



The Personal Entrepreneurial Competencies (PECs) of the BS in Entrepreneurship Students Batch 2016 of the Mariano Marcos State University, City of Batac, Ilocos Norte, Philippines

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ABSTRACT

Entrepreneurship education plays a significant role in economic development. Moreover, it is a driving force to encourage students to start and manage their businesses by honing their entrepreneurial competencies. The Bachelor of Science in Entrepreneurship of the Mariano Marcos State University, however, struggles to produce graduates who engage in business because they prefer to be employed. Given the premise that entrepreneurship education influences the development and improvement of students' competencies, the researchers probed on the students' Personal Entrepreneurial Competencies (PECs) improved after four years of exposure to entrepreneurship education, as well as the significant difference between their PECs in 2012 and 2016. This study used quantitative research. A questionnaire was designed to elicit the socio-demographic and economic profile of the student respondents. The PECs survey questionnaire, which was adapted from the MSI and McBer Team questionnaire, was used to gather data regarding the PEC profile of the students. The results of the study revealed that the students' PECs improved in 2016 especially along goal setting. Risk taking and systematic planning and monitoring however did not have a significant difference.

Keywords: *Entrepreneurship Education, Personal Entrepreneurial Competencies*

I. INTRODUCTION

Entrepreneurship is an economic factor that drives economic growth and creates income-generating opportunities (Cudia, RiveraT & Tullao Jr, 2019). Universities are becoming more important in the growth of entrepreneurship. Higher education institutions could improve their educational processes to facilitate the development of specific competencies (Robles & Zarraga-Rodriguez, 2019). That is why, universities are developing specialized curricula and initiatives to help students improve their innovative and entrepreneurial competencies in this context (Pesha, Shavrovskaya & Caha, 2021). One of the key elements of a business curriculum that needs to be explained to the students is entrepreneurial competency, given that these students will go on to become future entrepreneurs (Alusen, 2016). The entrepreneurial competencies of business students may boost the economy's capacity for innovation and so promote economic well-being. This is learned through entrepreneurial education (Akeke, Oche, Akuegwu & Ushie, 2022). Developing a level of entrepreneurial competencies is the primary objective of the majority of entrepreneurial education programs (Lackéus, & Middleton, 2015). Universities have progressed entrepreneurship education programs as a response to national policies, which are essential in encouraging students' self-employment that strengthens entrepreneurial skills, and heightens entrepreneurial intention (Lv, 2021).

The Bachelor of Science in Entrepreneurship is a four-year degree program at Mariano Marcos State University's College of Business, Economics, and Accountancy designed to produce graduates who will set up and manage their own businesses. However, the program faces the dilemma of not producing entrepreneurs because graduates prefer to be employed. Furthermore, only four (3.50%) of 114 BS in Entrepreneurship graduates from School Year 2014 to 2016 established their own businesses, while the rest were either employed or unemployed (Barot, 2017). According to a similar study, the College's BS Entrepreneurship graduates are hesitant to start their own businesses due to a lack of experience as well as unforeseen business challenges and expenses. These issues arose due to the students' lack of risk-taking abilities and self-confidence. As a result, the researchers conducted research to determine the students' strengths

and weaknesses in terms of their personal entrepreneurial competencies. The students' PECs prior to graduation (ex-post) were also compared to their personal entrepreneurial competencies upon enrollment (ex-ante). The findings assisted faculty members in improving the curriculum and the students' competencies that received low scores. Management System International's ten (10) Personal Entrepreneurial Competencies (PECs) were employed.

Management System International (MSI) launched a five-year study project with McBer & Company in 1989, funded by USAID, to identify the competencies that successful entrepreneurs share across nations. The study yielded the identification of ten personal entrepreneurial competencies (PECs). An individual's entrepreneurial aptitude, according to MSI, can be predicted based on how strongly they exhibit these personal entrepreneurial competencies (Reyes, et al., 2018). Opportunity seeking, perseverance, commitment to a work agreement, risk-taking, demand for effectiveness and quality, goal-seeking, information-seeking, systematic planning and monitoring, persuasion and networking, and self-assurance are examples (Kyuolien & Vipras, 2019).

