choice of an individual, researchers attempted to develop measures for studying the occupational self-efficacy of the students. The first systematic instrument for measuring occupational self-efficacy was Occupational Self-Efficacy Scale (OSSES) developed by Betz & Hackett (1981). The scale measured occupational self-efficacy of the students on a ten-point scale for 20 most common and well known occupations. The list consisted of 10 traditionally male dominated and 10 traditionally female dominated occupations. The scale was meant to measure self-efficacy of the respondent for completing the educational requirement and job tasks for the specified occupations. Following it, various other researchers worked on developing scales for measuring the occupational self-efficacy of the students. Taylor & Betz (1983) developed Career Decision Making Self-Efficacy Scale (CDMSE) consisting of 50 items measuring self-efficacy on different tasks required for making career decision. These tasks pertain to five areas that include (a) accurate self-appraisal, (b) gathering occupational information, (c) goal selection, (d) making plans for the future, and (e) problem-solving. The scale was found to be too long and hence was shortened by Betz, Klein & Taylor (1996) to 25 item scale retaining all the five subscales without compromising on its validity and reliability. The modified scale was known as Career Decision Making Self-Efficacy Scale Short Form (CDMSE-SF scale). But all these studies measured the belief of the respondents in their capability to undertake educational pre-requisite and perform general work requirement for various broadly defined occupations rather than the self-efficacy for specific work task required for these occupations. Bandura (1977b) proposed that self-efficacy should be studied at task level rather than occupational level. The respondents should be asked to rate their confidence in performing different levels of task demands to understand their self-efficacy. The task based self-efficacy is expected to have greater predictability as compared to the domain specific self-efficacy (Couetil, 2013).

Osipow & Rooney (1989); Bores-Rangel, Church, Szendre & Reeves (1990) and Matsui & Tsukamoto (1991) were the pioneers in developing the instrument for measuring task specific

occupation self-efficacy unlike the occupational self-efficacy measures in the previous instruments. Osipow & Rooney (1989) developed 230 item instrument measuring the task specific occupational self-efficacy for 66 discrete occupations identified on the basis of 'selected characteristics of occupation' defined in the Dictionary of Occupational Titles published by U.S. Employment Service in 1981. Self-efficacy for each group was measured with the help of four or five items representing tasks required for that particular occupation. The instrument measured self-efficacy on a five-point scale from 'no confidence' to 'absolute certainty'. This was the first scale used to measure task specific career self-efficacy in U.S. (Lucas, Wanberg, & Zytowskim, 1997). Bores-Rangel et al. (1990) developed self-efficacy scale based on the United States Employment Service (USES) Interest Inventory that comprised of general as well as task specific measure. The scale consisted of 67 occupational task self-efficacy items, each measuring a specific occupation title. The ten point likert scale developed by Matsui & Tsukamoto (1991) consisted of 60 task specific items measuring self-efficacy for 30 different occupations. The scale was used to measure the gender differences in the self-efficacy of Japanese students. Both these scales measured the strength of the self-efficacy but not the level of self-efficacy.

Rooney & Osipow (1992) measured the task specific self-efficacy of students enrolled in psychology and journalism course at mid-western USA university using the scale developed by Osipow & Rooney (1989). The research found significant difference in self-efficacy of male and female for large number of tasks; females had higher self-efficacy in tasks involving social skills and social service items whereas males reported higher self-efficacy in task involving physical activity, coordination, and supervision. The research results supported the usefulness of measuring the task specific occupational self-efficacy. The study validated the comprehensiveness of the instrument as it covered almost all the occupational sub tasks but found it to be right skewed. Most of the respondents reported high self-efficacy on majority tasks. The skewness may be attributed to limited range of choice offered by five-point scale as well as lack of specification in the wordings of the questions to enable differentiation of efficacy estimates. Also the scale was found to include most of the items measuring self-efficacy on easy tasks only resulting into high reported self-efficacy. Moreover, the instrument was too lengthy to be used in most of the cases. The length of the questionnaire was reduced to 60 item sub scale consisting of 15 items for four identified sub scales by using exploratory factor analysis by Osipow, Temple, & Rooney (1993). The shortened version of the questionnaire depicted weak replication when applied to other studies.

In order to overcome the limitations of the existing task specific scales; Lucas et al. (1997) developed 30 item career task self-efficacy scale known as Kuder Task Self-Efficacy Scale (KTSES) to propose a more robust instrument for measuring task specific self-efficacy for various occupation. The scale was designed to assess task-specific self-efficacy levels for thirty occupations corresponding to ten occupational interests including musical, artistic, mechanical, scientific, outdoor, clerical, computational, literary, social service and persuading interests. Measurement on this 5-point Likert scale ranged from ‘no confidence’ to ‘absolute confidence’. The reliability and validity of the scale was measured with the sample of 350 students at mid-western university which provided satisfactory results. Table 3-1 depicts the evolution of early self-efficacy scales.

Table 3-1: Evolution of early self-efficacy scales

S.No.	Year	Authors	Content of the scale
General Self-Efficacy			
1.	1982	Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers	First general self-efficacy scale consisting of 23 items (17 generalized self-efficacy measures and 6 social self-efficacy measures)
Occupational Self-Efficacy			
2.	1981	Betz and Hackett	Occupational Self-Efficacy Scale
3.	1983	Taylor and Betz	Career Decision Making Self-Efficacy Scale(CDMSE)
Task specific self-efficacy			
4.	1989	Osipow and Rooney	230 item instrument measuring the task specific occupational self-efficacy for 66 discrete occupations
5.	1990	Bores-Rang1 et al.	67 item instrument measuring occupational task specific self-efficacy
6.	1991	Matsui and Tsukamoto	60 item instrument measuring occupational task specific self-efficacy 30 different occupations
<i>Table 3-1 continues on next page</i>			

S.No.	Year	Authors	Content of the scale
7.	1993	Osipow, Temple, & Rooney	Shortened Osipow and Rooney(1989) 230 item scale to 60 item scale
8.	1996	Betz, Klein and Taylor	Career Decision Making Self-Efficacy Scale-Shortened Form(CDMSE-SF)
9.	1997	Lucas, Wanberg, & Zytowskim	30 item Kuder Task Self-Efficacy Scale (KTSES)

There is a debate whether general occupational task specific self-efficacy construct is sufficient or specific ESE construct is required for measuring the self-efficacy of entrepreneurs with precision. As entrepreneur requires a diverse skill set, the scales developed for measuring task level occupation self-efficacy may be considered comprehensive for the purpose. Another school of thought believes that the entrepreneurial task specific self-efficacy measure would have much better predictive power about the outcomes of interest.

