INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH
2024, Vol. 5, No. 12, 5051 – 5066
http://dx.doi.org/10.11594/ijmaber.05.12.11

Research Article

Entrepreneurial Intent of Filipino Undergraduate Health Sciences Students: A Descriptive Cross-Sectional Study

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Article history:
Submission 28 October 2024
Revised 07 December 2024
Accepted 23 December 2024

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ABSTRACT

This quantitative study, grounded in Ajzen's (1991) Theory of Planned Behavior (TPB), investigates the entrepreneurial intentions of Filipino undergraduate health sciences students using a descriptive cross-sectional research design. The study involved 820 respondents from various health sciences programs in North Luzon, Philippines, who completed an online survey. Demographic characteristics and entrepreneurial intent were assessed through a researcher-designed Demographic Profile Questionnaire (DPQ) and the Individual Entrepreneurial Intent Scale (IEIS) established by Thompson (2009). This study adopts a positivist view, emphasizing objectivity, consistency, and replicability through statistical methods. The findings reveal that the undergraduate health sciences students demonstrate a "good" level of entrepreneurial intentions, with a notable significant variation observed between those who have taken business-related courses and those who have not, with the former exhibiting higher intent. Other factors, such as age, gender, and marital status, did not show significant differences in entrepreneurial intentions, suggesting that educational experiences play a more critical role than personal characteristics. The study recommends educational strategies and policies, such as curricular enhancement towards entrepreneurial education in health sciences education, to foster innovation and encourage healthcare entrepreneurship. Overall, this research contributes to the expanding literature on entrepreneurship; however, like other studies, it has limitations. Therefore, future research directions are offered.

Keywords: *Entrepreneurial intention, Health sciences programs, Business-related education, Healthcare entrepreneurship*

How to cite:
Angeles, R. G. (2024). Entrepreneurial Intent of Filipino Undergraduate Health Sciences Students: A Descriptive Cross-Sectional Study. *International Journal of Multidisciplinary: Applied Business and Education Research*. *5*(12), 5051 – 5066. doi: 10.11594/ijmaber.05.12.11

Introduction

In recent years, there has been a rising interest in students' entrepreneurial intent, especially in developing economies such as the Philippines. Entrepreneurship is how individuals identify and capitalize on new business opportunities, often by establishing new ventures (Davidsson & Wiklund, 2001; Shane & Venkataraman, 2000). For many, it is a vital career alternative, contributing to workforce stability, enhanced employment prospects, and driving social development and economic growth (Adeel et al., 2023; Gianiodis et al., 2019; Sesen, 2013). It is a career option, providing countless opportunities that the formal job market lacks. These factors foster entrepreneurial aspirations for many, even among students in fields traditionally associated with health sciences, such as nursing, pharmacy, psychology, and public health. For Filipino health sciences students who are prospective graduates and future healthcare professionals, engaging in entrepreneurial initiatives is especially relevant, as they are positioned to address critical challenges within the country's healthcare system, which suffers from inadequate facilities, limited services, and a shortage of qualified personnel (Collado, 2019). Beyond being an alternative career path for prospective graduates, entrepreneurship fosters innovative strategies for navigating an ever-evolving and challenging landscape while uncovering new opportunities (Nobre, 2002). By identifying and pursuing innovative solutions, these students can contribute to improving healthcare delivery and fostering progress in a field essential for national development. Healthcare entrepreneurship is seen as crucial for advancing the state of healthcare, fostering economic enhancement, and promoting societal well-being (Lim et al., 2024; Shepherd & Patzelt, 2017; Asoh et al., 2005). Engaging in the entrepreneurial process encourages individuals to think creatively, adapt to changes, and develop new ideas, products, or services, driving progress in various fields, such as healthcare, beyond traditional business contexts.

Engagement in entrepreneurship encompasses various behaviors (entrepreneurial behaviors), such as active involvement and commitment individuals show towards starting and managing their own ventures or promoting positive change and addressing pressing healthcare challenges is best influenced by entrepreneurial intention (Romero-Galisteo et al., 2022; Thompson, 2009). Entrepreneurial intentions drive entrepreneurial behaviors (Bird, 1988). As further stressed by Bird (1988), it is a mental state that leads an individual to dedicate significant attention, energy, and time toward achieving a specific goal. Without intention, there would be no entrepreneurial action (Zhang & Huang, 2021) or entry (Fayolle & Liñán, 2014). Thus, examining the factors that promote entrepreneurial intention is undeniably critical.

