Performance and Profitability of Student-Led Enterprises in the BS Entrepreneurship Program of Cagayan State University

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Abstract:

This researched touched on the entrepreneurial capabilities of the BS Entrepreneurship students of Cagayan State University in starting and operating ventures. The profile and profitability of the student-led enterprises which were conducted under the period of business plan implementation were analyzed. A descriptive research design was utilized, making use of the business documentation, financial records as well as a structured survey data from the 221 student-entrepreneurs. A total of 15 student-led enterprises were assessed for their profile in terms of industry classification, capitalization, product offerings and business location. Profitability was computed using standard financial indicators such as Return on Investment (ROI), Gross Profit Margin (GPM), Net Profit Margin (NPM), and Return on Assets (ROA). Results revealed that all the student-led ventures were operated as partnerships and were pre-dominantly classified under agriculture, manufacturing, food services, and administrative/support sectors. Further, most of the students opted to operate within Tuguegarao City, Cagayan with majority having capitalizations ranging from 25,000.00-50,000.00. Majority of the ventures offered mushroom based products while others also offered snack foods, baked goodies. The profitability of the ventures varied widely across ventures with agriculture-based businesses, particularly mushroom production and processing showing greatest potential having recorded an average mean ROI (82.14%) and GPM (56.33%). The variation also portrays the differences in entrepreneurial competencies, cost-management practices and market responsiveness experienced by the groups. Challenges in terms of financial and operational aspects of running the business to include pricing difficulties, demand changes as well as resource constraints support present body of literature on beginning entrepreneurs. Overall, the results highlight the effectiveness of experiential learning in developing practical entrepreneurial capabilities while emphasizing the need for improved instructional support particularly in financial planning, market analysis and strategic decision making. The study recommends the creation of targeted curriculum interventions and reinforced incubation program to be able to strengthen venture sustainability. This would also enhance graduate readiness for real-world entrepreneurship.

Keywords: entrepreneurial competencies; student-led enterprises; profitability analysis; venture barriers; experiential learning

INTRODUCTION

Entrepreneurship has always been seen as one of the major drivers of socio-economic changes, innovating, and influencing the society at large around the world. Over the last few decades, the higher education system has visibly changed its face as far as entrepreneurship education is concerned. Universities across the globe are now pretty much equipping students to develop their talent for identifying opportunities, coming up with innovative ideas, being resilient in the face of adversity, and mastering business skills through planning of startup businesses (Ratten, 2021; Miço, 2023). Experiential learning methods such as business incubation, venture simulations, and real business implementation, have been put at the forefront in the acquisition of practical skills which the

traditional lecture-based method only scarcely provides. Judging from the situation, the COVID-19 pandemic could actually be said to have reinforced the entrepreneurial skills need that is characterized by agility as markets began to rely more on digitalization, supply chains had to undergo changes, and the youth entrepreneurs were basically required to adjust to volatility and uncertainty (Ratten, 2021). Consequently, the effectiveness of entrepreneurship programs in imparting such skills has become a key issue that educators and policymakers are greatly concerned with.

Comprehensive findings at global level point to the fact that recognizing opportunities, acquiring resources, taking risks, and coming up with innovative solutions by using the product or service in question are at the core of the competencies that lead to a breakthrough of an entrepreneur (Miço, 2023; Nabi et al., 2017). Yet, the factual data indicates that what is taught in class does not automatically bring about the creation of successful ventures; rather, the on-the-job entrepreneurial experiences have a powerful effect in strengthening students' entrepreneurial intentions and post-graduation business pursuits. The global trend thus is very much in sync with the situation in the developing countries where entrepreneurship plays a vital role in the resolution of problems like unemployment, income distribution, and regional development disparities (OECD, 2021). Therefore, the universities are being looked upon to progressively take up the role of delivering not only entrepreneurship education but also the extensive entrepreneurial training that can turn out graduates who are not only employable but also have the capability to start ventures themselves.

