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Gender differences in entrepreneurial self-efficacy: An educational perspective

Najib A. Mozahem

College of Business and Economics, Qatar University, P.O. Box, 2713, Doha, Qatar

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ABSTRACT

Entrepreneurial education is believed to be positively correlated with entrepreneurship intentions. Previous studies measured entrepreneurial self-efficacy in order to investigate observed gender differences in entrepreneurial activity. Unlike these studies that were interested in studying entrepreneurial self-efficacy as a predictor of behavior, this study aims at measuring entrepreneurial self-efficacy as an educational assessment tool. This study uses data collected from four private universities in order to assess whether there are gender differences in the observed impact of entrepreneurial education. Results indicate that the entrepreneurial self-efficacy of both male and female students is significantly correlated with having taken an entrepreneurship course. Gender differences exist in terms of the specific subdomains of the scale, but these differences are small.

1. Introduction

Despite the fact that there has been a growth in female entrepreneurs (*The 2019 state of women-owned businesses report, 2019*), studies have shown that men display higher entrepreneurial intentions than women (Gupta, Turban, Wasti, & Sikdar, 2009), and that women perceive themselves and their entrepreneurial environment less favorably than men (Langowitz & Minniti, 2007). Therefore, it comes as no surprise that men are more active in entrepreneurship than women worldwide (Wilson, Kickul, & Marlino, 2007).

The spread of entrepreneurial education (Katz, 2003, 2008) has been partly due to the importance of entrepreneurship in the economic growth process (Wennekers & Thurik, 1999). Entrepreneurial education is believed to be positively correlated with entrepreneurship intentions (Bae, Qian, Miao, & Fiet, 2014; Westhead & Solesvik, 2015; Zhang, Duysters, & Clodt, 2014). Within the field of education, in general, the concept of self-efficacy has gained considerable attention (Fouad et al., 2010; Fouad & Santana, 2016). It has also received significant support from research that investigates gender differences in career choices (Fouad & Santana, 2016; Lent, Singley, Sheu, Schmidt, & Schmidt, 2007).

It therefore comes as no surprise that within the field of entrepreneurial education, the concept of self-efficacy has been used to explain observed gender differences in entrepreneurial activity (Barakat, Boddington, & Vyakarnam, 2014; Westhead & Solesvik, 2015; Wilson et al., 2007; Zhang et al., 2014). Unlike previous studies that conceptualized entrepreneurial self-efficacy as a predictor of entrepreneurial intentions (Barbosa, Gerhardt, & Kickul, 2007; McGee, Peterson, Mueller, & Sequeira, 2009), the present study uses a measure of entrepreneurial self-efficacy that is rooted in educational assessment (Gedeon & Valliere, 2018) in order to investigate whether gender differences exist in terms of the impact of entrepreneurship courses. Previous studies have found that entrepreneurial education was positively correlated with entrepreneurship intentions, and that gender differences exist in terms of entrepreneurial

E-mail address: najib.mozahem@qu.edu.qa.

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intentions. While these results are important for educators, previous studies have mainly focused on entrepreneurial intentions, where entrepreneurial education was treated as one of the factors that affect entrepreneurial intentions. Few studies have attempted to study the impact of entrepreneurial courses and programs from an educational perspective (Karlsson & Moberg, 2013; Warhuus & Basaiawmoit, 2014). This study hopes to shed light on whether gender differences exist in the impact of entrepreneurial education from an educational perspective.

2. Literature review

Since entrepreneurship is essential for growth, researchers have displayed great interest in studying the factors that mobilize people to start new businesses (Thornton, Ribeiro-Soriano, & Urbano, 2011). These factors include, but are not limited to, national culture (Shinnar, Giacomini, & Janssen, 2012), family background (Marques Carla, Santos, Galvão, Mascarenhas, & Justino, 2018), personality traits (Brandstätter, 2011), and intentions (Krueger & Carsrud, 1993).