Chen et al.(1998) developed a scale for measuring entrepreneurial self-efficacy at the task level. The scale developed by them was the first attempt to facilitate measurement of task specific entrepreneurial self-efficacy thereby providing a means to distinguish entrepreneurs from non-entrepreneurs. The tasks performed by an entrepreneur were selected based on several previous literature focusing on role-task approach to entrepreneurship and by conducting interviews with local entrepreneurs. Six entrepreneurial roles including innovator, risk taker and bearer, executive manager, relation builder, risk reducer, and goal achiever were identified for framing the instrument. The instrument measuring self-efficacy for performing six roles consisting of 36 tasks was developed and validated with the help of 30 graduate business students. Consequently, ESE scale consisting of 26 items measuring five dimensions of entrepreneurship was empirically tested with 315 respondents. The application of scale on the large sample resulted in the refined instrument consisting of 22 items measuring five entrepreneurial roles including marketing, innovation, management, risk taking, and financial control. They suggested measurement of overall ESE by calculating average self-efficacy score of all 22 tasks and role specific self-efficacy by averaging score of items within each of the five entrepreneurial roles. The majority of the studies conducted on measuring entrepreneurial self-efficacy till date have used this scale in its form or an adapted version. One of the reasons for its widespread application in addition to the

effectiveness of the scale is its early development (Newman, Obschonka, Schwarz, Cohen, & Nielsen, 2018).

Another important instrument for measuring entrepreneurial self-efficacy was developed by De Noble et al.(1999). They suggest that few items of the scale developed by Chen et al.(1998) could not differentiate between the skills required by an entrepreneur and effective manager thereby proposing the need for developing entrepreneurial skill specific measure. They developed five point instrument consisting of 35 items that focused on the six dimensions of entrepreneurial self-efficacy identified through literature review, brainstorming sessions with entrepreneurs and using Q-sort. The six dimensions of entrepreneurial self-efficacy included: (a) developing new product or market opportunities (b) building an innovative environment (c) initiating investor relationships (d) defining core purpose (e) coping with unexpected challenges and (f) developing critical human resources. The scale was developed based on the inputs provided by the entrepreneurs regarding the most critical issues encountered by them during the early phase of venture. The instrument was further validated by collecting data from 272 undergraduate students and 87 post graduate management students at a university in United States. The number of items in the scale was reduced from 35 to 23 with the help of exploratory factor analysis. The confirmatory factor analysis of the instrument to test the psychometric properties also indicated reasonable fit of the instrument. The application of scale for measuring the entrepreneurial self-efficacy by other researchers (Noel,2002; Naktiyok, Karabey, & Gulluce,2010; Sánchez, 2011; 2013; Wang, Tseng, Wang, & Chu, 2019) has confirmed the reliability of the scale. It is the second most widely used scale after Chen et al.'s scale for measuring ESE across the literature as revealed by the latest meta-analytical study done by Newman et al. (2018).

Cox et al. (2002) developed a seven point 10 item scale for measuring entrepreneurial self-efficacy of the tasks required to be performed in four stages of entrepreneurial life cycle. The four stages of entrepreneurial life cycle i.e. searching, planning, marshalling and implementing were originally proposed by Stevenson, Roberts & Grousbeck (1985). Mueller & Goic (2003) further supported the four phase venture creation model by developing an instrument based on this model for comparing the self-efficacy of undergraduate business students in Croatia and United States. They also emphasized on the phase specific self-efficacy of the respondents thereby confirming the multi-dimension nature of the construct.

Kickul & D'Intino (2005) tested and compared the ESE scale developed by De Noble et al. and Chen et al. to understand the extent of convergence and divergence in the two scales proposed for measuring the same construct. The study conducted with 138 management and entrepreneurship graduates revealed significant differences in the two scales across multiple dimensions. The four out of six factors of entrepreneurial self-efficacy proposed by De Noble et al. were related to the tasks in marshalling and implementing phase of entrepreneurial life cycle. This included interpersonal and networking skills, uncertainty management skills, product development skills, and procurement and allocation of critical resources. Moreover, the tasks in marshalling and implementing phase were found to be significantly associated with entrepreneurial intention. The disagreement in the two scales on measuring ESE suggested the need for a further research to develop better scale for measuring ESE.

Education for High Growth Industries Enterprise Project (EHGI) group developed a robust instrument to measure the change in entrepreneurial self-efficacy (Lucas & Cooper, 2005). The instrument consisted of twelve items (now refined to eleven) related to entrepreneurial domain tasks including idea generation for new venture, raising capital, operations, and sales and marketing. It also included generic functional skills required by an entrepreneur i.e. group interpersonal skills, problem solving skills and design skills. The instrument was applied to measure the change in the self-efficacy of the participants of weeklong Enterprisers program offered to undergraduates in UK. The change in the self-efficacy was measured immediately after the completion of program as well as six months after the completion of program. As the instrument had limited number of items for entrepreneurial domain specific tasks, McLellan et al. (2009) further refined this instrument by increasing the number of norm referenced questions regarding inter personal skills, problem solving skills as well as entrepreneurial tasks for the inexperienced participants. They included four items related to technology while measuring task specific self-efficacy. Also among the three competencies determined to be essential for entrepreneurs in EHGI instrument, they excluded design skills as they found them to be more specific to the engineering students. Lucas & Cooper (2005) also included the concept of norm referenced judgment in their instrument but their instrument consisted of norm referenced questions only at domain level. Norm reference refers to rating own skills from poor to excellent in comparison to the course peers. Though it slightly deviates from Badura's concept of self-efficacy but it is considered appropriate for the inexperienced participants to provide judgment

about their capabilities for the task they are not familiar with at the beginning of entrepreneurship education. Mclellan et al. (2009) instrument also used the combination of norm referenced and criterion referenced self-efficacy items. It also established task specific self-efficacy has higher merit as compared to domain self-efficacy and both are related to each other. Barakat et al. (2010) adapted the same instrument for their research consisting of norm referenced (NR) general ESE (7 items), NR problem solving self-efficacy (2 items), NR group inter personal skills self-efficacy (3 items) as well as criterion referenced (CR) general ESE (10 items), CR problem solving self-efficacy (2 items), CR group inter personal skills self-efficacy (4 items) and CR technical skills self-efficacy (5 items). The same scale was applied by Piperopoulos & Dimov (2015) in their study on students studying entrepreneurship courses in a British university. Though this scale was quite comprehensive but the concept of norm referenced self-efficacy used in this scale deviates from the original concept of self-efficacy proposed by Bandura (1977b). They also observed some discrepancies in the factor analysis when the same scale was applied for the pre-post entrepreneurship program study.