Entrepreneurship is a strategic driver of national development in the Philippines. Micro, small, and medium enterprises (MSMEs) make up 99.59% of all registered establishments and employ more than 64% of the national workforce (DTI, 2023), which indicates the sector's significance in creating jobs and alleviating poverty. Understanding this, the Commission on Higher Education (CHED) requires the BS Entrepreneurship programs to explicitly show entrepreneurial competencies as per the CMO 18 series of 2017. Besides that, the Department of Trade and Industry (DTI) and its MSME Development Plan put a great emphasize on the promotion of the local industry through skill development, innovation, and access to financing as a way of solving the problem of lack of capital, limited market access, and poor business management skills (DTI, 2021). However, even with substantial policy backing, research unveils that young entrepreneurs in the Philippines still struggle with the access to finances, operations, infrastructure, and regulations that affect the continuity of student-led or graduate-led enterprises.

There are various studies that measure entrepreneurial intentions or competencies among students in the Philippines, but only a few focus on the actual business outcomes that stem from such competencies, especially in higher education programs where the execution of a real business is a requirement. Most of the literature also highlights the gap that exists between exposure to entrepreneurship programs and the move to start one's own business full-time, which is the main barrier for graduates of such programs. In addition, the extent of research into the comparative success of student-led ventures with respect to profitability goals such as return on investment, profit margins, and asset utilization, which are the key metrics for the real-life application of entrepreneurship programs, has been very limited.

In order to close these research gaps, this research surveys skill development in entrepreneurship and venture barriers among BS Entrepreneurship students of Cagayan State University. It was intended to evaluate the (1) the profile of businesses implemented by students, and (2) the profitability of these ventures as indicators of applied entrepreneurial competence. The research, by studying not only the nature of the student-run enterprises but also their financial performance, records a real measure of the effectiveness of the experiential entrepreneurship education and identifies the main factors that discourage graduates from becoming full-time entrepreneurs. The findings are intended to serve as a source of information for the improvement of the syllabus, university-based incubation, and policy interventions to strengthen the entrepreneurial ecosystem, which would be of great benefit to student entrepreneurs.

MATERIALS AND METHODS

Research Design

This study utilized a descriptive research design to investigate the development of entrepreneurial skills the BS Entrepreneurship students of Cagayan State University, and the barriers to their ventures. The design was suitable for systematically describing the characteristics of student-implemented businesses, assessing their profitability, and determining the constraints that influenced their entrepreneurial performance. Descriptive research makes it possible to quantify both the measures of the venture outcomes and the self-reported competencies, thus, allowing objective comparison across student enterprises.

Participants and Study Site

The research was carried out at Cagayan State University, a public higher education institution in the Northern Philippines, which offers a Bachelor of Science degree program in Entrepreneurship. The respondents were BS Entrepreneurship students who had gone through the entrepreneurship practicum and had to implement a real business venture for a specified period of operation. The study population comprised 221 students who were actively involved in the program. These students initiated various kinds of microenterprises such as manufacturing, agribusiness, food services, trading, and service-oriented industries. Furthermore, the inclusion criteria stipulated that each participant (1) should be involved in a business implementation activity that is formally documented, and (2) have completed the necessary reports and financial statements.

Data Sources and Instruments

The data for this research came from the Business Plan Implementation records particularly the Portfolio of the students for academic years 2017-2019. These business implementation records included the business profiles printed on paper, , with data showing the sources of business funds, a brief description of the business operation, and formally prepared financial statements (profit and loss statement, balance sheet, and cost records). These papers made it possible to calculate various profitability ratios such as Return on Investment (ROI), Gross Profit Margin (GPM), Net Profit Margin (NPM), and Return on Assets (ROA).

Data Gathering Procedure

Data gathering for the study was done in two stages. The initial stage entailed getting official permission from the program chairperson. After that, the portfolios submitted by the students were secured to be able to study the business documents and its financial records. Data from the financial records were then examined to determine the profile and analyze the profitability of the business ventures.

Data Analysis

Data was analyzed in accordance with the objectives of the study. Frequency and percentage distribution were used in describing the profile of the businesses. In measuring profitability, standard industry ratios were utilized. The following ratios were used to calculate the profitability of the ventures used in the study:

- ROI = (Net Profit / Total Investment) × 100
- GPM = (Gross Profit / Net Sales) × 100
- NPM = (Net Profit / Net Sales) × 100
- ROA = (Net Income / Total Assets) × 100

All the statistical work was done with the help of Microsoft Excel, and the findings were

communicated through tables, descriptive summaries, and interpretive discussions.