The PEC questionnaire contains 55 statements in which students rate themselves on a scale of 1 (never) to 5 (always). If necessary, they must use the specified correction factor to modify their scores. Because it was expected that some students would overestimate their abilities, the questionnaire includes a correcting factor (Reyes, et al., 2018).

Given the premise that entrepreneurship education influences the development and improvement of students' competencies, the researchers want to know if the students' PECs improved after four years of exposure to entrepreneurship education, as well as the significant difference between their PECs in 2012 and 2016.

The remainder of this paper has the following structure: It presents the objectives and methodology used in the study. Subsequently, it discusses the key findings on the socio-demographic and economic profile and level of personal entrepreneurial competencies of the BS Entrepreneurship Students Batch 2016 and the difference between their PECs score taken in AY 2012-2013 and AY 2015 -2016. Finally, it recapitulates the conclusions drawn from the study.

II. RESEARCH METHODS

This study is quantitative research. To elicit information on the socio-demographic and economic profile of the respondents, a questionnaire was designed. Open-ended questions were used for family income, number of family members, occupation of parents and number of relatives engaged in business. Checklist format was used on the students' involvement in extracurricular activities. The same set of questionnaires was answered by the students during their first year and fourth year. To determine their scholastic standing, secondary data such as the high school grades of the students and their general weighted average in college were used.

The PEC survey questionnaire which was adapted from the questionnaire developed by MSI and McBer Team was used to elicit information on the PEC profile of the students. To ensure that the competencies identified in CMO No. 17, s. 2005 are covered in the adapted questionnaire, the researchers made use of the following which was also used by Barot (2017) in her study.

Required competencies of BS Entrepreneurship graduates based from Article IV Sec. 7 of CMO No. 17 s. 2005	The corresponding competencies based from Management Systems International and McBer Team which will most likely attain the competencies in the CMO
Have an orientation and motivation of an entrepreneur	Persistence and self-confidence
Identify business opportunities	Opportunity seeking, risk-taking, persuasion and networking, and information seeking
Prepare business plans	Systematic planning and monitoring and goal setting
Accomplish requirements to start a business	Commitment to work contract and demand for quality and efficiency
Operate and manage business efficiently and effectively	All the personal entrepreneurial competencies fall under this competency standard as all characteristics are required to attain enterprise goals and objectives

The research made use of descriptive analysis to describe the profile of the respondents and their PECs. Frequencies, means and weighted average mean were used to determine the socio-demographic, economic and PECs profile of the respondents. The t-test was adopted to determine the degree of difference between the ex-post and ex-ante variables. In determining the level of Personal Entrepreneurial Competencies of the students, the following norms were used:

Scores	Descriptive Interpretation
20.01 – 25.00	High Competency
15.01 – 20.00	Moderate High Competency
10.01 – 15.00	Average Competency
5.01 – 10.00	Moderate Low Competency
0.00 – 5.00	Low Competency

The population consists of BS Entrepreneurship students admitted in the First Semester of the 2012-2013 academic year. Only those who graduated in 2016 were included in the sample. This is to create a homogeneous group that allows for comparison of their PECs when they were admitted (ex-ante) to the program and when they graduated (ex-post). During the 2012-2013 academic year, forty students were included. However, eight of them dropped out and

transferred, while the others did not continue with the program. This study's respondents were the remaining thirty-two students. Because they were unable to participate in the ex-ante survey in 2012, transferees and shiftees who graduated in 2016 were not included in the survey.