While entrepreneurship is receiving more attention, limited research has been conducted on entrepreneurship within the healthcare sector (Salminem et al., 2014). Most studies conducted on entrepreneurial intention focus primarily on business students (Dotong & Manalang, 2023) and less on health sciences students (Romero-Galisteo, 2022), such as in the Philippines, resulting in a constrained understanding of the factors influencing entrepreneurial intentions in health-related fields (Liñán & Fayolle, 2015). It has been observed that entrepreneurial intention can be affected by various individual and demographic factors such as age, gender, marital status, or educational background (Bilgiseven & Kasımoğlu, 2019). However, few studies have investigated these factors within the Philippine setting, particularly in the context of health sciences education. This cross-sectional gap provides limited view on the phenomenon; hence, it is essential to gain additional insight for a finer analysis of the aforementioned factors among health sciences students, thus necessitating a cross-sectional approach. In addition, the study operates from a positivist perspective that aims to measure and assess the objective reality, the realities of health sciences students' entrepreneurial intentions. This approach is ideal for investigating the entrepreneurial intention of undergraduate health sciences students in the local context because it enables systematic data collection and analysis, which is essential in providing a straightforward, structured approach to research, reducing biases, and increasing the validity of the findings.

This research framed within the Theory of Planned Behavior (TPB) (Ajzen, 1991) presents a robust presentation of factors influencing entrepreneurial intent. According to the TPB, intentions are contingent on an individual's "attitudes," "subjective norms," and "perceived behavioral control," which makes it an appropriate basis for analyzing such a concept. When looking at these elements in relation to the demographic profiles, we provide critical information about the factors that trigger student entrepreneurial intentions in health sciences. For instance, in terms of age, young students are more likely to engage in entrepreneurship when presented with social media alternatives that align well with their generation, Generation Z, through a pro-entrepreneurial approach. Social media involvement greatly influences a decision to pursue entrepreneurial opportunities (Barrera-Verdugo & Villarroel-Villarroel, 2022). Furthermore, gender dynamics are also significant in the molding of entrepreneurial intention. It has been reported that the proportion of female-owned businesses is much smaller than males (Krieger et al., 2022; Ward et al., 2019; Phipps & Prieto, 2015) primarily because male students may be more likely to embark on entrepreneurial activities than their female counterparts who frequently battle against societal norms plagued by biased assessments of their abilities (Eagly & Carli, 2003).

In addition, subjective norms are even more critical, as they represent social pressures from family, peers, and cultural context. The unmarried students will likely face a different level of intentions compared to their peers who are married. Single students may be more able or willing to take risks and explore entrepreneurial activities than those dating or married. Due to the added responsibilities, married individuals focus more on job security than being self-employed (Kolvereid, 1996). Other cultural factors play a role; for instance, if students come from a traditional background, there is a greater inclination towards pursuing the standard, stable, and safer career paths. Additionally, educational exposure and socioeconomic background influenced perceived behavioral control. As the venture development process continues, students will likely be more confident in starting a new venture if they believe their available resources and networks can be valuable tools for entrepreneurial success, thus increasing their well-being (Marshall et al., 2020). In a nutshell, TPB explains entrepreneurial intent by highlighting three factors: attitudes, subjective norms, and perceived behavioral control. In healthcare education, students' attitudes toward entrepreneurship, the influence of peers and mentors, and their perceived ability to overcome barriers (such as financial or regulatory) can significantly affect their intent to engage in healthcare entrepreneurship. Understanding these factors can help design educational programs that foster entrepreneurial intent among health sciences students.

In light of the above, this study seeks to investigate the entrepreneurial intent of Filipino undergraduate students in health sciences by focusing on the central research question: *"What are the entrepreneurial intentions of Filipino undergraduate health sciences students, and how do these intentions vary by demographic profile?"* Given this, the study's objective is to quantitatively (1) assess the entrepreneurial intent of health sciences students and (2) explore how these intentions differ when grouped according to demographic profile variables. This study aims to provide valuable contributions to the literature on healthcare entrepreneurship by delineating health sciences students' distinctive backgrounds and intentions. Clear insight into the intentions of these students will serve to orientate academic institutional policies aimed at promoting and fostering entrepreneurship (Romero-Galisteo et al., 2022). The heads of academic institutions and policymakers can use this knowledge to align specific programs and resource networks with the level of support students need for entrepreneurship. These opportunities lead to success that, in turn, affects them and the wider community positively. Ultimately, these outcomes also pave the way for novel strategies for some of the most urgent problems in healthcare delivery in the country— empowering students with ways they can be agents and changemakers within the healthcare field and their respective communities.

Methods

Research Design

This study aimed to describe the entrepreneurial intentions of Filipino undergraduate students in health sciences programs using a descriptive cross-sectional research design. This design was suitable in light of the study's emphasis on measuring entrepreneurial intentions and demographic profiles at a specific time, i.e., snapshot data collection, which can be facilitated using the various processes embedded in this design. A descriptive cross-sectional study aims to capture and summarize the characteristics of a population under observation at one point in time (Wang & Cheng, 2020). This technique enabled the examination of demographic variables—age, gender, marital status, and their participation in business-related courses —and how these create differences in entrepreneurial intentions. This approach captured the range of data available within this group, streamlining an exhaustive analysis without following longitudinally.