Of particular importance has been the study of entrepreneurial intentions. This is because behavioral intentions are believed to be the strongest predictor of actual behavior (Ajzen, 1991). A 2002 review found that intentions account for 28% of the variance in entrepreneurial behavior (Sheeran, 2002). Due to its efficacy as a predictor of entrepreneurial behavior, many researchers investigated factors that are believed to be positively correlated with entrepreneurial intentions. Given that entrepreneurship is a socially embedded process (Jack & Anderson, 2002), researchers need to consider both relational and communal factors (Fletcher, 2006), hence the importance of an individual's subjective perceptions about their environment and their relative position in that environment (Díaz-García & Jim). Research investigating gender differences in self-perception has revealed that women have lower entrepreneurial intentions than men (Zhao, Seibert, & Hills, 2005) and that this difference is partly the result of differences in self-perception (Shinnar, Hsu, & Powell, 2014).

Of particular importance to this study is the effect that entrepreneurial education has on self-perception in the field of entrepreneurship. Given that educational programs have the ability to alter an individual's self-perception (van Dinther, Dochy, & Segers, 2011) and are ultimately intended to raise awareness while also preparing future entrepreneurs (Garavan Thomas & O'Connell), entrepreneurial education has received a large share of the attention (Bae et al., 2014). In particular, given that entrepreneurial self-efficacy is believed to increase entrepreneurial intentions (Bullough, Renko, & Myatt, 2014; Lans, Gulikers, & Batterink, 2010; Shinnar et al., 2014), studies have focused on the effect that entrepreneurial education has on entrepreneurial self-efficacy (Shinnar et al., 2014; Westhead & Solesvik, 2015; Wilson et al., 2007).

As a concept, self-efficacy is rooted in social cognitive theory (Bandura, 2001) where self-efficacy is theorized to develop from information gathered from four sources: mastery experience, vicarious experience, social persuasion, and physiological state (Bandura, 1982). In educational programs, students work on projects and solve problems (master experience), students see their classmates and even teachers work on the same problem (vicarious experiences), students receive words of encouragement or discouragement from their teachers (social persuasion), and students develop different feelings for different courses (physiological state). It therefore becomes clear that education plays a vital role in the development of self-efficacy (Schunk, 1989, 1991).

Social cognitive career theory argues that females will shy away from careers that are typically associated with men due to the sex-role socialization process (Betz & Hackett, 1981). Given that the success of an individual in a certain role requires an alignment between the role and individual's attributes (Eagly & Wood, 1999), it comes as no surprise that women display lower levels of self-efficacy in entrepreneurship (Langowitz & Minniti, 2007; Shinnar et al., 2014; Wilson et al., 2007), a field that is associated with masculinity (Yim & Bond, 2002).

3. Purpose of the study

Previous studies have been primarily interested in entrepreneurial self-efficacy as a predictor of entrepreneurial intent, partly due to the belief that the impact of entrepreneurial education can only be determined using activities that students take after graduation, hence the link between education and intent. This belief is reflected in the fact that the entrepreneurial self-efficacy scales used in previous studies are deeply grounded in intention models (Schlaegel & Koenig, 2014). This is also true of studies that are aimed at investigating gender differences (Bae et al., 2014; Díaz-García & Jiménez-Moreno, 2010; Johansen, 2013; Maes, Leroy, & Sels, 2014; Shinnar et al., 2014). The result has been inconsistencies in the scales used (McGee et al., 2009).