Zhao et al. (2005) developed four-item scale assessing individual confidence levels regarding the completion of entrepreneurial tasks including identifying new business opportunities, creating new products, thinking creatively, and commercializing an idea or new development. Likert scale items ranged from “1 ¼ No confidence” to “5 ¼ Complete confidence,” with the total ranging from 4 to 20. The instrument was also adapted in study by Shinnar et al.(2014). But as self-efficacy was evaluated as a mediating variable in their research, the scale used was not very elaborate in nature. Kolvereid & Isaksen (2006) developed eleven rating point, 18 item entrepreneurial self-efficacy scale building upon the work of Chen et al. (1998); De Noble et al. (1999) and Anna et al. (2000). consisting of four dimensions i.e. opportunity recognition, investor relationships, risk-taking and economic management. The items for opportunity recognition and investor relation were taken from De Noble et al. (1999), items for risk taking were taken for De Noble et al. (1999) and Chen et al. (1998) and economic management items were taken from Anna et al.(2000) The scale was later applied by various researchers (Graevenitz et al., 2010; Malebana & Swanepoel,2014) to measure the entrepreneurial self-efficacy. The scale adopted the items from existing popular scales but no new additions were made to the scale. Moreover, some of the ESE constructs present in the earlier scales like marketing, human resource, group inter personal skills etc. were not considered.

Sequeira et al. (2007) developed a 28 item scale for measuring entrepreneurial self-efficacy based on the specific skills required for launching a new venture as proposed by Chen et al.(1998) and De Noble et al.(1999). The initial scale consisted of 70 items which were reduced to 28 through expert panel discussion and factor analysis of the results of pilot survey. Wilson et al. (2007) also developed a simplified six item measure of entrepreneurial self-efficacy for school and college students on the basis of entrepreneurial competencies proposed by Chen et al.,1998 and De Noble et al. (1999). Solomon, Kickul, Wilson, Marlino, & Barbosa (2008) developed a 12 item entrepreneurial self-efficacy scale with expert discussion based on leadership skills required for venture success like team work, decision making, convincing people, listening and organizing skills. Both the above scales (Wilson et al., 2007; Solomon et al.,2008) were developed as norm referenced scale as proposed by Lucas & Cooper (2005).

McLellan et al.(2009) adapted the task specific self-efficacy scale developed by EHGI with some modifications. They included four items related to technology while measuring task specific self-efficacy. Earlier technology was considered as different domain than entrepreneurship. Also among the three competencies determined to be essential for entrepreneurs in EHGI instrument, they excluded Design skills as they found them to be more specific to the engineering students. The instrument included only specific items from EHGI instrument for each of the self-efficacy categories i.e. entrepreneurial tasks, group inter-personal skills and problem solving skills. All the items were not considered to shorten the length of the instrument thereby reducing respondent fatigue.

Recent significant instrument of ESE which is widely used in the current context was developed by McGee et al. (2009). Their 19 item multi-dimensional measure of ESE takes into consideration four-phase model of venture creation consisting of searching, planning, marshalling and implementing phase. Implementing was further sub-divided into people and finance after the rotated factor analysis of the scale. The study referred 25 empirical articles published in the previous 10 years specifically concerning entrepreneurial self-efficacy as well as investigated the entrepreneurial self-efficacy scale developed by Chen et al.(1998); De Noble et al.(1999) and Zhao et al. (2005). This is considered as the first robust tool that focused on the multi-dimensional aspect of ESE. The usage of this tool can distinctly help to identify particular components of ESE that have been improved due to education and training, thereby also contributing to identification of gaps in entrepreneurial education. The proposed model was tested for nascent entrepreneurs and

has been subsequently used in various studies attempting to measure self-efficacy (Mueller & Dato-on, 2011; Vanevenhoven & Liguori, 2013; Karlsson & Moberg, 2013; Malebana & Swanepoel, 2014; Newbold, 2014; St-Jean et al., 2014; Spagnoli, Santos, & Caetano, 2017; Wang et al., 2019). Vanevenhoven & Liguori (2013) modified Mc.Gee et al. (2009) instrument by splitting the first item of the instrument in two parts thereby helping to further analyse the source of idea and also by altering the 5-point confidence level measurement scale to a ratio scale of 0 to 100 (absolutely no confidence to complete confidence). Newbold (2014) also adapted Mc Gee's scale for his study and further modified the scale to 26 times thereby making it more comprehensive. The instrument developed by Mc Gee et al. (2009) is quite robust but does not take into consideration general ESE related to perseverance, risk-taking, group interpersonal skills, problem solving skills etc.

Malebana & Swanepoel (2014) further enhanced the above scale by combining inputs from scales developed by Kickul and D'Intino (2005); Kolvereid & Isaksen (2006) and McGee et al. (2009). The scale consisted of five additional items as compared to Mc.Gee et al. (2009) with total of 24 ESE tasks. The new items were added related to the tasks in marshalling phase of venture creation as well as an item related to perseverance and uncertainty management. The measures of searching and planning phases were adopted as it is. Spagnoli et al. (2017) examined the reliability and validity of the scale developed by Mc.Gee et al. (2009) by applying it to the respondents in Portugal and Italy and their result supported the robustness of the instrument as well as its multi-dimensional nature. But this scale also didn't consist of any item related to general ESE like group interpersonal skills, problem solving skills and other general ESE skills like perseverance and uncertainty management were measured through single item.

Barakat, Boddington, & Vyakarnam (2014) proposed a seven section tool for measuring ESE. The sectional approach was followed to adhere to the significance of multi-dimensional nature of ESE as proposed by Mc. Gee et al (2009). The instrument was mainly based on the ESE measurement tool proposed by EGHI group with additional sections added for individual creative self-efficacy and group creative self-efficacy. The research instrument is still nascent as not much application of this tool has been observed in other consequent studies.

Few other contemporary scales of ESE include those developed by Ho et al. (2018) and Wang et al. (2019). Ho et al. (2018) scale was partly adopted from Chan et al. (2012) and rest was developed indigenously. Chan et al. (2012) scale consisted of 19 items measuring ESE consisting of idea

generation, opportunity recognition, research, knowledge up gradation, marketing, finance and human resource activities. This scale was developed as part of large scale survey of 10,326 under graduate and post graduate university students in Singapore measuring their entrepreneurial, professional, and leadership career motivations, intentions, and efficacies. But the scale was not organized into multiple dimensions for proper measurement of different aspects of ESE. The additional items incorporated by Ho et al. (2018) pertained to marketing and financial tasks of an entrepreneur which were already present in the previous scales discussed above.

Wang et al. (2019) developed a scale for measuring internet entrepreneurial self-efficacy. Previous studies (Chang, Wang, Lee, & Yu, 2018) applied the existing offline entrepreneurial self-efficacy scale developed by Mc Gee et al. (2009) to measure internet entrepreneurial self-efficacy but it did not deliver satisfactory results. Wang et al. (2019) proposed that the additional items measuring the competency to technology utilization, online marketing and online customer service should be incorporated in the existing offline entrepreneurial self-efficacy scale. The internet entrepreneurial self-efficacy scale (IESES) scale consisted of sixteen items comprising of seven newly developed items and remaining items related to leadership, marketing and business operation ESE were adopted from existing prominent entrepreneurial self-efficacy scales. Table 3-2 represents the evolution and critical evaluation of the existing prominent ESE scales.