Moreover, this study specifically investigated differences in entrepreneurial intentions among demographic backgrounds rather than examining relationships between variables. The initial phase was completed to determine the level of entrepreneurial intention. At the same time, the latter focus made it possible to examine more deeply the differences in entrepreneurial intent among students based on age, gender, marital status, and participation in business-related courses. Structured survey questionnaires were used, and substantial quantitative data was collected from the sample of health sciences students.

Using a descriptive cross-sectional research design, the present status of Filipino undergraduate health sciences students' entrepreneurial intentions and how they vary by demographic factors were determined, adding significant information to the entrepreneurship education literature.

Participants of the Study

The respondents in this study were students in health sciences programs such as nursing, midwifery, psychology, public health, and others at the tertiary level who are enrolled in various schools, colleges, and universities in the Northern part of Luzon. Inclusion criteria were set to obtain a relevant and representative sample. In order to participate, the respondents must have been in the health sciences program for two years already. This was required to ensure the students are halfway through the four-year programs wherein they already have adequate exposure and good progression in their curricular program. This study was voluntary, and students were informed of their right to discontinue their participation without repercussions, regardless of reasons. Respondents also were required to provide informed consent. Students who fulfilled these criteria were included in the study. In sample size determination, a statistical calculator indicated that a minimum of 385 respondents was needed to reach a 95% confidence level, allowing for a margin of error of ±5%. This calculation was based on a population proportion of 50%. In the end, the survey was conducted with 820 health sciences students participating and drawn through convenience sampling, given the web-based nature of survey distribution. This number substantially surpasses the minimum required sample size. A large sample size not only enhances the accuracy of the results but also increases the reliability of the findings, allowing for a robust analysis of entrepreneurial intentions among health sciences students surveyed in the locale.

Table 1. Demographic Profile of Filipino Undergraduate Health Sciences Students (n = 820)

Demographic Profile Variables	Distribution	
	f	%
Age, in years		
below 25	406	49.51
25 and above	414	50.49
Total	820	100.00

Demographic Profile Variables	Distribution	
	f	%
Gender		
female	411	50.12
male	409	49.88
Total	820	100.00
Marital status		
single	500	60.98
married	272	33.17
others	48	5.85
Total	820	100.00
Business-related subject/s taken		
no	512	62.44
yes	308	37.56
Total	820	100.00

Table 1 presents essential information regarding the demographic characteristics of Filipino undergraduate health sciences students. A slight majority, 414 students (50.49%), are aged 25 and above**,** while 406 students (49.51%) are below this age, indicating a diverse age range that may cause the difference in entrepreneurial intentions. The gender distribution is nearly equal, with 411 female students (50.12%) and 409 male students (49.88%)**,** suggesting balanced representation in the survey. In terms of marital status, a significant majority of 500 students (60.98%) are single, which may allow for greater flexibility in pursuing entrepreneurial activities compared to the 272 married students (33.17%) and 48 students (5.85%) in the "others" category, who do not fall into the first two groups (or categories). Additionally, 512 students (62.44%) reported not having taken any business-related subject/s (i.e., entrepreneurship) as part of their program curriculum, highlighting a potential gap in business education or exposure to business or entrepreneurship-related concepts that could hinder their entrepreneurial readiness. Overall, the findings indicate a diverse student sample based on their distribution in terms of age, gender, marital status, and participation in business-related courses.

Data Collection

The study was conducted in North Luzon, targeting college students enrolled in various health sciences programs, including nursing, midwifery, public health, psychology, and pharmacy, at schools, colleges, and universities in the region. The self-administered questionnaire was distributed through an online survey using Google Forms with the link shared on social media from January to March 2024. In web surveys such as this, respondents are typically self-selected, meaning they opt-in to participate based on their availability and willingness. One benefit of online surveys is that they tend to be practical and time-saving as they are convenient to use and can reach a wide audience (Dillman et al., 2014), although they can also impose challenges which were properly discussed in future research recommendations section.

The survey packet distributed included basic information about the study, a research snippet describing what this research endeavor was interested in studying, and an invitation to participate. The informed consent form was given to the respondents, who answered this document questionnaire after ensuring they fully grasped what was required or expected of them and their rights as respondents. The questionnaire was structured into two sections: Part 1—demographic details—and Part 2—entrepreneurial intent.

The researcher designed the Demographic Profile Questionnaire (DPQ) to obtain information about the respondent's age, gender, marital status, and whether they had taken any business-related course as one of their subjects in the program. The study also utilized the

Individual Entrepreneurial Intent Scale (IEIS) developed by Thompson (2009) to measure the entrepreneurial intention of respondents. The scale had excellent internal reliability based on Cronbach's alpha coefficient of .89. All items contributed to reliability with an average corrected item-total correlation of .70. Exploratory principal component analysis confirmed unidimensionality based on a single component identified bearing an acceptable eigenvalue, accounting for 63.90% of the variance. It has also been reported that the confirmatory factor analysis supported the scale's unidimensionality with good fit indices with values higher than .90, indicating a satisfactory model fit (Thompson, 2009). A thorough development and validation process has verified that the IEIS demonstrates internal reliability. Furthermore, over time, the scale demonstrated unidimensionality and consistency when studied within the same sample and across various populations. This enhances the scale's generalizability and supports its broader applicability (Thompson, 2009).