III. RESEARCH AND DISCUSSION

3.1 Socio-demographic and economic profile of the BS Entrepreneurship Students Batch 2016

Table 1 shows the respondents' socio-demographic and economic profiles. It reveals that the majority of respondents (87.50%) are female, implying that females are more motivated to pursue entrepreneurship education. In terms of academic standing, the respondents are considered average students. The majority (68.75%) belong to a family of 4-6 members. In terms of participation in extracurricular activities, almost everyone (96.88%) participated in training during their first year, while they were more active as participants in school programs and contestants in various competitions (96.98%) during their fourth year. Their year level could be a factor, as fourth-year students typically take the lead in organizing and attending activities, as well as becoming members of various organizations. Fourth-year students are typically hesitant to become officers of an organization because so much time is spent preparing accomplishment reports, which is a requirement in signing their clearance forms, resulting in a delay in the issuance of their transcript of records and diploma.

The table also shows that the majority of respondents (53.13% and 31.25%, respectively) have a monthly family income ranging from PhP5,000 to PhP10,000. Their primary source of income has been farming (43.75% and 40.63%, respectively). This also demonstrates that the majority of respondents rely solely on the income of the head of the family because their mothers are simple housewives (59.38% and 50.00%). The majority of respondents (71.88% and 68.75%) stated that they do not have relatives who are business owners.

Table 1. Socio-demographic and economic profile of the BS Entrepreneurship student's batch 2016

Factors	Ex-Ante (AY 2012-2013)		Ex-Post (AY 2015-2016)		
	Frequency	Percentage	Frequency	Percentage	
SOCIO-DEMOGRAPHIC PROFILE					
Gender					
	Female	28	87.50		
	Male	4	12.50		
Civil Status					
	Single	32	100.00		
Number of family members					
	1-3	4	12.50	5	15.63
	4-6	22	68.75	22	68.75
	7 and above	6	18.75	5	15.63
HS Average					
	Below 80	1	3.13		
	80-85	15	46.88		
	Above 85	16	50.00		
College GWA					
	2.00-2.25			6	18.75
	2.26-2.50			18	56.25
	2.51 and below			8	25.00
Involvement in extracurricular activities					
	Member of an organization	23	71.88	31	96.88
	Officer of an organization	10	31.25	6	18.75
	Contestant in various competitions	24	75.00	31	96.88
	Participant in trainings	31	96.88	24	75.00
	Participant in school programs	10	31.25	32	100.00
ECONOMIC PROFILE					
Monthly Family Income (PhP)					
	5,000 and below	10	31.25	7	21.88
	5,001-10,000	17	53.13	10	31.25

Factors	Ex-Ante (AY 2012-2013)		Ex-Post (AY 2015-2016)		
	Frequency	Percentage	Frequency	Percentage	
	10,001-15,000	4	12.50	9	28.13
	15,001 and above	1	3.13	6	18.75
Occupation of Father					
	Farmer	14	43.75	13	40.63
	Laborer	4	12.50	4	12.50
	Driver	3	9.38	3	9.38
	Office worker	1	3.13	2	6.25
	Security guard	1	3.13	1	3.13
	Self-employed	1	3.13	2	6.25
	Teacher	2	6.25	2	6.25
	Carpenter	1	3.13	2	6.25
	No answer	5	15.62	3	9.38
Occupation of Mother					
	Housewife	19	59.38	16	50.00
	House helper	2	6.25	2	6.25
	Businesswoman	1	3.13	1	3.13
	Office clerk	1	3.13	1	3.13
	Coop Manager	1	3.13	2	6.25
	Teacher	1	3.13	1	3.13
	Vendor	3	9.38	3	9.38
	No answer	4	12.5	6	18.75
Relatives engaged in business					
	0	23	71.88	22	68.75
	1	6	18.75	6	18.75
	2	2	6.25	3	9.38
	3	1	3.13	1	3.13

3.2 Level of Personal Entrepreneurial Competencies of the BS Entrepreneurship Students Batch 2016

The table shows that students scored moderately to highly in all competencies during their first year. This means that the students possessed these ten competencies as early as first year, which may have prompted them to enroll in the BS Entrepreneurship program. It is worth noting, however, that the average scores in all PECs increased in their fourth year. It is also clear that during their fourth year, the students have moderate-high scores in almost all competencies, with the exception of goal setting, where they received a high score.