Table 3-2: Evolution and evaluation of prominent ESE scales

S.No.	Year	Authors	Content of scale	Evaluation of the scale
1.	1998	Chen, Greene, & Crick	First task specific 22 item ESE scale consisting 5 dimensions .i.e. including Marketing, Innovation, Management, Risk Taking and Financial Control.	More focus on general management tasks. Certain crucial tasks related to financial and human resource activities of an entrepreneur are not included.
2.	1999	De Noble, Jung, and Ehrlich	23 item task specific ESE scale with 6 dimensions i.e. developing new product, building innovative environment, investor relationship, defining core purpose, coping with challenges and developing critical human resources.	More comprehensive than Chen et al. (1998) scale. Did not include items related to marketing and financial tasks post venture creation
3.	2002	Cox, Mueller, and Moss	10 item tem scale measuring ESE of the tasks required to be performed in four stages of entrepreneurial life cycle i.e. searching, planning, marshalling and implementing	First scale based on four phase venture creation model but the total number of items were very limited to justify measurement of ESE
4.	2005	Zhao, Seibert, & Hills	4 item scale measuring ESE of opportunity recognition, new product development, creativity and idea commercialization	Very short scale with limited dimensions taken into consideration.
<i>Table 3-2 continues on next page</i>				

S.No.	Year	Authors	Content of scale	Evaluation of the scale
5.	2005	Lucas & Cooper (Education for High Growth Industries Enterprise Project)	12 item scale measuring task specific ESE on 6 dimensions i.e. idea generation, capital acquisition, operations, sales and marketing. It also included items for measuring generic ESE related to group interpersonal skills, problem solving skills and design skills	Introduced new dimension of general ESE to ESE measurement but the number of items measuring task specific ESE were very limited. Also the tasks related to ESE dimensions like people management, financial management post acquisition of funds were not considered.
6.	2006	Kolvereid and Isaksen	18 item scale measuring ESE on 4 dimensions i.e. opportunity recognition, investor relationships, risk-taking and economic management	All the items were taken from combination of existing scales proposed by Chen et al. (1998); De Noble et al. (1999) and Anna et al. (2000).
7.	2007	Sequeira, Mueller & McGee	28 item scale measuring task specific ESE	All the items were taken from Chen et al.(1998)and De Noble et al.(1999)
8.	2008	Solomon, Kickul, Wilson, Marlino, & Barbosa	12 item scale measuring ESE related to team work, decision making, convincing people, listening and organizing skills.	The scale was developed indigenously mainly focused on leadership skills for venture success only
9.	2009	McLellan, Barakat and Winfield	Modified version of Lucas and Cooper (2005) ESE scale consisting of 33 items measuring general ESE, group interpersonal skills, problem solving skills and technical skills	The scale measured norm-referenced ESE which is deviation from the original self-efficacy concept proposed by Bandura (1977).

Table 3-2 continues on next page

S.No.	Year	Authors	Content of scale	Evaluation of the scale
10.	2009	McGee, Peterson, Mueller, & Sequeira	19 item scale measuring ESE on tasks pertaining to four phases of entrepreneurship i.e. searching, planning, marshalling and implementing	Widely used and robust scale but did not consider general ESE items related to perseverance, risk-taking, group skills, problem solving skills etc.
11.	2012	Chan et al.	19 item ESE scale based on idea generation, opportunity recognition, research, knowledge upgradation, marketing, finance and human resource activities.	This scale also lacks general ESE skills mentioned above and did not classify multiple items into relevant dimensions
12.	2014	Malebana & Swanepoel	24-item task specific ESE scale adapted from McGee et al.(2009), Kickul and D'Intino, (2005) and Kolvereid and Isaksen (2006)	The scale improvised on Mc Gee et al.(2009) scale and included dimension of perseverance and uncertainty management but other general ESE skills could also be included for more comprehensive measurement of ESE
13.	2014	Barakat, Boddington, & Vyakarnam	ESE scale consisting of 7 sections including innovation, finance, teamwork, product development, start-up processes, leadership and creativity	The scale was mainly adopted from Lucas and Cooper(2005) with added dimension of group and individual creativity
14.	2019	Wang, Tseng, Wang and Chu	16-item ESE scale with focus on Internet Entrepreneurial Self-Efficacy Scale (IESES)	The scale introduced the need of incorporating IESES in ESE scales in the current context.

3.7 Moderating Role of Demographic Variables in Influencing Entrepreneurial Self-Efficacy

Many previous researches have commented on the role of demographic variables like age, gender, level of studies, prior experience, parents' occupation, conducive entrepreneurship ecosystem etc. in moderating the influence of entrepreneurship education on the entrepreneurial self-efficacy and intention of the participants. Rittippant, Kokchang, Vanichkitpisan, & Chompoondang (2011) in their study based on 1500 students in Thailand found significant relation between demographic variables like gender, family background, region and education background and entrepreneurial intention. In the section below, the moderating role of demographic variables, viz. gender family background and prior experience including work experience as well as entrepreneurial experience is reviewed individually.

3.7.1 Moderating role of gender in influencing ESE

The literature represents mixed review on the role of gender in moderating the influence of entrepreneurship education on the entrepreneurial self-efficacy. Various studies have recorded differential impact of entrepreneurship education on both the gender, whereas some studies found both gender to have benefitted equally from the educational intervention.

Significant moderating role of gender:

Wilson et al. (2007) in their research on the impact of studying entrepreneurship concentration during MBA program on entrepreneurial self-efficacy found the results to be stronger for women than for men. The self-efficacy of female students increased significantly more than the self-efficacy of the males though the initial self-efficacy of male students was significantly higher than female students at MBA as well as high school level. Whereas the study by Shinnar et al. (2014) on US students reported higher significant increase in the self-efficacy of the male students as compared to female students at the end of the semester long entrepreneurship education program. The research strongly recommended the inclusion of gender as a moderating variable in any study pertaining to influence of entrepreneurship education on the entrepreneurial self-efficacy as it may provide possible explanation to the contradictory results of studies in this domain. Zhang et al. (2014) in their study across ten universities in China found that entrepreneurship education increases the entrepreneurial intention of males more than females. Intriguing results were observed by Bergman et al. (2011) in their study of Israel students undergoing a yearlong entrepreneurship training program. The educational intervention had contradictory influence on males and females. The entrepreneurial self-

efficacy of the males increased significantly whereas the self-efficacy of females decreased significantly as a result of entrepreneurship training. Oosterbeek et al. (2010) found entrepreneurship education negatively influenced the entrepreneurial intention of the participants and influence on women is even more negative as compared to men.