Respondents assessed how true each statement was for them using a six-point Likert-type scale, from 1 (very untrue) to 6 (very true). Sample items included statements such as *"I intend to set up a company in the future," "Are saving money to start a business,"* and *"I spend time learning about starting a firm."* This combination of demographic questions and the IEIS delivered an elaborate analysis of the entrepreneurial intentions of health sciences students in North Luzon. All responses were automatically saved to a Google Sheet, facilitating easy sorting and statistical analysis.

Data Analysis

The data analysis for this study on Filipino undergraduate health sciences students' entrepreneurial intent started with evaluating the data distribution's normality using the Lilliefors test. The results showed a significant departure from normality, with a test statistic of $D(820) = 0.12$ and a p-value of 0.000. As the p-value fell below the alpha level of 0.05, the null hypothesis was rejected, concluding that the data distribution was not normal. Key summary statistics comprised a mean of 3.81, a median of 3.67, and a sample standard deviation of 1.13. The analysis also indicated a skewness of 0.59, suggesting a positive skew in the distribution and kurtosis of -0.21, which implied potentially mesokurtic characteristics with tails similar to those of a normal distribution. Additionally, the effect size of 0.12 further confirmed the significant deviation of the sample from a normal distribution.

To achieve the study's objectives, descriptive statistics—including frequency distributions, percentages, means, standard deviations, medians, and interquartile ranges—were calculated, offering an overview of the demographic characteristics and entrepreneurial intent among students. The interpretation of entrepreneurial intention levels was categorized as follows: scores from 5.17 to 6.00 indicated an extremely high level, 4.33 to 5.16 signified a very high level, 3.51 to 4.32 represented a high level, 2.67 to 3.50 denoted a low level, 1.83 to 2.66 indicated a very low level, and scores from 1.00 to 1.82 were considered extremely low.

Given the non-normal distribution, non-parametric tests were employed during inferential analysis. The Mann-Whitney U-test served as the non-parametric alternative to the independent samples t-test, allowing for comparisons between two non-normally distributed groups (Sundjaja, 2022), while the Kruskal-Wallis test was employed for comparisons between more than two groups (Kruskal & Wallis, 1952), serving as the non-parametric counterpart to Analysis of Variance (ANOVA). All statistical analyses were performed using IBM® SPSS® (Statistical Program for Social Sciences) for Windows version 29.0, ensuring a thorough data assessment in alignment with the study's objectives.

Ethical Consideration

This study on the entrepreneurial intentions of Filipino undergraduate health sciences students prioritized ethical considerations that would protect the rights and well-being of the respondents based on strict adherence to The Declaration of Helsinki. Informed consent was obtained, indicating the respondents were notified of what would be measured in this study. Participation was entirely voluntary, and the respondents had the right to withdraw at any point in time. Data was anonymized and only

available after the publication of this study. The research carefully designed survey activities to mitigate any harm from survey involvement. The standards for conducting this research followed the appropriate guidelines outlined by international and local ethics regulation authorities. In addition, the research assistants were also given ethical training to ensure that they understand and adhere to ethical standards in research, contributing to the protection of both respondents and researchers and the credibility of the research. Respondents were also given a complete debriefing after the study to maintain transparency — which is crucial for building trust. These efforts were made to maintain ethical standards during the entire research process.

Results and Discussion

This part presents the results and discussion of the study on the entrepreneurial intentions of Filipino undergraduate health sciences students. The sub-section also reveals the levels of entrepreneurial intention and the difference in level of intent across demographic profiles. For the sake of clarity in this report, a 'course' refers to each individual subject within the academic program's curriculum, while the 'academic program' consists of several courses (or subjects) and activities that, once successfully completed, lead to the attainment of an undergraduate degree in health sciences.

Level of Entrepreneurial Intention

As shown in Table 2, the study's findings on Filipino undergraduate health sciences students' entrepreneurial intent offer converging evidence on the student's desire for potential entrepreneurship in the future. The weighted mean score of item 1, *"I intend to set up a company in the future,"* was 3.86 out of 6.00 (*SD* = ±.87, *mdn* = 4.00, IQR = 4.00), indicating the desire to establish their own businesses. Furthermore, 44.6% of students selected the two highest response options (5 and 6) to express their enthusiasm for entrepreneurship.

