The Influence of AI Competence, Grit, and Prosocial Behavior on Collaboration Skills among Future Business Professionals in a Private University in Cebu, Philippines

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ABSTRACT

This study assessed the relationship between collaboration skills and artificial intelligence (AI) competence, grit, and prosocial behavior among Bachelor of Science in Business Administration students at a private university during the 2024–2025 academic year. It aimed to develop a career intervention plan to enhance students' AI competence, grit, prosocial behavior, and collaboration skills, thereby preparing them to meet evolving industry demands. A total of 150 third-year Marketing Management and Operations Management students at the University of San Jose-Recoletos completed survey questionnaires. AI competence was measured using the Artificial Intelligence Literacy Scale (AILS; Wang, 2022), grit with the Triarchic Model of Grit Scale (TMGS; Datu, 2017), collaboration skills via the Entry-Level Interprofessional Questionnaire (ELIQ; Pollard, 2004), and prosocial behavior using the Prosociality Scale (Kanacri, 2021). Data were analyzed using frequency count, percentage, weighted mean, and regression analysis. Most respondents were between 18 to 23 years old, lived with both parents, and had 1 to 3 siblings. Regarding birth order, the majority were youngest, while combined family monthly income varied, with the largest group earning above PHP 76,700. Respondents were predominantly female, reflecting a young, diverse, and family-oriented population with varying socio-economic backgrounds. Results indicated good overall collaboration skills, with interprofessional learning rated excellent; AI competence and grit were good, while adaptability and prosocial behavior were excellent. Regression analysis revealed that grit, prosocial behavior, and AI competence significantly predicted collaboration skills, with grit as the strongest predictor. Based on the findings and conclusion, a career intervention plan is proposed for adoption.

Keywords: Collaboration skills, Artificial Intelligence competence, Grit, Prosocial behavior

INTRODUCTION

In the contemporary academic and professional environment, collaboration is widely viewed as an important factor in realizing success, mainly for students who are preparing to enter competitive and client-oriented fields such as business and management. In the context of higher education, collaboration is not restricted to working with others in a group setting but involves the ability to participate actively, contribute responsibly, and coordinate effectively toward the accomplishment of shared goals. For future business professionals, especially those pursuing Marketing Management and Operations Management, collaboration plays a vital role in supporting efficient service delivery, meaningful customer relations, and effective problem solving. Henneman, Lee, and Cohen (2004) describe collaboration as a process founded on mutual respect, shared responsibility, and coordinated effort, which are indispensable attributes in modern business settings that underscore teamwork, digital communication, and changing consumer demands. The advancement of collaborative skills during the undergraduate years is then critical, as it prepares students for academic requirements such as internships and capstone projects and equips them for professional practice in the business sector. The capacity to collaborate does not progress independently but is shaped by a range of psychological, social, and cognitive factors. Among the most significant of these are artificial intelligence competence, grit, and prosocial behavior.

Artificial intelligence competence refers to an individual's level of knowledge, skills, and attitudes in using artificial intelligence tools and technologies effectively (Keskinen et al., 2022). In the context of business education and professional practice, artificial intelligence has become increasingly integrated into areas such as customer analytics, supply chain operations, and digital marketing. This integration emphasizes the need for business students to improve both foundational understanding and evaluative awareness when engaging with these technologies. Grit, which Duckworth and Quinn (2009) describe as sustained passion and perseverance in the pursuit of long-term goals, allows students to remain committed despite challenges associated with group work, delayed results, and complex business planning tasks. At the same time, prosocial behavior, defined as voluntary actions intended to benefit others including cooperation, helping, and sharing (Luengo Kanacri et al., 2021), contributes to the development of positive group relationships and supports ethical and productive collaboration. Collectively, these factors interact in ways that may strengthen or constrain a student's ability to collaborate effectively.