Despite the importance of measuring intent and activity in the entrepreneurial setting, universities are more interested in measuring learning and performance, given that they are expected to measure course and program learning outcomes. This is illustrated by the fact that, in 2003, the standards of the Association to Advance Collegiate Schools of Business (AACSB) International were revised, with the most significant change being in the assurance of learning standard, which requires a demonstration of direct educational achievement (Martell, 2007). A significant portion of business schools have allocated more than \$10,000 annually to the implementation of these new standards (Kelley, Tong, & Choi, 2010). Within these business schools, the teaching of entrepreneurship is of particular importance given the increase in interest in this type of education (Katz, 2003a), and the increasing need to validate the utility of entrepreneurship education in general (Neck & Greene, 2011). Unfortunately, few studies have evaluated entrepreneurship education in general (Warhuus & Basaiawmoit, 2014).

Gedeon and Valliere (2018) noted that in order to measure entrepreneurial self-efficacy in an academic setting, educators need to adopt an educational perspective as opposed to relying on measures that are concerned with intent. Since business programs are expected to demonstrate assurances of learning outcomes (Martell, 2007), an entrepreneurial self-efficacy measure that is rooted in an educational perspective is especially useful for measuring whether the learning outcomes have been successfully achieved and whether

different groups of students have benefitted equally from the program. This is especially important in the case of entrepreneurship programs, given that the utility of these programs has been questioned (Neck & Greene, 2011).

Current studies that investigate whether the impact of entrepreneurship education differs between the two genders have been plagued by the problem of using measures that were not rooted in an educational perspective (Barakat et al., 2014; Díaz-García & Jiménez-Moreno, 2010; Maes et al., 2014; Marques Carla et al., 2018; Shinnar et al., 2014; Westhead & Solesvik, 2015; Wilson et al., 2007; Zhang et al., 2014), with different studies adopting different measures, resulting in mixed results (Bae et al., 2014).

Given the above, this study seeks to use the measure developed by Gedeon and Valliere (2018) in order to investigate whether there are gender differences in the impact of entrepreneurship programs as measured by the 44-item entrepreneurial self-efficacy scale which consists of eleven subdomains: opportunity identification and creativity, information alertness, planning under uncertainty, resource marshaling, adaptability, financial management, teamwork, critical thinking, communication, persuading and entrepreneurial selling, and self-management. Results obtained by Mozahem and Adlouni (2021) support the internal consistency of the measure as well as its cross-national validity.

4. Methodology

4.1. Data collection

Data was collected from four private universities in the city of Beirut in Lebanon. The universities were chosen based on the fact that they had the highest number of total students among all private universities in the city. The country has a total of 42 universities despite the fact that the population is around 6 million. According to the Ministry of Education, the total number of students registered in these universities is 200,807, with around 33% of these students enrolled in degrees that are categorized as "Commerce, Business, and Law" (*The statistical bulletin for the academic year 2016-2017, 2018*). Business education is especially important in the country, given that around 33% of undergraduate students are enrolled in degrees that are categorized by the Ministry of Education as "Commerce, Business, and Law," making it the largest category, followed by engineering.

According to the Global Gender Gap Report, the educational parity measure in Lebanon is 0.959 (*The Global Gender Gap Report, 2016*), as illustrated in the fact that out of the 200,807 students at the university level, 56.91% are female (*The statistical bulletin for the academic year 2016-2017, 2018*). Unfortunately, this education parity is not reflected in economic activity where the economic parity is only 0.44. Only 24 percent of working-age women participate in the workforce, of which only 36% are "own-account workers" and a mere 1% are employers (*Lebanon Millennium Development Goals Report, 2013*). Previous studies in the country have found that gender differences start to manifest themselves in high school (Mozahem, Kozbar, Al Hassan, & Mozahem, 2020) and that girls who choose careers that are traditionally associated with masculinity face considerable obstacles (Mozahem, Ghanem, Hamieh, & Shoujaa, 2019).

Surveys were distributed in the business schools of the four universities. The surveys were distributed at the beginning of the fall semester and were all filled anonymously. Respondents belong to one of three categories. First, there are the students that, up until the time the surveys were distributed, had not yet taken the entrepreneurship course. Second, there are students that had already taken the course in a previous semester. Third, there are students that had just enrolled in the course in the fall semester in which the surveys were distributed. Since the surveys were distributed at the beginning of the semester, students in the third group were asked to indicate that they have not yet taken the course.