RESULTS AND DISCUSSION

Profile of Implemented Student Businesses

Table 1 detail the profiles of 15 student-led enterprises as one of the hands-on activities under the BS Entrepreneurship program. The data reveal that all startups chose a partnership as their legal structure (100%), reflecting that students are a shared ownership by combining their resources. Regarding the industry classification, the largest number of the start-ups were in Agriculture, Forestry, and Fishing (40%), then Manufacturing (27%), Food Services (20%), and Administrative/Support Services (13%). The firm had a variety of the product, but it can be easily seen that more than one-fourth of the total products were mushrooms and mushroom-derived products (27%) as well as snacks, baked goods, condiments, and service-based products like printing and copying. Most of the businesses were in Tuguegarao City (60%), while the rest were within the CSU campus (20%) and the neighboring municipalities (20%). According to their level of capitalization, we can say that most of the businesses were operated with ₱25,000–₱75,000, thus, they are low-capital microenterprises typical of student business incubations.

Table 1: Profile of student-implemented ventures *(n= 15)*

Profile Variable	Category	f	%
Form of Business	Partnership	15	100
Industry Sector	Agriculture	6	40
	Manufacturing	4	27
	Food Services	3	20
	Administrative/Support	2	13
Business Location	Tuguegarao City	9	60
	CSU Campus	3	20
	Nearby Municipalities	3	20
Capitalization (₱)	25,000–50,000	7	47
	51,000–75,000	4	27
	76,000–100,000	2	13
	>100,000	2	13
Common Products	Mushroom-based goods	4	27
	Snack foods	3	20
	Baked goods	3	20
	Others (prints, meat, condiments, services)	5	33

The profile of student-implemented ventures shows that students tend to choose enterprises, which require less start-up capital, have simple operational processes and use readily available raw materials. This is the reason why the agriculture sector specifically mushroom production was the most represented industry, as it is related to CSU's training program in mushroom cultivation. The partnership structure also reveals students' ambitions to be in a cooperative setting where the financial risk, the workload, and the operational responsibilities are shared among the members of the group. The dominance of ventures operating within Tuguegarao City could be attributed to its strategic value being a commercial center thus being easily accessible to customers, having constraint consumer traffic and also good infrastructure. This translates to regular sales and facilitates the logistical operations for the business ventures.

These findings support previous the studies stating that less experienced entrepreneurs usually adopt low-risk, resource-based sectors when starting small-enterprises (Hallak &Lee, 2023). The leaning towards establishing partnerships also reflects worldwide trends in student entrepreneurship, where shared ownership lessens the perception of risks and the burden of capital (Shenkoya et al., 2023). The rise of agriculture and food-based ventures aligns with researches on developing countries that reveal

students entering traditional, necessity-driven markets due to limited access to advanced technologies and financial capital (Mizik et al., 2021). However, it deviates from trends generated from studies emanating from advanced economies where student ventures increasingly choose digitally mediated enterprises and tech-enabled solutions. These imply a contextual difference that is influenced by the availability of institutional training and local economic structures.

Profitability of Student-Run Ventures

Table 2 shows the profitability of the 15 student-initiated businesses as measured by the standard financial indicators of profitability. The findings show that an average (ROI) Return of Investment of 46.01%, some of the ventures returned more than their initial capital investment. The average Gross Profit Margin that is 45.26% implies that there were high mark ups and good cost-efficiency in the businesses that had low overhead expenses. These were especially observed in ventures producing food and agricultural products. The mean Net Profit Margin (NPM) of 16.53% is a signal of moderate profits after the accounts of operational expenses have been made. At the same time, the Return on Assets (ROA) was on average 22.43%, a fact that most of the enterprises were able to use their assets effectively to generate earnings. Some of these ventures, however, had negative ROI, NPM, and ROA that have been attributed to factors such as fluctuating demand, high operating costs, or inefficient cost management, even though there were generally favorable outcomes.

Table 2: Profitability indicators of student ventures *(N= 15)*

Indicator	Minimum	Maximum	Mean
Return on Investment (ROI)	-12%	299.24%	46.08%
Gross Profit Margin (GPM)	-0.27%	100%	45.26%
Net Profit Margin (NPM)	-18%	77%	16.53%
Return on Assets (ROA)	-13%	95.95%	22.43%

The data reveal that student entrepreneurs have, in most cases, been capable of transforming academic knowledge into business ventures that yield a profit. Quite a few of the businesses have recorded high ROI values which is a sign of the efficient use of capital, especially among those in the sectors of agriculture and food industries where raw materials are cheap, and demand is stable. High GPM figures reflect the tight control of production expenses which is a must for businesses that rely on manual processes and low-cost inputs. Businesses that have made lower or negative profits may have faced inefficiencies in their operations, misforecasted demand, weak marketing strategies, or insufficient pricing structures. The differences here point to the varying levels of the entrepreneurial skills of the students that have been applied, which is a reflection of their decision-making, cost-management, and strategic-planning skills.