Table 2. Entrepreneurial Intent Level of Filipino Undergraduate Health Sciences Students (n = 820)

Scale	Response Options Distribution *f (%)*						x̄	*SD*	DI
Item	1	2	3	4	5	6	*(mdn)*	*(IQR)*	
Item 1	141 (17.2)	101 (12.3)	105 (12.8)	107 (13)	115 (14)	251 (30.6)	3.86 (4.00)	±.87 (4.00)	High
Item 4 (R)	107 (13)	127 (15.5)	140 (17.1)	117 (14.3)	122 (14.9)	207 (25.2)	3.78 (4.00)	±1.75 (4.00)	High
Item 6	104 (12.7)	153 (18.7)	106 (12.9)	117 (14.3)	121 (14.8)	219 (26.7)	3.80 (4.00)	±1.79 (4.00)	High
Item 7 (R)	130 (15.9)	119 (14.5)	116 (14.1)	97 (11.8)	121 (14.8)	237 (28.9)	3.82 (4.00)	±1.85 (4.00)	High
Item 9 (R)	110 (13.4)	130 (15.9)	115 (14)	127 (15.5)	122 (14.9)	216 (26.3)	3.82 (4.00)	±1.78 (4.00)	High
Item 10	145 (17.7)	104 (12.7)	104 (12.7)	129 (15.7)	112 (13.7)	226 (27.6)	3.78 (4.00)	±1.85 (4.00)	High
Overall Mean							3.81 (3.67)	±1.13 (1.33)	High

Note. Item numbers 2, 3, 5, and 8 in the survey are distracter items and were not included in the analysis; (R), a negative statement but reversed coded. In response distribution, the percentages might not always add up to exactly 100% because of rounding. x̄, mean; *SD*, standard deviation; *(mdn)*, median; *(IQR)*, interquartile range. Numerical scale: mean score range (interval measure or response option) = descriptive interpretation (DI)— 6: 5.17-6.00 (very true) = extremely high; 5: 4.33-5.16 (true) = very high; 4: 3.51-4.32 (average) = high; 3: 2.67-3.50 (slightly untrue) = low; 2: 1.83-2.66 (untrue) = very low; and 1: 1.00-1.82 (extremely low).

Following closely, statement 6, *"Are saving money to start a business,"* had a weighted mean of 3.80 (*SD* = ±1.79, *mdn* = 4.00, IQR = 4.00), suggesting that many students are preparing for future entrepreneurial ventures. This proactive approach is essential for entrepreneurial success. Moreover, item 10, "*Spend time learning about starting a firm,"* achieved a high mean score of 3.78 (*SD* = ±1.85, *mdn* = 4.00, IQR = 4.00), reflecting a good attitude and inspiration to gaining the necessary knowledge, which is linked to overall entrepreneurial intention (Souitaris et al., 2007).

Item 9, *"Have no plans to launch my own business* (R)*,"* attained a mean score of 3.82 (*SD* = ±1.78, *mdn* = 4.00, IQR = 4.00). This reversed coded statement implies that a substantial number of students actually have plans to start their own businesses, reinforcing their entrepreneurial intentions. In addition, this also suggests that the respondents demonstrate a positive entrepreneurial mindset while emphasizing the need for targeted training to support those still uncertain about their plans (Dalimunthe, 2019).

Item 4, which pertains to the pursuit of business start-up opportunities, *"Never search for business start-up opportunities* (R)*,"* yielded a mean score of 3.78 (*SD* = ±1.75, *mdn* = 4.00, IQR = 4.00) after reverse scoring. This implies that while many students seek opportunities, a notable proportion still falls into lower response categories, suggesting a need for further development of entrepreneurial alertness and efficacy through entrepreneurship training programs (Ho et al., 2018). Lastly, the reversed coded statement 7, *"Do not read books on how to set up a firm* (R)*,"* produced a mean score of 3.82 (*SD* = ±1.85, *mdn* = 4.00, IQR = 4.00), pointing out that students are actively engaging with educational resources related to entrepreneurship. Furthermore, evidence shows that entrepreneurship education influences students' intentions (Fayolle & Gailly, 2015).

The overall mean of 3.81 out of a maximum mean score of 6.00 (*SD* = ±1.13, *mdn* = 3.67, IQR = 1.33) denotes that these students display a "good" level of entrepreneurial intent. The IQR also shows variability, indicating that educational sectors would have to strengthen specific initiatives where entrepreneurial involvement could be increased by providing more excellent experience, exposure, training, or mentorship. The hands-on nature of these programs is a very engaging way for students to gain entrepreneurial skills and will make them more likely to develop a legitimate purpose in pursuing their visions for entrepreneurship (Haneberg & Aaboen, 2020).

Variations in Entrepreneurial Intentions Levels Based on Demographic Characteristics

Table 3 presents the results of the Mann–Whitney U and Kruskal-Wallis tests to determine whether the demographic profiles of Filipino undergraduate health sciences students create significant differences in their levels of entrepreneurial intent. The analysis includes age, gender, marital status, and whether or not they have taken a business-related course.