A total of 592 surveys were collected, with 560 surveys containing no missing data. The other 32 surveys contained at least one missing variable. All of the students were undergraduate business students, with 56.54% of them being female. This is in line with the fact that 56.91% of university students in the country are female. The students included in the sample came from different levels, where 12.24% of them are sophomores, 33.04% are juniors, and 54.725 are seniors. In all four universities from which the sample was selected, the entrepreneurship course is considered an upper-level undergraduate course that is usually taken either when the student is a junior or a senior. This is due to the fact that the entrepreneurship course has prerequisites that must be taken before the student is able to enroll in it. Table 1 shows the distribution of students based on gender, level, and whether they had taken the entrepreneurship course or not.

4.2. Data analysis

In order to test the validity of the construct, confirmatory factor analysis (CFA) was used. CFA separates the shared variance from the unique variances, thereby allowing each item to have its own variance, thus allowing for better estimates of constructs (Acock, 2013). The goodness-of-fit of the models is measured using an array of statistics: the comparative fit index (CFI) and the standardized root mean square residual (SRMR). A reasonably well-fit model should have a CFI that is greater than 0.90, and an SRMR that is less

Table 1
Percentage of students according to whether they took the entrepreneurship course or not grouped by gender and level.

	Female		Male	
	Course not taken	Course taken	Course not taken	Course taken
Sophomore	95.35%	4.65%	96.30%	3.70%
Junior	42.86%	57.14%	35.62%	64.38%
Senior	15.06%	84.94%	16.90%	83.10%

than 0.08 (Hu & Bentler, 1999).

In addition to its utility in testing construct validity, CFA allows for group comparison using a structured means approach that is more accurate than more traditional tests such as multivariate analysis of variance (Thompson & Green, 2006). The comparison is made by fixing the mean of one group at zero, thereby using this group as a reference while allowing the mean of the other group to vary. In addition to comparing the two means, this method allows for testing the significance of the difference. This method of investigating group differences has been used in several studies that measured different types of self-efficacy (Usher & Pajares, 2009; Mozahem, Boulad, & Ghanem, 2020).

Once the structured means approach is used to compare the means of these groups, the magnitude of the differences can be compared by calculating the effect size. This study follows the lead of Acock (2013) to estimate the effect size where we divide the latent mean by the pooled standard deviation,

$$Effect\ Size = \frac{Latent\ Mean}{Pooled\ Standard\ Deviation}$$

5. Results

5.1. Measurement model validation

The first step in the analysis was to verify the measurement model developed by Gedeon and Valliere (2018). Table 2 shows the goodness of fit statistics for all eleven models. Following Acock (2013), the equation used to calculate scale reliability is

$$\rho = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + (\sum \theta_{ii}) + 2(\sum \theta_{ij})}$$

In the above equation, λ_i represents the unstandardized loadings, θ_{ii} represents the estimates of the error variances, and θ_{ij} represents the covariance of the errors. Since no covariances were included in the models, the third term in the denominator is zero. In Table 2, the reliability of all scales are between 0.939 and 0.968, indicating very high reliability. It can also be seen that the CFI index and the SRMR of all models indicate that all models are well-fit models.

5.2. Gender differences in means

In order to investigate whether there are gender differences in both groups of students (those who took the course and those who did not take the course), a structured means approach was used where one of the groups (female in this case) was fixed at zero while allowing the mean for the other group (males) was allowed to vary. Table 3 shows the results for all eleven models for students who have not taken the course, while Table 4 shows the results for students who have taken the course. Both tables include the goodness of fit statistics for each model. These statistics indicate that all the models are well-fit models. Looking at gender difference between the scores of each of the subdomains, the results show that the differences are extremely small, and that, except for the subdomain self-management in Table 3 (students who did not take the course), all gender differences are statistically not significant. The only significant result, at the $p < 0.05$ level, is that females who have not yet taken the course report a higher level of self-management than males who have not yet taken the course. This is in line with the finding that in an academic setting, girls employ more record-keeping and monitoring, environmental structuring, and goal setting and planning than boys (Zimmerman & Martinez-Pons, 1990). However, this difference vanishes when we compare females and males who have taken the course.