No significant moderating role of gender:

Zhao et al. (2005) concluded that influence of entrepreneurship education on self-efficacy is not moderated by gender but they as well as many other researchers (Matthews & Moser, 1996; Kolvereid, 1996; Crant, 1996; Chen et al., 1998; Zhao, Seibert, & Hills, 2005) advocated that men have higher entrepreneurial efficacy than women. On the contrary, Tkachev & Kolvereid (1999); Menzies & Paradi (2003); Pruett, Shinnar, Toney, Llopis, & Fox (2009); indicated no meaningful difference between men and women in terms of intentions to start businesses. Mclellan et al. (2009) in their study on the influence of UK Enterpriser program on the self-efficacy of the participants also found that though the program had significantly positive impact on self-efficacy but men and women were not benefitted differently. Similar results were observed in the meta analysis of 73 studies, which revealed both men and women are be equally benefitted from entrepreneurship education (Bae et al., 2014).

Malebana & Swanepoel (2014) in their study on final year commerce students from two South African universities inferred that gender differences in self-efficacy are observed in specific tasks. Male respondents differed statistically significantly (at the 1% and 5% level of significance) from female respondents on six entrepreneurial self-efficacy factors out of 24 parameters taken into consideration.

The mixed results regarding the role of gender as a moderating variable in influencing the extent of impact of entrepreneurship education suggest the further scope to explore the differential influence of entrepreneurship education on males and females and to test the following hypothesis.

Hypothesis 4: The influence of entrepreneurial education on entrepreneurial self-efficacy is moderated by gender. That is, entrepreneurship education would have significantly different impact on ESE of boys as compared to the girls.

3.7.2 Moderating role of family background in influencing ESE

Family background here refers to self-employed parents, close relatives or close friends. Those belonging to business families or having entrepreneurs in their close circle of friends and

relatives are expected to be exposed to the realities and challenges of entrepreneurship more than the others. According to Carr & Sequeira (2007) self-employed parents generally teach skills to their children and provide them values and confidence required for running a business. The children also learn various aspects of business by listening and observing their parents, close friends and relatives. In the process, all this exposure builds up the informational requirement and behavioral skills essential for pursuing entrepreneurship.

Significant moderating role of family background:

Shapero & Sokol (1982) argued that the parents play the most powerful role in establishing the desirability and credibility of entrepreneurial actions. The children of parents owning small business are more likely to be self-employed. Crant (1996); Scott & Twomey (1998); Carr & Sequeira, (2007); Graevenitz et al. (2010); Maina (2011); Vanevenhoven & Liguori (2013) and Malebana & Swanepoel (2014) also established bivariate relationship between parental self-employment and students' entrepreneurial intention.

Crant (1996) in his study of MBA and undergraduate students in a medium sized Midwestern university found entrepreneurial intention of students with entrepreneurial parent were higher than those with non-entrepreneurial parents. Entrepreneurial parents acted as the role model for their children thereby influencing them to pursue entrepreneurship. Scott & Twomey (1988) in their study across countries found family background to be the most important significant factor influencing the choice of self-employment among the students. Carr & Sequeira (2007) also observed significant positive impact of prior family business exposure on the entrepreneurial intention of heterogeneous U.S. sample of 308 respondents. Prior exposure to entrepreneurship through family business or employment in small businesses greatly influenced the choice of Kenyan college students to take up entrepreneurial career (Maina , 2011). Vanevenhoven & Liguori (2013) in their world-wide study on the impact of entrepreneurship education found significant correlation between exposure to entrepreneurship and entrepreneurial self-efficacy as well as entrepreneurial intention. Prior exposure to entrepreneurship was measured based on their belongingness to family business and any paying or nonpaying position held by them in a new venture.

Malebana & Swanepoel(2014) found the influence of having friends pursuing entrepreneurship to be stronger than influence of family members pursuing entrepreneurship. Respondents with family business background had significantly different self-efficacy as compared to those with non entrepreneurial family background on only one out of 24 self-efficacy parameters whereas those with entrepreneur friends differed on three out of 24 factors in their self-efficacy as

compared to those who did not have entrepreneurial friends. The difference was even higher between the group of people who knew some entrepreneurs as compared to those who didn't.

No significant moderating role of family background:

Koh (1995) found no significant difference between the entrepreneurial attitude of undergraduate students belonging to entrepreneurially inclined families as compared to those who didn't belong to entrepreneurially inclined families in Hong Kong. Kolvereid (1996) also found no significant impact of family background on entrepreneurial intention of Norwegian undergraduate business students. Similar results were obtained by Chen et al.(1998) for MBA students in USA and by Tkachev & Kolvereid (1999) in their study on Russian students. Hamidi et al.(2008) also denied the role of family members with entrepreneurial experience as well as those of close relatives and friends in influencing the entrepreneurial intention of Sweden students pursuing masters degree. Bae et al. (2014) found that the influence of entrepreneurship education on entrepreneurial intentions is not significantly different for people from family business background as compared to those from non-business families.

Fayolle & Gailly (2009, 2013) concluded that presence of family members or close relatives as entrepreneur, negatively influence of the impact EEPs on the change in entrepreneurial intention of the participants through experiment conducted for French postgraduate management students. Zhang et al.(2014) found that exposure to entrepreneurship through self-employed parents, other family members, close relatives or friends negatively influence the entrepreneurial intention. But they attributed the negative influence to the high (98%) failure rate of new ventures in China. Moreover, most of the participants of their research were exposed to negative entrepreneurial experiences which would have increased their fear of failure and perception of risk.

Veciana et al. (2005) in their cross country comparison of entrepreneurial attitude and intention among university students found geographically different results with respect to influence of gender and family business background on the entrepreneurial intention as well as perceived desirability and feasibility. Significant relation was found between gender as well as family background to the intention of new venture creation in Catalonia whereas no such relation existed in Puerto Rico.

Hence, there are mixed results regarding the role played by entrepreneurial parents, friends and close relatives in moderating the entrepreneurial intention of the individual. Such exposure on the one hand acquaints the individuals with the required entrepreneurial skills but on the other hand also familiarize them with the challenges and risks of pursuing entrepreneurship. Also

those with family business background, have initial high self-efficacy due to sufficient exposure to possible difficulties as well as access to critical resources and social networks (Zellweger, Sieger, & Halter, 2011). Entrepreneurship education may therefore not enhance their self-efficacy to a great extent. With this background, it is meaningful to verify the following hypothesis to examine the moderating role of family background.