Table 3. Differences in Entrepreneurial Intent of Filipino Undergraduate Health Sciences Students When Grouped According to Demographic Profile (n = 820)

Profile Variables	Categories	*N*	Mann-Whitney U Test			Asymp. Sig. (2-tailed), *p*
			Mean Rank	Sum of Rank	*U*	
Age	below 25	406	401.30	162927.00	80306.00	.269, *ns*
	25 and above	414	419.52	173683.00		
	Total	820				
Gender	female	411	413.15	169803.00	82962.00	.748, *ns*
	Male	409	407.84	166807.00		
	Total	820				
Business-rel. course (taken)	no	512	351.36	144761.00	59683.00	<.001***
	yes	308	470.22	191849.00		
	Total	820				

			Kruskal-Wallis Test			
			Mean Rank	x^2, H	*df*	
Marital status	single	500	399.06	1.87	2	.392, *ns*
	married	272	425.82			
	others	48	407.14			
	Total	820				

Note. Significant at *$p \leq 0.05$, **$p \leq 0.01$, ***$p \leq 0.001$ level; *ns* = not significant.

The age distribution shows that most students (*n* = 414, 50.49%) are aged 25 and above, closely followed by those below 25 years (*n* = 406, 49.51%). This indicates a diverse age range within the student body, which may contribute to varying perspectives and experiences related to entrepreneurial intent; however, the analysis of age revealed no significant differences in entrepreneurial intent between students below 25 years (mean rank = 401.30) and those aged 25 years and above (mean rank = 419.52). The Mann-Whitney U test yielded a *U* value of 80306.00 and a *p*-value of .269, leading to the acceptance of the null hypothesis. This indicates that age did not cause a significant difference in entrepreneurial intent among the students, which aligns with the findings of the study by Khanal and Prajapati (2023).

Similarly, in terms of gender, the distribution is nearly equal, with 50.12% (*n* = 411) identifying as female and 49.88% (*n* = 409) as male. This balance suggests that both genders are equally represented in the study. However, the analysis of gender also showed no significant differences in their level of entrepreneurial intentions; male students (mean rank = 407.84) and female students (mean rank = 413.15) exhibited comparable levels of entrepreneurial intent, with a *U* value of 82962.00 and a *p*-value of .748. This finding supports the confirmation of the null hypothesis. While this study suggests that gender does not play a substantial role in shaping entrepreneurial intent within this group, the study by Barrera-Verdugo et al. (2023) indicates otherwise, showing that gender does influence entrepreneurial intent and that being female specifically, along with higher family income, negatively impacts the intention to start a business.

On the other hand, the marital status data highlights that a significant majority of the respondents, 60.98% (*n* = 500), are single, while 33.17% (*n* = 272) are married, and 5.85% (*n* = 48) fall into the "others" category. The Kruskal-Wallis test evaluated differences in entrepreneurial intent based on marital status. Similarly, the results indicated a non-significant difference, H(2) = 1.87, *p* = .392 among the categories of marital status (single, mean rank = 399.06; married, mean rank = 425.82; and others, mean rank = 407.14). The study, therefore, did not reject the null hypothesis, concluding that there is no difference in the level of entrepreneurial intention among single, married, and “others” groups. This finding aligns with Khanal and Prajapati (2023), who emphasize that marital status, age, prior work experience, and exposure to entrepreneurship courses practically do not impact the entrepreneurial intentions of college students in Nepal's business programs. In contrast, Uike (2019) asserts that entrepreneurial intention is influenced by various factors, particularly marital status among individuals.

Finally, when examining whether business-related subjects were taken, a substantial majority of 62.44% (*n* = 512) reported that they had not taken any business-related courses, while 37.56% (*n* = 308) indicated they had. This finding suggests a potential business education or training gap among these students, which could impact their entrepreneurial intentions and readiness. Based on the Mann-Whitney U test results, taking business-related courses as elective courses in the health sciences curriculum significantly changed the students' entrepreneurial intent. Students who took a business-related course (mean rank = 470.22) showed more significant levels of entrepreneurial intent than those who did not (mean rank = 351.36), with a *U* value of 59683.00 and a *p*-value less than .001. This result prompts rejecting the null hypothesis,

indicating that exposure to business courses leads to higher entrepreneurial intent among health sciences students. Studying a business-related course provides health sciences students with additional preparation in financial management, marketing, and strategic planning, all essential for successfully starting and managing a venture. This foundational knowledge enhances students' understanding of the entrepreneurial landscape, effectively enabling them to tackle challenges and seize opportunities in their future entrepreneurial endeavors. Therefore, entrepreneurship education is instrumental in promoting entrepreneurial intention. This aligns with findings from earlier studies conducted that demonstrated a positive relationship between education and the entrepreneurial intention of college students (Zhang et al., 2022; Nabi et al., 2018; Wang & Li, 2012).