The profitability figures here are consistent with the findings of Saptono (2018), who argued that practical entrepreneurial experiences have a major positive impact on students' financial literacy and general management skills. The relatively high ROI and NPM figures are in line with worldwide patterns showing that small and flexible enterprises in the food and agricultural sectors can rapidly become profitable (Endris & Kassegn, 2023). On the other hand, the negative financial outcomes of some ventures are consistent with research that points to the same set of problems that keep young entrepreneurs down, especially in pricing, budgeting, and operational planning (Foster, 2017). These findings underscore the necessity of systematically embedding topics such as financial modeling, setting up cost control systems, and conducting market analysis within the entrepreneurship curriculum so as to be able to decrease the occurrence of operational losses in the early stages of ventures.

Cross-Tabulation of Industry Sector and Profitability

Table 3 displays the cross-tabulation between the major industry sectors and their respective profitability indicators (mean ROI, GPM, NPM, and ROA). The first layer of the table shows that financial performance has changed significantly in different sectors. Farming-related enterprises, therefore, have the highest mean return on investment (82.14%) and gross profit margin (56.33%), respectively. On the other hand, the manufacturing segment illustrated moderate profitability, especially in NPM, which reached 18.5%, whereas food services obtained the lowest ROI (12.83%) and NPM (9.06%). The sector of administrative and support services, however, had relatively mixed performance, with the company achieving a moderate return on investment (33.72%) but a rather low return on assets (14.11%).

Table 3. Cross-tabulation of industry sector and profitability indicators

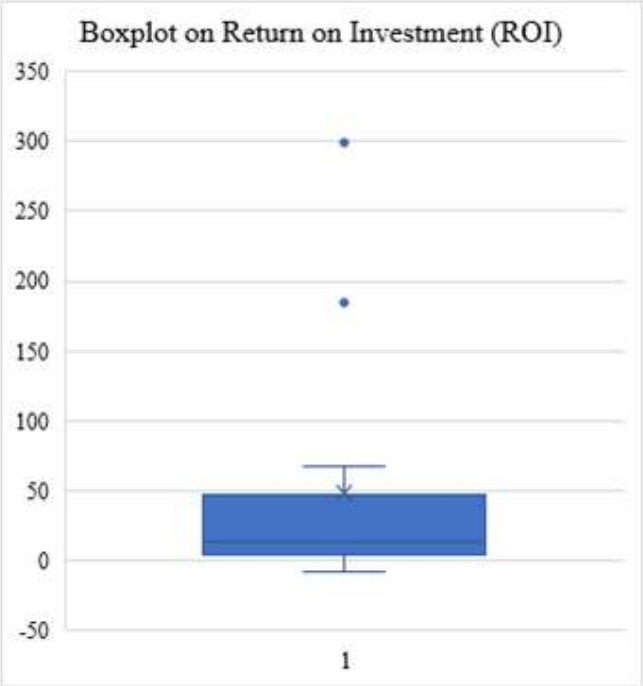
Industry Sector	Mean ROI (%)	Mean GPM (%)	Mean NPM (%)	Mean ROA (%)
Agriculture	82.14	56.33	22.17	34.92
Manufacturing	38.60	47.18	18.50	26.44
Food Services	12.83	32.57	9.06	11.28
Administrative/Support Services	33.72	41.33	16.42	14.11

The findings indicate that the agribusinesses had been outperforming most of other sectors in terms of profit-making capacity over time. The high ROI and GPM in agriculture reflect that these business activities seem to gain from cheap raw materials, easy production processes and strong market acceptance, in particular mushroom-based products which were the leading commodity in this category. Projects in the manufacturing sector especially those that produce condiments and processed foods were also on the profitable side, hence the indication of cost control and stable demand. As a matter of fact, the food services ventures were the major contributors to the lowest profitability because they have high overhead expenses, are exposed to perishability of goods, and are more vulnerable to fluctuating demand. Also, administrative/support ventures have shown average performances, presumably as a result of being service-based with fewer production costs.