Globally, education systems and workforce development policies have recognized the importance of nurturing 21st-century skills, including collaboration, resilience, AI literacy, and social responsibility. For instance, countries like Singapore, South Korea, and Finland have incorporated AI-related subjects and socio-emotional learning into national curricula to equip future professionals with the necessary competencies to thrive in a digital and collaborative world. Frameworks such as PISA and OECD's Learning Compass likewise emphasize the integration of cognitive, interpersonal, and technological skills to meet the demands of the future economy.

In the Philippine context, the Commission on Higher Education (CHED) has initiated efforts to embed digital literacy, values formation, and collaborative learning across various disciplines. Despite the formulation of these policy directives, their implementation at the classroom level frequently remains inadequate, particularly in institutions constrained by limited resources or traditional instructional practices. Consequently, a considerable number of students continue to have limited exposure to practical applications of artificial intelligence, display inconsistent levels of motivation, and demonstrate low engagement in civic responsibilities and prosocial behaviors within both academic and community settings.

At the University of San Jose-Recoletos, informal observations of third-year BSBA students majoring in Marketing Management and Operations Management reveal patterns that merit further investigation. Several students show reluctance or discomfort in group activities, often preferring individual tasks or participating minimally in collaborative exercises. Others experience difficulty using digital tools, including artificial intelligence-based analytics and customer relationship management systems, which may hinder their readiness for the data-driven demands of modern business. While some students demonstrate perseverance and sustained motivation, others disengage when faced with challenges or rigorous academic requirements. Prosocial behaviors, such as peer mentoring, participation in community outreach, and equitable contribution to group assignments, are evident but generally limited to a small group of socially active students. These patterns indicate developmental gaps in critical competencies needed for future professional success, particularly in areas that require effective teamwork, client engagement, and technological proficiency.

In light of these observations, this study seeks to investigate the extent to which artificial intelligence competence, grit, and prosocial behavior serve as significant predictors of collaboration skills among third-year Bachelor of Science in Business Administration students majoring in Marketing Management and Operations Management at the University of San Jose- Recoletos, Cebu City, during the Academic Year 2024–2025. Specifically, the study aims to examine the relationships among these variables to provide a foundation for designing student-centered career interventions program. The anticipated outcome is to enhance students' collaboration skills by strengthening their competencies in artificial intelligence, promoting resilience, and fostering social responsibility. Ultimately, this research endeavors to prepare students for ethical, innovative, and client-oriented business practice. By addressing these critical competencies, the study contributes to the academic, personal, and professional development of future business leaders.

THEORETICAL BACKGROUND

The research is determined to identify the levels of collaboration skills, artificial intelligence (AI) competence, grit, and prosocial behavior. These variables are examined to generate insights that will support the development

of an evidence-based career guidance framework, which seeks to enhance students' academic, personal, and social outcomes.

Collaboration skills are grounded in Social Interdependence Theory by Johnson and Johnson (1989), which posits that the way social interdependence is structured determines how individuals interact within a group and that these interactions, in turn, influence outcomes. Positive interdependence, where group members perceive that they can reach their goals if and only if the others also reach theirs, promotes cooperation, shared responsibility, and mutual support. This framework highlights that successful collaboration is not simply about dividing tasks, but rather about synergizing ideas, resolving conflicts, and maintaining respect among members. For learners, especially in classroom and group project settings, this theory supports the design of activities that promote shared goals and cooperative learning, which are key to developing effective collaboration skills (Johnson & Johnson, 2009).

Additionally, Vygotsky's Sociocultural Theory (1978) emphasizes the role of social interaction in cognitive development. According to Vygotsky, learning is inherently a social process, and collaboration with peers or mentors allows students to reach the Zone of Proximal Development (ZPD), where they can achieve more with guidance than independently. The collaborative setting is a dynamic space where scaffolding occurs, and mutual engagement allows learners to co-construct meaning, solve problems, and internalize social norms. In the context of career guidance, this theory supports group guidance sessions and peer-led discussions as effective methods for developing communication and collaboration competencies necessary in future workplaces.