Overall, the study examined the entrepreneurial intentions of Filipino undergraduate health sciences students, revealing a high level of intentions among them, with a composite mean score of 3.81. This indicates their strong desire to engage in entrepreneurial activities, aligning with previous research emphasizing entrepreneurship education's positive influence (Fayolle & Gailly, 2015). Notably, 30.6% of students intend to establish their own ventures, demonstrating a proactive entrepreneurial mindset. Additionally, the significant percentage of students actively saving to start a business and those who dedicate time to learning about entrepreneurship underscore the potential for fostering innovative solutions within the healthcare sector. However, the lack of business education or preparation—evident from the 62.44% of students who had not taken any business-related courses as part of their curricular program—poses a significant barrier to their readiness for entrepreneurship. These findings stress that exposure to business concepts is essential for enhancing entrepreneurial intent, as students who completed business courses showed higher levels of intent. Business education and entrepreneurial courses play a crucial role in boosting entrepreneurial intention by providing students with essential knowledge and skills, such as financial literacy, market analysis, and business planning. These courses also help develop an innovative mindset and problem-solving skills, enabling students to identify opportunities and boost their confidence in entrepreneurship initiatives. Given this, it is essential to recognize that entrepreneurship cannot be fostered without the proper environment and preparation (influenced mainly by educational institutions), mentorship programs, and practical experience. However, the instructional delivery still relies on traditional methods, and the incorporation of entrepreneurship is not a priority (Salminen et al., 2014). Hence, the current entrepreneurial teaching in health sciences education is limited, requiring adequate educational planning (Suryavanshi et al., 2020). Educational institutions must enhance their programs by implementing a responsive curriculum where entrepreneurship education is integrated and where required courses, elective options, and hands-on experiences are included (Zhang et al., 2022). The non-exposure to business concepts may become a huddle at the beginning of entrepreneurship, which can blow up later. Achieving success in entrepreneurial ventures is fundamentally challenging (Hartmann et al., 2022). This emphasizes the need for entrepreneurship training to be incorporated into the health sciences curricula so entrepreneurs can navigate different forms of adversity when encountering setbacks.

Interestingly, although the overall analysis revealed no significant differences in entrepreneurial intentions based on marital status, married students demonstrated higher entrepreneurial intent scores. This could be attributed to their expanding life experience, stability, and desire to achieve financial independence for their families. This motivates them to consider entrepreneurial ventures a viable source of income and financial security. The predominance of single students in the sample may reflect a greater availability of time and resources to pursue entrepreneurial activities, as they may have fewer familial responsibilities and commitments than their married counterparts. However, they might need more motivation than family responsibilities, so while their freedom allows for experimentation in entrepreneurship, the absence of external pressures could result in lower immediate intentions for

starting a business. In addition, marital relations among married individuals have been documented as a motivation for entrepreneurship because of spousal involvement and support (Kurniawan & Sanjaya, 2016). In contrast, if someone is unmarried or single, they may be predisposed to social isolation, which can significantly impact their entrepreneurial journey. Being so isolated will likely lead to loneliness, decreased creativity, and lack of support, which does not bode well for their intentionality toward entrepreneurship, passion, and outcomes (Zhu et al., 2023).

Moreover, while the outcomes revealed no significant age differences in entrepreneurial intentions per se, students over 25 exhibited more outstanding entrepreneurship-related interests than their younger peers. This might be attributed to increased maturity, life experience, and a clearer understanding of the market and business landscape. Older students are typically more experienced in high-pressure environments and extensive networking, so they are usually more open to starting their entrepreneurial initiatives. Their primary drive may be to gain more career autonomy and become financially secure, especially as they consider future family responsibilities.

Gender as a demographic variable did not cause significant variations in Filipino undergraduate health sciences students' entrepreneurial intentions. The distribution of men and women in the sample is almost even, indicating a social climate where all individuals have equal opportunity to engage in entrepreneurial activities. Men tend to have higher levels of entrepreneurial intent than women (Krieger et al., 2022; Ward et al., 2019; Phipps & Prieto, 2015), but this study communicates a more level field. This suggests that more women are starting their own businesses now than ever (Ward et al., 2019), reducing the gender gap in entrepreneurial intentions.

Finally, the demographic factors considered — age, gender, and marital status— showed no significant disparities in terms of entrepreneurial intention. Such a finding implies that what is typically considered as drivers for individuals to engage in entrepreneurship may not be the case for this specific subpopulation of students in the country. However, there were substantial differences in levels of intent between students who had taken business-related courses and those who had not. The study results show that these students have entrepreneurial intent overall but are under-prepared in critical areas of entrepreneurship, primarily the business side.

The study provides substantial findings regarding Filipino undergraduate health sciences students and could be a solid contribution to the literature, particularly in the country because entrepreneurship has become more common as an employment alternative; however, the research is limited in some aspects, and this limitations are acknowledged for improvement in the future. This study was confined to health sciences students in North Luzon; therefore, the generalizability of these findings cannot be applied universally. While it is true that online surveys are practical, convenient to use, and can reach a broad audience, they can also introduce biases, as they may overrepresent certain groups (e.g., individuals with internet access or specific interests) and underrepresent others, limiting the generalizability of the findings.