Students admitted to entrepreneurship programs in 2012 demonstrated improved personal entrepreneurial competencies in 2016, as evidenced by an increase in their average scores. The researchers believe that one of the factors influencing the increase in students' PECs is the teaching methods used by the program's faculty members. Pesha (2022) agrees with other authors' findings on the importance of educational factors in the development of entrepreneurial competencies and intentions. Furthermore, Neck and Greene (2011) emphasized the importance of using various pedagogical methods in entrepreneurship teaching to assist students in developing their entrepreneurial skills. However, according to Hyuk and Park (2019), as cited in Pesha (2022), personal factors, in addition to educational factors, have the greatest impact on the development of entrepreneurial competencies. According to Stenholm, Ramstrom, Franzen, and Nieminen (2021), the importance of learning environments, context, and pedagogical strategies in assisting students in developing entrepreneurial competencies is emphasized in entrepreneurship education research (EE). According to their findings, different pedagogical approaches can foster a variety of entrepreneurial competencies even when the subject matter is not specifically geared toward entrepreneurship.

Students had moderate-high scores in all ten competencies in 2012, but only high scores in goal setting in 2016. This finding backs up Paladan's (2015) findings that senior students have moderate personal entrepreneurial competency because they have already gained more knowledge and experience with starting a business. It is consistent with the findings of Baticados et al. (2014), who discovered that BSABM junior and senior students, as well as Master of Management students (MM), scored higher in goal setting than BS Agribusiness Management (BSABM) freshman and sophomore students. According to the findings of Buitrago, Polinar, Delantar, and Buntigao (2022), goal-setting ranked first among the entrepreneurial competencies of Accountancy, Business, and Management (ABM) students at a private university. In 2016, the students had the lowest risk-taking average. This finding corroborates the findings of Bautista, Barlis, and Nazario (2007), who discovered that their student-respondents are the weakest and thus require the most improvement in risk-taking, opportunity seeking, and self-confidence. According to Baticodaos et al. (2014), BSABM students were more capable of taking risks than MM students, and older people were less aggressive than younger people. Buitrago et al (2022) found that the sampled students had a moderate risk-taking competency, were ranked tenth, and were considered to have a weak competency. This, however, contradicts the findings of Paladan (2015), who found that students scored highly in risk-taking. The study of Gonzaga (2019) also revealed that risk-

taking was cited by the 4th year BS Entrepreneurship student respondents as the first among the Personal Entrepreneurial Competencies (PEC) acquired during their Business Plan Implementation in SY 2016-2017.

According to observations, students become more serious about their lives and studies during their senior year. In this context, the students' concerns were focused on obtaining a diploma and the opportunities such as getting a job, better pay, a high quality of life, and prestige, among others (Leal, et al, 2013). Furthermore, goal-setting was ranked second among PECs perceived by student respondents in the Gonzaga (2019) study, which revealed that the majority of them were able to define and map out their goals during business plan implementation. As a result, goal setting is an important activity for a senior student who wants to graduate on time. This could explain why the students received a high score in this competency.

Table 2. Level of Personal Entrepreneurial Competencies of the BS Entrepreneurship Students batch 2016 during the AY 2012-2013 and AY 2015-2016

Competencies	Ex-Ante (AY 2012-2013)		Ex-Post (AY 2015-2016)	
	Average Score	Descriptive Interpretation	Average Score	Descriptive Interpretation
Opportunity Seeking	17.63	Moderate High Competency	18.78	Moderate High Competency
Persistence	17.66	Moderate High Competency	19.09	Moderate High Competency
Commitment to the Work Contract	17.00	Moderate High Competency	18.31	Moderate High Competency
Demand for Quality and Efficiency	16.13	Moderate High Competency	19.34	Moderate High Competency
Risk Taking	16.31	Moderate High Competency	17.19	Moderate High Competency
Goal Setting	15.94	Moderate High Competency	20.28	High Competency
Information Seeking	16.91	Moderate High Competency	19.25	Moderate High Competency
Systematic Planning and Monitoring	17.31	Moderate High Competency	18.19	Moderate High Competency
Persuasion and Networking	15.41	Moderate High Competency	17.56	Moderate High Competency
Self-confidence	16.47	Moderate High Competency	18.25	Moderate High Competency
OVERALL MEAN	16.68	Moderate High Competency	18.62	Moderate High Competency