5.3. Gender differences in gains

The results indicate that there are no significant differences in the mean scores for males and females, with the exception of self-management for students who have not yet taken the course. We next investigate whether there are gender differences in the increase in entrepreneurial self-efficacy that is expected to take place due to taking an entrepreneurship course. In order to accomplish this, a

Table 2
Goodness of fit statistics for all eleven models.

Subdomain	Scale reliability	CFI	SRMR
Opportunity Identification and Creativity	0.948	1.000	0.000
Information Alertness	0.939	0.951	0.028
Planning under Uncertainty	0.954	0.942	0.031
Resource Marshalling	0.956	0.982	0.014
Adaptability	0.959	0.986	0.012
Financial Management	0.957	1.000	0.000
Teamwork	0.959	0.988	0.012
Critical Thinking	0.956	1.000	0.000
Communication	0.958	1.000	0.003
Persuading and Entrepreneurial Selling	0.955	0.956	0.024
Self-Management	0.968	0.921	0.035

Table 3

Results of model fitting when finding the difference in the means between females and males who did not take the course.

Model	Female	Male	Chi-squared(df)	CFI	SRMR
Opportunity identification and creativity	0 (constrained)	0.028	2.45(4), $p > 0.05$	1.000	0.019
Information alertness	0 (constrained)	0.017	23.57(10), $p < 0.01$	0.978	0.058
Planning under uncertainty	0 (constrained)	0.085	39.86(18), $p < 0.01$	0.978	0.032
Resource marshalling	0 (constrained)	-0.092	41.74(10), $p < 0.001$	0.956	0.058
Adaptability	0 (constrained)	-0.128	31.02(10), $p < 0.001$	0.973	0.048
Financial management	0 (constrained)	-0.032	14.94(7), $p < 0.05$	0.985	0.034
Teamwork	0 (constrained)	-0.076	15.57(10), $p > 0.05$	0.993	0.029
Critical thinking	0 (constrained)	-0.085	5.74(4), $p > 0.05$	0.997	0.040
Communication	0 (constrained)	-0.143	19.57(10), $p < 0.05$	0.986	0.071
Persuading and entrepreneurial selling	0 (constrained)	-0.165	34.88(10), $p < 0.001$	0.965	0.047
Self-management	0 (constrained)	-0.300 ^a	135.89(28), $p < 0.001$	0.930	0.094

^a $p < 0.05$.

Table 4

Results of model fitting when finding the difference in the means between females and males who took the course.

Model	Female	Male	Chi-squared(df)	CFI	SRMR
Opportunity identification and creativity	0 (constrained)	-0.007	3.54(4), $p > 0.05$	1.000	0.019
Information alertness	0 (constrained)	0.038	124.46(10), $p < 0.001$	0.915	0.050
Planning under uncertainty	0 (constrained)	0.022	337.87(18), $p < 0.001$	0.847	0.069
Resource marshalling	0 (constrained)	0.017	110.41(10), $p < 0.001$	0.943	0.036
Adaptability	0 (constrained)	-0.025	52.45(10), $p < 0.001$	0.976	0.032
Financial management	0 (constrained)	0.061	96.32(7), $p < 0.001$	0.937	0.037
Teamwork	0 (constrained)	0.039	62.56(10), $p < 0.001$	0.970	0.077
Critical thinking	0 (constrained)	-0.053	18.39(4), $p < 0.01$	0.988	0.068
Communication	0 (constrained)	0.002	25.65(10), $p < 0.01$	0.992	0.014
Persuading and entrepreneurial selling	0 (constrained)	0.024	150.11(10), $p < 0.001$	0.924	0.057
Self-management	0 (constrained)	-0.016	533.47(28), $p < 0.001$	0.849	0.063

structured means approach is once again used, this time the comparison is made by looking at the scores of males (and females) who did not take the course and males (and females) who have taken the course.