When examining Artificial Intelligence Competence, this study draws from the Technological Pedagogical Content Knowledge (TPACK) Framework by Mishra and Koehler (2006), which integrates technological, pedagogical, and content knowledge to enable effective technology integration in learning. AI competence requires not just the ability to use AI tools but an understanding of how to apply them meaningfully in various contexts. Within the TPACK model, AI becomes a tool to enhance problem-solving, creativity, and critical thinking, essential for future readiness. It also supports ethical awareness in using such tools, which is critical in today's digital learning environments. This theory supports the need for career guidance programs to include digital literacy components to prepare students for evolving workplace demands.

Moreover, the Computational Thinking Framework by Wing (2006) supports the inclusion of AI competence in modern education. Computational thinking involves problem-solving using abstraction, pattern recognition, algorithmic thinking, and automation—skills fundamental to understanding and working with AI. As students become future professionals, the ability to interact with AI systems becomes critical not only for technical fields but across disciplines. Developing computational thinking fosters adaptability, creativity, and logical reasoning, aligning with the demands of 21st-century careers. This theory justifies the integration of AI awareness and competence in guidance programs, ensuring students are not only digitally literate but also ethically and cognitively equipped to use AI for academic and career advancement.

The concept of grit is rooted in Duckworth's Grit Theory (Duckworth et al., 2007), which defines grit as perseverance and passion for long-term goals. Duckworth argues that grit is a stronger predictor of success than talent or intelligence, particularly in academic and personal pursuits. It entails the ability to maintain sustained effort despite challenges, failures, or plateaus in progress. In the context of education and career development, grit enables students to remain focused and committed, even when goals are distant or obstacles arise. This theory supports guidance counselors' role in fostering motivational strategies and resilience-building interventions for students.

Furthermore, Self-Determination Theory (SDT) by Deci and Ryan (1985) complements the concept of grit by emphasizing the importance of intrinsic motivation in sustaining goal-oriented behavior. SDT posits that competence, autonomy, and relatedness are core psychological needs that drive persistence. Grit, when nurtured in an autonomy-supportive environment, becomes a powerful predictor of long-term achievement. Career guidance programs can integrate SDT principles by helping students identify personally meaningful goals, enhance their sense of agency, and connect their aspirations to career pathways. This alignment ensures that perseverance is not forced, but internally driven and sustained by purpose.

Prosocial Behavior is best explained through Bandura's Social Learning Theory (1977), which asserts that individuals learn behaviors by observing, imitating, and modeling the actions of others. Prosocial behavior, such as helping, sharing, and showing empathy, is learned through social environments like family, school, and peer groups. In classrooms, the presence of role models—teachers or peers who display kindness and concern—encourages students to act similarly. This theory supports structured guidance activities such as peer mentoring, social skills training, and community service programs that build positive role modeling and reinforce prosocial norms.

Additionally, the Theory of Planned Behavior (Ajzen, 1991) contributes to understanding the intentional aspect of prosocial behavior. This theory posits that attitudes, subjective norms, and perceived behavioral control influence behavioral intentions and actions. When applied to education, it suggests that students who believe in the value of helping others and feel capable of doing so are more likely to engage in prosocial actions. For guidance counselors, this reinforces the importance of attitude formation and value-based education in career development programs, especially those promoting social responsibility and ethical conduct in the workplace.

This study is also legally anchored in Republic Act No. 9258, also known as the "Guidance and Counseling Act of 2004." The law defines the practice of guidance and counseling in the Philippines and mandates the promotion of the holistic development of individuals through psychological and career guidance services. Under this act, licensed guidance counselors are responsible for fostering students' personal, social, academic, and career growth. This legal basis strengthens the role of this research in informing guidance programs that respond to students' psychological attributes (grit, collaboration, prosocial behavior) and emerging technological competencies (AI competence). In addition, CHED Memorandum Order No. 09, Series of 2013 outlines policies, standards, and guidelines for Guidance and Counseling programs in higher education institutions.The memorandum emphasizes the integration of research-based, holistic, and developmental approaches in designing guidance services. It also highlights the role of counseling in shaping career paths and building 21st-century skills. This directive aligns with the current study's goal to use empirical findings to develop targeted interventions that address students' real needs and equip them for future educational and occupational settings.