Hypothesis 5: *The influence of entrepreneurial education on entrepreneurial self-efficacy is moderated by family background. That is entrepreneurship education would have significantly lesser impact on ESE of those students whose parents are involved in family business as compared to those coming from non-business background.*

Hypothesis 5a: *Entrepreneurship education would have significantly lesser impact on ESE of those students whose fathers are involved in business as compared to those whose fathers are not involved in business.*

Hypothesis 5b: *Entrepreneurship education would have significantly lesser impact on ESE of those students whose mother is involved in business as compared to those whose mothers are not involved in business.*

Hypothesis 5c: *Entrepreneurship education would have significantly lesser impact on ESE of those students whose siblings are involved in business as compared to those whose siblings are not involved in business.*

Hypothesis 5d: *Entrepreneurship education would have significantly lesser impact on ESE of those students whose close friends are involved in business as compared to those whose friends are not involved in business.*

Hypothesis 5e: *Entrepreneurship education would have significantly lesser impact on ESE of those students whose relatives are involved in business as compared to those whose friends are not involved in business.*

Hypothesis 6a: *The influence of entrepreneurial education on entrepreneurial self-efficacy is moderated by involvement in family business. That is entrepreneurship education would have significantly lesser impact on ESE of those students who have been involved in business of family/friends/relatives' business as compared to those who lack any such involvement.*

Hypothesis 6b: *The influence of entrepreneurial education on entrepreneurial self-efficacy is moderated by level of involvement in family business. That is entrepreneurship education would have significantly lesser impact on ESE of those students who have higher involvement in business of family/friends/relatives' business as compared to those who have lesser involvement.*

3.7.3 Moderating Role of Prior Experience in Influencing ESE

Prior experience includes prior entrepreneurial experience and prior work experience. Prior entrepreneurial experience refers to being an alumnus entrepreneur. An individual may have the experience of starting and running their own venture in the past or working in their family business. The entrepreneurial experience, short or long, successful or failed is expected to have influenced the respondent's self-belief regarding undertaking entrepreneurial tasks in some way or the other. It is expected that the knowledge and learnings from the experience would make an individual more equipped to take informed decision of pursuing entrepreneurship and would influence his/her entrepreneurial intentions.

Significant moderating role of prior experience:

Previous entrepreneurial experience plays a determining role in understanding the self-efficacy and entrepreneurial intention of the people (Liñán, 2004). Zhao et al. (2005) found significant influence of prior entrepreneurial experience on the self-efficacy of the MBA students across different universities in USA. Students with higher prior experience reported higher self-efficacy. Dynamic nature of prior experience explained the significance of its impact on self-efficacy when compared to gender which is a not amenable to change. Prior experience also provides mastery experience considered to be the most influential mechanism for increasing the self-efficacy as proposed by Bandura (1977b). McStay(2008) in his thesis advocated positive relation between level of previous entrepreneurial experience and perceived entrepreneurial self-efficacy and intention. According to his study, 6% of the variance in perceived desirability, 9% of the variance in perceived entrepreneurial self-efficacy and 5% variation in the entrepreneurial intention can be explained by level of previous entrepreneurial experience. Also the entrepreneurial intention of students with low prior exposure to entrepreneurship increased more after undergoing semester long entrepreneurship program as compared to change in intention of students with higher exposure to entrepreneurship. The study was based on 429 students at Australian University.

Sandberg & Hofer (1987) examined several new venture proposals submitted to venture capitalist to identify various factors critical to the venture performance. The three broader

factors of their model included the personal characteristics of entrepreneur, industry structure and venture strategy. The personal characteristics of the entrepreneur, among others also included prior entrepreneurial experience, start-up experience and managerial experience in related industries. Entrepreneurial experience in early stage venture was found to be more important for the entrepreneur's success. However, no significant relationship was established between the performance of entrepreneur and other experience related factors. The quality of experience counted more than the duration of experience.

Scott & Twomey (1988) conducted a study involving more than 400 students across three countries i.e. Great Britain, United States and North Ireland to understand the factors influencing entrepreneurial aspiration of the students. They found positive relation between the work experience and self-employment preference though the relationship was not significant. Ronstadt (1988) offered an explanation to multiple venture creation by certain entrepreneurs by introducing the concept of corridor principle. The study involved very large (1,537 individuals) number of existing as well as ex-entrepreneurs in United States. It was found that 63% of the currently practicing entrepreneurs and 40% of all ex-entrepreneurs had created more than one venture thereby indicating strong positive influence of previous entrepreneurial experience on new venture creation. Robinson et al. (1991) who otherwise denied the ability of demographic variables in directly determining the entrepreneurial behavior, advocated the predictive ability of past entrepreneurial behavior in determining the future entrepreneurial intention and action as an exception. Similar results were obtained by Kolvereid (1996) for Norwegian undergraduate students where prior entrepreneurial experience indirectly impacted the entrepreneurial intention through its impact on attitude, subjective norms and self-efficacy. Peterman & Kennedy (2003) in their study attempted to understand the role of breadth and positivity of prior entrepreneurial experience in influencing the impact of entrepreneurship education on the self-efficacy of secondary school students undertaking YAA (Young Achievement Australia) program. They found that positive prior experience contributes to the extent of influence of entrepreneurship education on self-efficacy of the participants but the breadth of experience does not play any significant role. The self-efficacy of the participants with less positive prior experience increased more significantly after the course on entrepreneurship as compared to those with more positive prior experience. Prior experience in this study included entrepreneurial experience, working for a new company as well as entrepreneurial parents. Hamidi et al. (2008) found significantly higher entrepreneurial intention among those Sweden students undergoing different entrepreneurship master program who had prior experience of entrepreneurship. Kilenthong et al. (2008) also found prior work

experience to be positively correlated to the extent of influence of entrepreneurship education. The research suggests additional support to be provided to the participants of entrepreneurial education without prior work experience so as to increase their entrepreneurial self-efficacy. Álvarez-Herranz, Valencia-De-Lara, & Martínez-Ruiz (2011) used panel data-based research to examine the influence of previous work-experience and other demographic variables on entrepreneurial behavior of the participants. The data was gathered regarding entrepreneurial activities across 22 countries from Global Entrepreneurship Monitor(GEM) reports. The study concluded that previous work experience has the most significant influence among all the demographic variables on the entrepreneurial behavior of the entrepreneurs.

Malebana & Swanepoel (2014) in the study of final year commerce students at South African universities found almost similar influence of prior entrepreneurial experience and other work experience on the self-efficacy of respondents. The respondents differed statistically significantly (at the 5% level of significance) on six entrepreneurial self-efficacy factors out of 24 parameters, as a result of work experience. Also, entrepreneurial self-efficacy of the respondents who had tried to start a business before differed statistically significantly (at the 1% and 5% level of significance) from those who did not have prior start-up experience on five entrepreneurial self-efficacy factors.

No significant moderating role of prior experience:

Sisco (2014) investigated the extent of influence of work experience on the entrepreneurial self-efficacy of nascent entrepreneurs in North Carolina. The relation between work experience and self-efficacy was measured on five sub scales of self-efficacy comprising of goal selection, planning, self-appraisal, occupational information and problem-solving. The results demonstrated very weak negative correlation of number of years of work experience with each of the five sub-scales of self-efficacy.