Table 5 displays the results obtained when we compare the mean scores of females (and males) who did not take the course with females (and males) who took the course. The effect size for each subdomain is displayed for both genders. The table clearly shows that the mean for all subdomains is larger for the group of students who had taken the course and that the difference is significant at the $p < 0.001$ level. This is true for both males and females.

To compare the gains of both genders, we need to compare the effect size. The bold font is used to indicate the larger effect size when comparing both genders. Results show that out of the eleven subdomains, the effect size for males is larger in seven of these subdomains, while the effect size is larger or females in four of these subdomains. The only subdomain where the effect size is not classified as "large" is the effect size of self-management for females. The reason why this is so because females who did not take the course already reported a high level of self-management. The largest increase for females is in opportunity identification and creativity, while the largest increase for males is in adaptability. The results indicate that the gains for both genders are large and that the effect sizes of both genders are close, and that the differences in these gains are not statistically significant, with the exception of self-

Table 5

Results of model fitting when finding the difference in the means between respondents who took the course and respondents who did not take the course for each gender separately.

Model	Female			Male		
	Did not take course	Took course	Effect size	Did not take course	Took course	Effect size
Opportunity identification and creativity	0 (constrained)	0.737 ^a	0.998	0 (constrained)	0.723 ^a	0.896
Information alertness	0 (constrained)	0.622 ^a	0.883	0 (constrained)	0.684 ^a	0.899
Planning under uncertainty	0 (constrained)	0.720 ^a	0.941	0 (constrained)	0.644 ^a	0.841
Resource marshalling	0 (constrained)	0.695 ^a	0.905	0 (constrained)	0.793 ^a	0.972
Adaptability	0 (constrained)	0.665 ^a	0.858	0 (constrained)	0.726 ^a	0.998
Financial management	0 (constrained)	0.744 ^a	0.949	0 (constrained)	0.786 ^a	0.975
Teamwork	0 (constrained)	0.708 ^a	0.895	0 (constrained)	0.835 ^a	0.932
Critical thinking	0 (constrained)	0.699 ^a	0.865	0 (constrained)	0.684 ^a	0.854
Communication	0 (constrained)	0.625 ^a	0.814	0 (constrained)	0.745 ^a	0.966
Persuading and entrepreneurial selling	0 (constrained)	0.679 ^a	0.900	0 (constrained)	0.869 ^a	0.898
Self-management	0 (constrained)	0.370 ^a	0.483	0 (constrained)	0.778 ^a	0.922

^a $p < 0.001$.

management.

6. Discussion and conclusion

While previous studies were interested in entrepreneurial self-efficacy due to its posited effect on entrepreneurial intentions, the measure developed by Gedeon and Valliere (2018) is intended to measure entrepreneurial self-efficacy in order to augment more direct measures used in education. Since self-efficacy is a predictor of choice (Betz & Hackett, 1986) and performance (Gore, 2006), the measure used in this study is well-suited to understand the impact of pedagogy on educational outcomes.

The results obtained in this study contribute to the existing literature in several ways. First, this study has demonstrated how the measure developed by Gedeon and Valliere (2018) is well-suited to be used as an indirect measure that augments currently used direct measures in entrepreneurship education (Weldy & Turnipseed, 2010). Despite growing interest in entrepreneurship education (Katz, 2003), studies evaluating the impact of entrepreneurship education are unfortunately lacking (Warhuus & Basaiawmoit, 2014), with different studies producing conflicting results (Karlsson & Moberg, 2013).