These insights are consistent with the worldwide research, which shows the same trend for agriculture-related microenterprises that usually generate higher margins due to low variable costs and steady consumer demand (OECD, 2021). Profit concentration in the agriculture sector was also found to be similar in Philippine MSMEs, where processed agricultural products had a significant GPM performance (DTI, 2023). On the other hand, the profitability of food service ventures is relatively low, which confirms the research that has been done previously, showing that start-up food businesses will be the ones to challenge issues related to perishability, high input prices, and competitive saturation (Ratten, 2021; Miço, 2023). Thus, the results bridge with the existing literature while contradicting the studies, which consider food services as the most common and profitable entry-level venture for student-entrepreneurs, implying that local contextual factors have a substantial impact on financial outcomes.

Profitability Distribution of Student Ventures

Figure 1 shows the distribution of Return on Investment (ROI) values to more accurately present the variation in financial performance of the 15 student-initiated ventures. The boxplot distribution shows that the majority of the businesses fall with the profitable range (0-80%). A few were able to achieve extra-ordinary high returns (>150%), while there were some who have also recorded losses. The figure helps to highlight the variance in student financial management skills and their application of entrepreneurial competencies.



The histogram presents a positively skewed distribution demonstrating that majority of the students were able to generate moderate levels of profitability as characterized by an ROI that is largely concentrated between 20% and 80%. There were some ventures did exceptionally well and made a return above 150% that might have been due to factors such as unique market demand, operational efficiency or effective cost control. On the other hand, ventures who experienced a negative ROI represent situations where students have difficulty in generating sales, pricing and managing expenses. Such a wide range of variation in the entrepreneurial skills, decision-making, and adaptability of the students is very evident here.

This trend is consistent with the findings in Nabi et al. (2017) paper which suggests that experiential programs in entrepreneurship lead to heterogeneous performance outcomes because of financial skills, opportunity recognition, and risk management of students. The long-tailed distribution whereby there are only a few ventures that generate disproportionately high returns is in line with studies on microenterprises which show that they usually follow a Pareto-like performance pattern wherein a few capture most of the gains (OECD, 2021). The existence of several low-performing or negative-ROI ventures is also in line with the DTI (2021) reports that novice entrepreneurs are more likely to have difficulties in pricing, demand forecasting, and cost tracking. In total, the distribution strongly supports the argument that competency gaps and decision inconsistencies largely determine the performance of ventures initiated by student-entrepreneurs.

CONCLUSIONS

The findings of the current study reveal that the entrepreneurial students through experiential entrepreneurial training were able to successfully start microenterprises. The profitability of these ventures though varies depending on the sector. Those ventures which are based on agriculture have been going beyond others all the time because of almost free natural resources and high acceptance of the products in the market, whereas food service and administrative-based activities for causes of profitability have been demonstrated limited due to higher overhead expenses and operational vulnerabilities. The variation of ROI values so extensively, as well as the presence of both top-performing and low-performing ventures, indicate that financial literacy, pricing strategies, cost management, and overall entrepreneurial decision-making of students were inconsistent. Though the

practicum through the business plan implementation course was an effective applied learning medium, the results show that barriers to the venture, especially financial constraints, demand fluctuations, and operational inefficiencies, are still the main reasons for business performance not reaching the maximum level. These findings, taken together, not only confirm the significance of real-world business execution but also, signal the necessity of systematic skill reinforcement and institutional support to get students ready for sustainable post-graduation entrepreneurship.

RECOMMENDATIONS

As a result of the findings, formally, the BS Entrepreneurship curriculum is advised to reload the financial management and market analysis areas with the advanced topics pricing strategies, budgeting systems, demand forecasting, and cost optimization. Students will likely experience fewer barriers in their ventures and the sustainability of their business will be enhanced by a stronger university-based incubation system with more dedicated mentoring, capital support mechanisms, and easier access to market linkage programs. Specific training to the food service and administration sectors should be given to the staff to equip them with the skills to manage the operational challenges that have been manifested in the poorly performing ventures. In addition to this, structured post-implementation reviews will give students the opportunity to look back at the performance gaps and hence enhance their strategic decision-making skills. Such measures may lead to the creation of higher-quality ventures, less exposure to operational risks, and graduates who are better prepared for long-term entrepreneurial success.

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