Similar results reflecting the neutral or negative influence of prior entrepreneurship experience on the entrepreneurial intention were found in other studies as well (Tkachev & Kolvereid ,1999; Fayolle & Gailly, 2009; 2013). Tkachev & Kolvereid (1999) in their study of nearly 560 Russian students found the the relation between the self-efficacy and entrepreneurial intentions was not altered by introduction of prior entrepreneurial experience as a moderating variable. Infact, the introduction of any demographic variable did not add to the explanation of the amount of variation in entrepreneurial intention of the respondents. Fayolle & Gailly (2009,2013) found the negative role of prior entrepreneurial experience in influencing the impact of EEP on entrepreneurial intention of French students. EEP had more positive

significant impact on participants with weak prior exposure to entrepreneurship. Vanevenhoven & Liguori (2013) in their study across 70 countries investigating the influence of entrepreneurship education revealed negative correlation between those who started their venture in the past with their entrepreneurial intention as well as self-efficacy.

Though most of the research work demonstrates the positive contribution of prior work experience on self-efficacy of the individuals, some of the researchers have obtained contrary results as well. The differences in the result may also be attributed to the difference in the nature of work experience as well as the length of work experience. But inconclusive results justify the need to test the following hypothesis.

Hypothesis 7a: *The influence of entrepreneurial education on entrepreneurial self-efficacy is moderated by prior work experience. That is entrepreneurship education would have significantly lesser impact on ESE of those students who have prior work experience as compared to those who lack prior work experience.*

Hypothesis 7b: *The influence of entrepreneurial education on entrepreneurial self-efficacy is moderated by duration of prior work experience. That is entrepreneurship education would have significantly different impact on ESE of those students with varying duration of work experience.*

Hypothesis 8a: *The influence of entrepreneurial education on entrepreneurial self-efficacy is moderated by entrepreneurial experience. That is entrepreneurship education would have significantly lesser impact on ESE of those students who have prior entrepreneurial experience as compared to those who lack prior entrepreneurial experience.*

Hypothesis 8b: *The influence of entrepreneurial education on entrepreneurial self-efficacy is moderated by duration of prior entrepreneurial experience. That is entrepreneurship education would have significantly different impact on ESE of those students with varying duration of entrepreneurial experience.*

3.8 Summary of Literature Review

The first section of the literature review focusses on the different models and theories evolved over the time to measure the impact of entrepreneurship education. The focus of the research has shifted from longitudinal studies measuring the impact of entrepreneurship education on the actual behaviour of the participants in the form venture creation to the measurement of impact on the predictors of entrepreneurial behaviour. Actual behaviour research measuring

the entrepreneurial action are highly time consuming and spread over years. Theory of Planned behavior (TPB) and Shapero's Entrepreneurial Event model (SEE) emerged to be the most relevant models measuring the entrepreneurial intention as the closest predictor of entrepreneurial event through its empirical validation by various researchers. Among the antecedents of entrepreneurial intention in these two models (TPB and SEE), perceived behavior control and perceived feasibility respectively appeared to be the most significant factors, resulting in the integration of concept of self-efficacy to the impact assessment of entrepreneurship education. Over the years' entrepreneurial self-efficacy has emerged as one of the most reliable criteria for measuring the impact entrepreneurship education.

The second section of the literature review includes the findings of the researches pertaining to the studies related to impact of entrepreneurship education on the entrepreneurial intention of the participants. Most of the studies reveal positive influence of the entrepreneurship education intervention on the intention of the participants to venture into entrepreneurship while few studies found the influence to be no different than the regular business education. The section includes the studies varying in terms of the duration of education intervention, study majors of the participants as well as the place (developed vs developing economy) of the research. Few researchers also concluded negative and insignificant influence of the entrepreneurship education programs on the participants.

Due to emergence of the underlying significance of the self-efficacy construct in measuring the impact of the entrepreneurship education, the next two sections of literature review focus on the concept of Entrepreneurial Self- Efficacy (ESE).

The third section explains the concept of the entrepreneurial self-efficacy and its significance in the entrepreneurship research as established by the contemporary researchers in the field. ESE is not only found to influence the entrepreneurial intention and action but the endurance as well as the amount of effort exhibited by an individual. Moreover, ESE is not a static trait and can be influenced and boosted through various interventions including the entrepreneurship education. Thus, this section concludes that enhancement of ESE should be the primary objective of entrepreneurship education programs.

The fourth section of literature review, examines the research focusing on understanding the impact of entrepreneurship education on the self-efficacy of the participants. Most of the researchers have been univocal about the positive influence of the entrepreneurship education on the entrepreneurial self-efficacy of the participants. The literature review has taken into consideration the inclusion of articles pertaining to different duration of EEPs, different discipline of students, different types of countries in terms of entrepreneurial ecosystem as well

as different models for measuring entrepreneurial self-efficacy. It also examines the endurance of the influence of entrepreneurship education by reviewing the research papers measuring the delayed influence of EEPs on the participants by conducting delayed post-tests, as far as 18 months after the end of EEPs.

The fifth section further explores the relevance of the construct of entrepreneurial self-efficacy as a determinant of entrepreneurial action by reviewing the relationship between entrepreneurial self-efficacy and performance. The literature suggests that self-efficacy determines the nature of venture selected by entrepreneur, the amount of effort exerted, the level of goal-setting, endurance during hardships as well as performance and success of the venture.

In order to measure the self-efficacy, the existing instruments of ESE are reviewed in the sixth section of literature review. The scale has evolved from measuring the general self-efficacy to occupational self-efficacy to task specific occupational self-efficacy and finally to entrepreneurial task specific self-efficacy. The review explains the iteration, evolution and evolution of task specific entrepreneurial self-efficacy scale over the years.

The last section reviews the influence of demographic variables including gender, family background and prior experience on the entrepreneurial self-efficacy and entrepreneurial intention of the participants. It also explores the moderating role of these variables in differently influencing the entrepreneurial self-efficacy of the participants undergoing the educational intervention.