3.3 Difference between the Personal Entrepreneurial Competencies of the BS Entrepreneurship Students batch 2016 taken in AY 2012-2013 and AY 2015 -2016

Table 3 reveals a significant difference in the following competencies: commitment to work contract, demand for quality and efficiency, goal setting, information seeking, persuasion and networking, and self-confidence. Students' exposure to a variety of activities aided in their ability to become committed to the responsibilities assigned to them and to demand quality and efficiency. For example, during their immersion (internships), the majority of students received very high ratings along these competencies and positive feedback from their supervisors such as "worked hard to achieve goals; can always be counted on to work overtime when necessary, and demonstrates commitment and dedication to work." Their exposure as members of an organization encouraged the students to work hard to complete all work on time without sacrificing quality. Students who have a high level of demand for quality and efficiency, according to Paladan (2015), have the entrepreneur's ability to try to do things better, faster, or cheaper; they can set high standards of excellence and will not compromise on the standards they set. Wardana et al. (2020) emphasizes the importance of internships, company visits, and allowing students to conduct interviews with successful entrepreneurs. These techniques will boost their entrepreneurial willingness and skills (Potishuk & Kratzer, 2017). Alusen (2016) also suggested that more active learning, internship, and simulation activities be used to improve entrepreneurial competencies and encourage entrepreneurship. The subjects offered in the fourth year necessitate efficiency because actual outputs such as a business plan, business registration, and results of business operations serve as the foundation for final grades. Garcia, Lara, and Lopez (2019) concluded in their study that developing a business plan promotes the development of entrepreneurial skills, possibly because students who create business plans have special entrepreneurial attitudes.

Goal-setting, according to Eastern Washington University, is the process of actively taking steps to achieve desired results (inside.ewu.edu). The individual plans his actions and makes careful decisions based on where he wants to go (Alusen, 2016). It denotes their commitment to setting specific, measurable, attainable, reliable, and time-bound (SMART) goals and meeting them as soon as possible Buitrago et al (2022). Students' goal-setting abilities may have

improved as a result of the subjects Entrp 107 (Business Plan II) and Entrp 200b (Business Plan Implementation II). Both subjects necessitate the creation of a vision, mission, goals, and objectives, as well as the identification of the strategies required to achieve these. Information-seeking is the behavior of gathering information from appropriate sources in order to develop business strategies (Alusen, 2016). Entrp 101 (Business Opportunity Identification I) and Entrp 105 (Business Opportunity Identification II) have helped students improve their information-seeking abilities because they were required to gather a large amount of information in order to identify business opportunities and eventually come up with business ideas. Entrp 106 (Business Plan I) is also a consideration because they were required to collect data (market analysis) in order to determine the viability and feasibility of their chosen business. These findings contradict Paladan's (2015) study, which discovered that students scored lowest in commitment to work contracts, goal setting, and information seeking.

Persuasion and networking show a significant difference as well. This is because most entrepreneurship subjects do not require persuasion or networking during the first year. Students learn to persuade others in their third and fourth years by defending their feasibility studies and business plans, encouraging customers to buy their products, and establishing networks with distributors and suppliers. Off-campus activities such as seminars and trade fairs help students strengthen their ability to connect with others. According to Alusen (2016), students' ability to expand their networks, as well as their assertiveness and communication skills, may be hampered by non-attendance and exposure to off-campus activities such as attending symposiums, seminars, trade shows, conventions, and conferences. Staying in a specific business for nearly a semester with business owners and clients aided students in improving these competencies. Furthermore, the students worked hard to achieve their business objectives in Entrp 200b (Business Plan Implementation II). They worked hard to persuade customers to buy their products and built relationships with suppliers who could provide them with lower-cost inputs. Implementing a business plan allows students to manage a business, interact with others for organizational development, and collaborate with stakeholders (Gonzaga, 2019).