A second contribution of the current study is the finding that the impact of entrepreneurship education on both male and female students is statistically strong, as illustrated by the effect sizes presented in Table 5. This result is important, given the fact that studies have shown that the benefit of entrepreneurship education differs between genders (Johansen, 2013; Westhead & Solesvik, 2015; Wilson et al., 2007). The results, however, are mixed with some studies showing that the impact of entrepreneurship education is stronger for males (Johansen, 2013), other studies finding that the impact is stronger for females (Wilson et al., 2007), and some studies showing that there are no gender differences (Bae et al., 2014). While the results obtained in this study show that both males and females benefit significantly from entrepreneurship education, the results go a step further by investigating gender differences in specific subdomains. The results indicate that female students benefit more than male students in subdomains such as opportunity identification and creativity, planning under uncertainty, and critical thinking. Males, on the other hand, benefit more than females in subdomains such as resource marshaling, adaptability, teamwork, and communication. Nonetheless, the difference between the two genders in these subdomains remains small, given that the effect size in ten of the eleven subdomains was found to be large. The only exception is in the subdomain self-management where females benefited less than males. However, this was due to the fact that both female students who did not take the course and female students who took the course reported high scores on this subdomain. On the other side, male students who did not take the course scored significantly lower on this subdomain than male students who had taken the course.

The third contribution of this study is that the results indicate that there are no gender differences between students who did not take the course. In addition, no gender differences were found to exist between students who had taken the course. This finding has an important implication for educators. While there have been calls for educators to tailor their teaching by gender (Westhead & Solesvik, 2015), the finding that there are no gender differences in both groups of students (those who did not take the course and those who had already taken a course) indicates that, pedagogically at least, there is no need to offer different programs to different students. However, this also means that the solution to the problem that fewer females engage in entrepreneurship than males is not pedagogical. Hence, the results indicate that future research might benefit more by focusing on other social factors (Shinnar et al., 2012).

The findings of this study are important in terms of the national setting. According to a report published by the World Economic Forum, the gender educational parity measure in Lebanon is 0.959 (*The Global Gender Gap Report*, 2016). However, this educational parity has not been translated into economic parity, which is only 0.44. Given the impact that entrepreneurship has on economic growth (Wennekers & Thurik, 1999), an investigation of women's economic activities needs to include an investigation of women's entrepreneurial activities. Unfortunately, there is a lack of literature discussing women entrepreneurship in the Middle East in general (Hattab, 2012) and entrepreneurship education in the area in particular (Guerrero, Urbano, & Salamzadeh, 2014). The small number of studies dealing with the subject matter have indicated that despite a growing number of female entrepreneurs in the Middle East, female entrepreneurial activity in the region is extremely low (Bastian Bettina, SidaniYusuf, & El Amine, 2018), including in Lebanon despite the fact that Lebanese women show great confidence in their knowledge and in their ability to start a business (Hattab, 2012). This, coupled with the findings of the present study, indicate that the problem of gender differences in entrepreneurial activity is not an educational problem. The findings of this study indicate that women gain as much as men from entrepreneurship education. As such, gendered differences in entrepreneurial activity are not the result of lack of skills or lack of self-belief on the part of women. Instead, the topic should be tackled from a broader social perspective that deals with the lack of business support systems for women (Bastian Bettina et al., 2018), as well as the gendered social environment (Hattab, 2012).

7. Limitations

This study is not without limitations, with the primary limitation being that the sample used is a convenience sample. Ideally, a random sample would have been used. As such, the results obtained in this study can benefit from further validation studies. Second, the dataset used in the study does not include pre and post data about the same group of students. Instead, the sample of students who did not take the course is different than the sample of students who had taken the course. In general, when investigating the effect of a course, using pre and post information would produce more rigorous results since individual differences would be eliminated. Finally, while useful, CFA allows us to study correlation and not causation.

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