Several recent studies have emphasized the importance of collaboration skills. A 2020 study by Zhao and Chen highlighted that group-based learning strategies significantly improve communication, critical thinking, and mutual understanding among high school students. Similarly, Ramirez et al. (2021) found that students who frequently engage in cooperative tasks demonstrate higher academic performance and enhanced interpersonal relationships. These findings confirm that collaboration is not only an academic skill but also a social competence essential for career adaptability and work-readiness. A study by Santiago and Perez (2022) in a Philippine context observed that senior high students showed low engagement in group activities due to lack of trust and coordination.

However, interventions such as peer-led facilitation and teacher-mediated feedback enhanced their collaboration effectiveness. The study calls for schools to design programs that develop teamwork and shared responsibility, aligning with this research's aim to integrate collaboration into career guidance efforts. Regarding AI competence, Lee et al. (2020) examined AI literacy among high school students and found significant gaps in understanding how AI operates and its implications. The study recommends embedding AI in core curricula to ensure students are not merely consumers but informed users. Likewise, Reyes and Florendo (2021) conducted a local study showing that students primarily use AI tools for superficial tasks like autocorrect and translation. The researchers suggest a more critical and guided approach to AI use to foster digital ethics and deeper engagement.

Moreover, Wang and Chen (2023) developed an AI-integrated learning module in Taiwan that improved students' problem-solving and computational thinking abilities. The results demonstrated that structured exposure to AI concepts can significantly improve learners' confidence and capability. This supports the study's intention to examine AI competence not only for tech proficiency but also for preparing students for AI-integrated workplaces. Two recent studies have contributed to the grit discourse. Fernandez and Lim (2020) analyzed the relationship between grit and academic resilience among Filipino adolescents. They found that students with higher grit scores were less likely to drop out or feel disengaged. Their study suggests that grit should be nurtured through long-term mentoring and value-based instruction. Another study by Banayo and

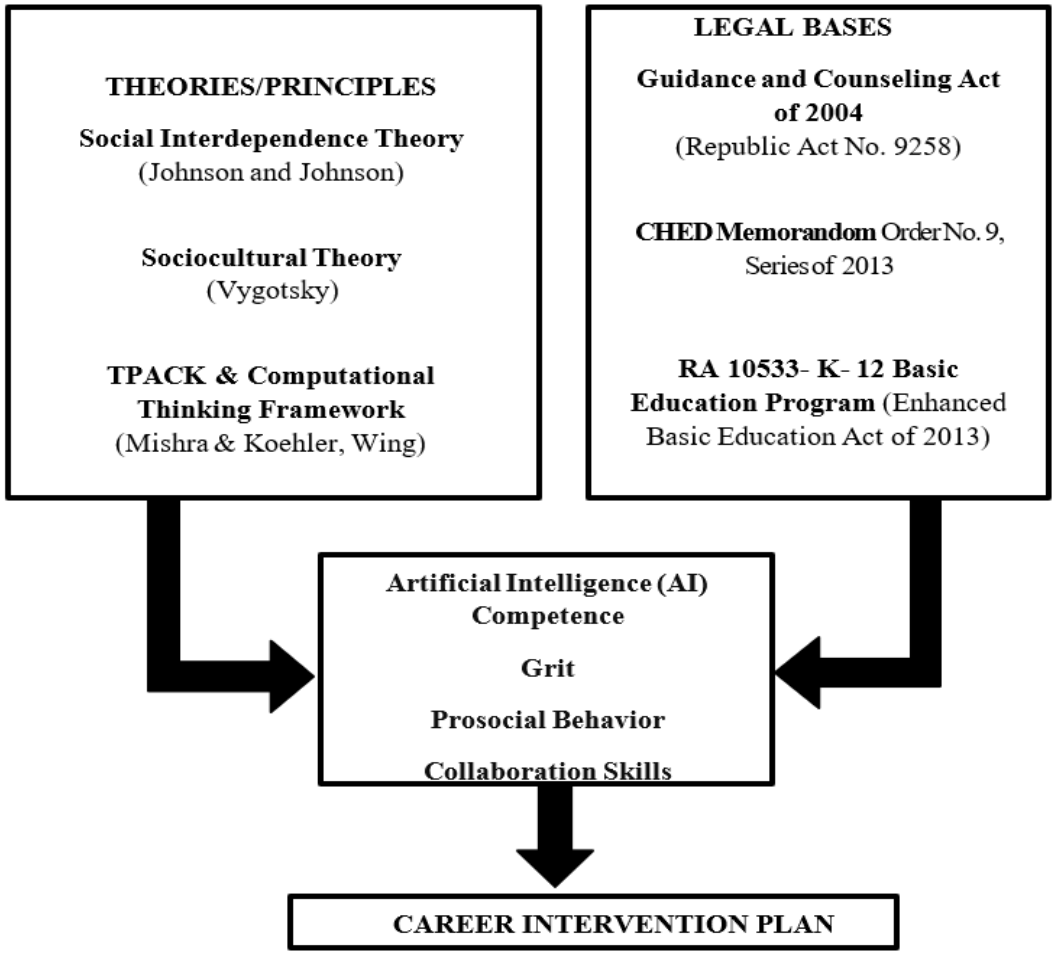
Tolentino (2021) showed that grit correlated positively with goal- setting behaviors and time management among senior high school students.