3.9 Implications of Literature Review

The existing literature reiterates that considering the extent and diffusion of entrepreneurship education the outcome/impact assessment of entrepreneurship education is still under researched (Sánchez, 2013). Though there is an underlying assumption about the positive impact of entrepreneurship education on the participants, the nature and extent of these outcomes is not well explored (Couetil, 2013; Wilson et al., 2007). In the paper on directions on future research on entrepreneurial intention by Fayolle & Liñán (2014), the inter-relation between the entrepreneurship education and entrepreneurial intention has been identified as one of the five critical areas of research in the domain of entrepreneurship. In regard to the entrepreneurship education in India, the research gap is even more pronounced. Most of the existing researches are in reference to United States (Charney & Libecap, 2000; Menzies & Paradi, 2003; Wilson et al., 2007; Tam, 2009; Graevenitz et al., 2010; Duval-Couetil, Reed-Rhoads, & Haghghi, 2012; Fayolle & Gailly, 2013) and European countries (Souitaris et al.,

2007; Mclellan et al., 2009; Fayolle & Gailly, 2009; Oosterbeek et al., 2010; Barakat et al., 2010; Sánchez, 2013; Karlsson & Moberg, 2013; Piperopoulos & Dimov, 2015). Also, literature suggests that the influence of entrepreneurship education is expected to be more pronounced in developing country in comparison to developed nation, accentuating the relevance of conducting such study in countries like India.

Another observation from literature review suggest that majority of the existing studies are based on shorter duration EEPs. Fayolle & Gailly (2009) studied the impact of 1 day, 3 days and seven month EEP on the French engineering students at three different postgraduate schools. Barakat et al. (2010) and Mclellan et al. (2009) examined the impact of 4-day UK postgraduate entrepreneurship program on the students of the different disciplines. Hattab (2014) assessed the impact of 14-week entrepreneurship module on the different discipline under graduate Egyptian students. Sánchez (2011; 2013) evaluated the effectiveness of 8 month entrepreneurship program on college and school students of Spain respectively. Karlsson & Moberg (2013) study on self-efficacy of university students in Denmark evaluated 10 month entrepreneurship program offered to graduate students. Menzies & Paradi (2003); Souitaris et al. (2007); McStay (2008); Graevenitz et al. (2010) and Piperopoulos & Dimov (2015) studied the impact of semester long entrepreneurship courses whereas Charney & Libecap (2000); Oosterbeek et al. (2010) assessed yearlong entrepreneurship course in USA and UK respectively. Many of these studies may have their own limitation considering the limited time frame of the educational input. Few exceptional studies have taken into consideration impact of entrepreneurship programs longer than one year. Hamidi et al. (2008) studied one year to one and half year entrepreneurship master program and Malebana & Swanepoel (2014) included students who had undergone entrepreneurship education for three years as a part of experimental group. It highlights the research gap in terms of understanding the impact of long term entrepreneurship education programs. Moreover, long term EEPs have more noticeable impact as compared to short-term EEPs (Fayolle & Gailly, 2005; 2009; Malebana & Swanepoel, 2014).

Literature review strongly advocates the predictive ability of entrepreneurial self-efficacy in determining the entrepreneurial intention. But influence of entrepreneurship education on the self- efficacy of the participants has remained inconclusive. Though majority of the researchers have revealed positive relationship, few of them have also advocated neutral and negative influence of entrepreneurship education on the entrepreneurial self-efficacy as well as entrepreneurial intention. The difference in the findings may be attributed to the moderating role of demographic variables and duration of the entrepreneurship education and the nature of

the course. The last section of literature review, therefore examine studies conducted to determine the role demographic variables including gender, family background and prior entrepreneurial and work experience in moderating the impact of entrepreneurship education on the participants and finds the results are not univocal. It represents a void for examining the moderating role of demographic variable in influencing the difference in the self-efficacy of the entrepreneurship education participants.

Moreover majority of the researchers have observed significant difference in the entrepreneurial self-efficacy of the entrepreneurship course students as compared to engineering, biomedicine, law, architecture and other non management course students. Some studies have also found significant differences in the self-efficacy of entrepreneurship students and management students (Chen et al.,1998; De Noble et al.,1999; Hamidi et al.,2008; Kilenthong et al., 2008; Bae et al., 2014) but on the other hand, few studies have resulted in contrary findings as well. These studies have found that entrepreneurship education graduates benefit no different than the management education graduates in terms of the increase in entrepreneurial self-efficacy as a result of entrepreneurship education intervention (Tan et al.,1996; Noel,2002; Mc Stay, 2008). Noel (2002) in-fact found no significant difference in self-efficacy of entrepreneurship students as compared to any other course (Management, Law, IT, Journalism, Biotechnology) students. It presents a case for interesting area of research to compare and contrast the self-efficacy of management students with entrepreneurship students as well as to examine the moderating role of demographic variables.

3.10 Research Gaps

The review of literature brings out the following inadequacies pertaining to the research in domain of measuring effectiveness of entrepreneurship education in the Indian context.

- There is a void in reference to the research on the impact of long term entrepreneurship education. Most of the existing researches focus on short term entrepreneurship programs and hence represent an opportunity to evaluate the impact of two-year full time post graduate courses offered in entrepreneurship.
- In the context of Indian entrepreneurship education, its impact on the entrepreneurial self-efficacy of the participants is still unexplored.
- The differential impact of entrepreneurship education as compared to the management education on the self-efficacy of the participants represents worthy research area due to miscellaneous findings of the previous studies.

- The role of demographic variables like gender, previous entrepreneurial exposure, work experience, parent's occupation in moderating the impact of entrepreneurship education on the participants is still inconclusive. Moreover, most of the studies individually examine the role of particular demographic variable and not the collective impact of all relevant demographic variables.

It stimulates the following research questions:

- *Does entrepreneurship education influence the participants to take entrepreneurial career positively or negatively?*
- ~~*Is self-efficacy of entrepreneurs different from the self-efficacy of other people?*~~
- ~~*How long term entrepreneurship education influences entrepreneurial self-efficacy?*~~
- ~~*What is the difference in the entrepreneurial self-efficacy of participants after undergoing entrepreneurship education?*~~
- ~~*Do long term entrepreneurship education programs influence the participants' self-efficacy in the manner similar to the short term programs?*~~
- ~~*How the influence of Does entrepreneurship education in influencing the entrepreneurial self-efficacy of the participants is differently compared to same level from the influence of management education on entrepreneurial self-efficacy?*~~
- ~~*How is task specific self-efficacy of entrepreneurship graduates different from management graduates?*~~
- What is the role played by demographic variables gender in influencing the impact of entrepreneurship education on entrepreneurial self-efficacy the participants?
- ~~*What is the role played by family background in influencing the impact of entrepreneurship education on the participants?*~~
- ~~*What is the role played by previous work experience in influencing the impact of entrepreneurship education on the participants?*~~
- ~~*How is task specific self-efficacy of entrepreneurship graduates different from management graduates?*~~

3.11 Research Objectives

Based upon the gaps identified through review of literature and research questions arising out of it, the research objectives for the present study are defined as follows:

1. To understand the influence of entrepreneurship education on the entrepreneurial self-efficacy of the participants
2. To study the influence of entrepreneurship education on entrepreneurial self-efficacy with respect to the following demographic variables:
 - a. *Gender*
 - b. *Family background*
 - c. *Prior work-experience*
 - d. *Prior exposure to entrepreneurship (Prior entrepreneurial experience)*