Moreover, using self-reported data (question-based responses) may lead to a trap of social desirability bias, and students might overreport their entrepreneurial intentions. Also, the cross-sectional design represents a single snapshot in time, which does not allow for investigating changes or progress in entrepreneurial intentions throughout students' education and career journeys. Lastly, cross-sectional studies can identify correlations but need to establish causality, making it difficult to determine cause-and-effect relationships.

Additionally, future research could further explore the impact of integrating business education into health sciences programs on long-term outcomes. Longitudinal research could provide further evidence of how students' intentions to be entrepreneurs are formed and transformed into actual entrepreneurial actions after graduation, tracking changes over time and allowing for the observation of cause-and-effect relationships. Moreover, future research might pinpoint some unique challenges

students must overcome in healthcare entrepreneurship, leading to better-targeted educational programs for tomorrow's healthcare innovators. Likewise, a closer examination is suggested of the effect of teaching solutions (such as experiential learning and mentorship) to stimulate entrepreneurial skills, which would deliver valuable insights for both academicians and policymakers. Future research should also consider other possible influences on entrepreneurial intentions, such as personal traits (i.e., self-efficacy, risk-taking behavior), socioeconomic, family, and cultural backgrounds, and prior entrepreneurial exposure, to holistically understand the determinants for health sciences students who intend to become entrepreneurs. Regression or path analysis could be used to model causal relationships between entrepreneurial intention and such variables. Additionally, future researchers could employ random sampling to enhance the sample's representativeness, reduce selection bias, and increase the generalizability of the findings to a broader population. This approach would allow for a more accurate assessment of the relationships between variables under study.

Similarly, using mixed-methods approaches, which combine quantitative and qualitative techniques, would offer a deeper understanding of entrepreneurial intentions. In-depth qualitative research, such as interviews or focus groups, could explain why students choose entrepreneurship and their experiences. Also, to build the validity and clarity of the findings, further triangulation by collecting other data sources could have been helpful for a complete picture of factors affecting entrepreneurial intent among health sciences students.

Furthermore, the study can be replicated in more significant and diverse populations, including the different regions within the Philippines, for a robust national representation. Such a study could generate results that would generalize more widely, informing changes to nationwide curricula across health sciences programs. Considering regional variation, researchers could isolate contextual factors that drive entrepreneurial intentions and design appropriate educational interventions. Ultimately, this all-encompassing approach to future research directions could enrich entrepreneurship education in health sciences and help inspire the development of a new wave of problem-solvers for Philippine healthcare through entrepreneurship.

Conclusion

The results of this study yielded important information on the entrepreneurial intent of Filipino undergraduate health sciences students from North Luzon. The findings have implications for the paramount role of educational background, mainly focusing on business coursework completion/diversification in health sciences programs as a means to facilitate entrepreneurial intent among the students. This point is underscored by the significant disparity in intention levels among health sciences students who had and had not taken these classes. Results confirm that students who participated in business courses had significantly higher entrepreneurial intent, revealing that learning specific concepts of finance management, marketing, and planning has direct implications for enhancing their knowledge and navigating the entrepreneurial landscape successfully, given that entrepreneurial endeavors are inherently challenging. Not surprisingly, the analysis revealed no significant differences in entrepreneurial intents according to such demographic characteristics as age, gender, etc. Rather, it seems that entrepreneurial intentions have higher convergence with educational background and preparation.

Strikingly, educational institutions are encouraged to provide more business-related content in health sciences curricula to adequately prepare students for entrepreneurial endeavors. Beyond traditional business contexts and an alternative career path, entrepreneurship uncovers new opportunities. Engaging in the entrepreneurial process encourages individuals to think creatively, adapt to changes, develop new ideas, navigate pressing problems, and drive progress in various fields, such as healthcare. Through entrepreneurship, prospective health sciences graduates and soon-to-be healthcare professionals can contribute to improving healthcare delivery, a critical aspect of national development.

In sum, this study emphasizes that entrepreneurial preparation is not only specifically useful to those who seek an entrepreneurship degree. Institutions can further students' entrepreneurial intentions by creating supportive educational environments, irrespective of demographic characteristics (age, sex, marital status, etc.). Pumping business and entrepreneurial education into health sciences programs is paramount in sustaining the entrepreneurial intentions among health sciences students. Educational planning is essential for aligning curriculum, resources, and teaching strategies. Given the role of entrepreneurship in healthcare and the country's economy, the *Philippines*' Commission on Higher Education (CHED), through higher education institutions, should strengthen the health sciences curriculum with a practical business training component, provide mentorship programs and workshops for the development of the necessary entrepreneurial skillset and mindset. Collaborate with local businesses for more hands-on and practical exposure to real-world business challenges. The health sciences students may eventually use these experiences, insights, and knowledge learned to enter healthcare entrepreneurship and start their ventures.

Acknowledgment

The researcher is grateful to the respondents for their valuable input, to the research assistants for their dedicated work, and to the Graduate School of Business, San Beda University, for their support and valuable insights.

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