There is a significant difference between opportunity-seeking and persistence. Students were exposed to seeking opportunities as early as their first year. For example, the Entre Nego project of the Young Entrepreneur's Society (YES) - an academic organization of BS Entrepreneurship students - allows students to search for potential investment opportunities. This is done once a year. According to Baticados et al. (2014), engagement in an organization significantly correlates with opportunity-seeking and persistence, indicating that involvement in an organization has some influence on a person's ability to seize opportunities and persistence. In their fourth year, the students have become more vigilant and aggressive in identifying opportunities to increase the value of their investments. Persistence is required to complete all requirements, especially during the fourth or final year of study. In comparison to their first year, when students are more relaxed, fourth-year students are more dedicated because they want to graduate on time. It supports the findings of Baticados et al. (2014) that graduate students had the highest persistence score compared to undergraduates because students with more adult responsibilities were expected to be more persistent and motivated to achieve their goals. As a result, despite obstacles or hardships such as too many requirements or conflicting schedules, students strive to pass all of their subjects.

Risk-taking, on the other hand, has no significant difference. The students' ability to take risks has been hampered by their academic load. Because they had other subjects during their fourth year, the students were not solely focused on the implementation of their business. This could explain why students had few options for what and where to put up their business, resulting in low risk-taking. In terms of financial capability, most students rely solely on the income of the head of the family, so they are afraid of losing money, which affects their risk-taking ability. It is worth noting that even experienced entrepreneurs struggle with risk-taking (Bautista, et al, 2007). It confirms Yurtkoru, Acar, and Teraman's (2014) findings that the profile of state university students willing to take risks do not intend to become entrepreneurs for socioeconomic reasons.

The results also show no significant difference in systematic planning and monitoring, which contradicts a very significant difference in goal setting, because goal setting is required when planning. This is because, as freshmen, they were not yet motivated to set goals because they were too preoccupied with adjusting to their new surroundings. However, by their fourth year, the students were motivated to improve their goal-setting activities by the desire to complete all academic requirements and graduate from the program. Although the students have made significant progress in goal setting, which is an important aspect of systematic planning, they have neglected to monitor their progress. According to observations, the students were overly focused on achieving their objectives and on the outcome. They have a tendency to carry out tasks at a high cost without monitoring and thinking things through to find alternative ways to achieve the goals more easily and at a lower cost. For example, during the implementation of their business plans, the students were overly aggressive in increasing sales while failing to monitor whether policies had been properly implemented. Students also have a tendency to assume that their business is profitable without keeping track of their expenses.

Table 3. Difference between the Personal Entrepreneurial Competencies of the BS Entrepreneurship Students batch 2016 taken in AY 2012-2013 and AY 2015-2016

Competencies	t-value	p-value
Opportunity Seeking	-2.2404*	0.0324
Persistence	-2.6145*	0.0137
Commitment to the Work Contract	-3.4110**	0.0018
Demand for Quality and Efficiency	-7.2511**	0.0000
Risk Taking	-1.6664	0.1057
Goal Setting	-8.6317**	0.0000
Information Seeking	-3.5548**	0.0012
Systematic Planning and Monitoring	-1.4658	0.1528
Persuasion and Networking	-2.8243**	0.0082
Self-confidence	-2.7483**	0.0100

*Significant at .05

**significant at .01

t-crit=2.0395

IV. CONCLUSIONS

According to the study, between 2012 and 2016, students' entrepreneurial skills improved. However, the researchers cannot conclude that the improvement is solely due to the teaching methods employed; other factors must be considered. Activities that improve students' risk-taking, systematic planning, and monitoring skills are critical, as evidenced by the lack of a significant difference between these skills in 2012 and 2016. Moreover, determining the entrepreneurial competencies of students is a vital element in designing teaching strategies to hone their competencies and encourage them to venture into business.

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