Similarly, a longitudinal study by Thompson et al. (2022) concluded that grit can be cultivated through structured challenges, feedback, and reflection. Students exposed to reflective journaling and motivational interviews reported greater persistence and clarity in pursuing long-term goals. This supports the study's premise that career guidance programs must embed goal clarity and reflective practices to cultivate grit among learners. For prosocial behavior, a 2020 study by Villanueva and Cruz found that students engaged in service-learning programs demonstrated increased empathy, civic responsibility, and cooperative behavior. These findings affirm the value of integrating real-life community engagement into the curriculum.

Furthermore, Reyes and Calub (2021) noted that values education alone does not automatically translate into prosocial actions. Their study revealed that consistent reinforcement, modeling, and community support are critical for promoting lasting behavioral change. A 2023 meta-analysis by Tan and Guevarra synthesized 15 studies and concluded that school climate, teacher behavior, and peer relationships are strong predictors of prosocial behavior. The study recommends school-wide initiatives that promote kindness, peer collaboration, and emotional literacy. These findings reinforce the importance of assessing and developing prosocial behavior as part of a career guidance framework that aims to prepare students not just academically but also socially and emotionally for future success.

In summary, collaboration skills proved essential for third-year BSBA students in Marketing Management and Operations Management, shaped not only by their AI competence and perseverance but also by their willingness to help and work with others. The study highlighted how these qualities influenced students' ability to contribute meaningfully in teams, adapt to technology, and solve problems together. These insights emphasized the need for a career guidance plan that nurtured both skills and character, preparing students to thrive in real-world, team-oriented, and technology-driven workplaces.

Figure 1. Theoretical/Conceptual Framework of the Study



Statement of the Problem

This research seeks to assess the impact of AI competence, grit, and prosocial behavior on the development of collaboration skills among third year BSBA major in Marketing Management and BSBA major in Operation Management students in University of San Jose-Recoletos for academic year 2024– 2025 as basis for a career guidance intervention plan.

Specifically, it will answer the following questions:

What is the profile of the respondents in terms of:

1.1.age and gender,

1.2.person whom they live with,

1.3.the number of siblings,

1.4.birth order, and

1.5.combined family income?

What is the level of artificial intelligence (AI) competence of the respondents in terms of:

2.1.awareness,

2.2.use,

2.3.evaluation, and

2.4.ethics?

What is the level of grit of the respondents in terms of:

3.1.perseverance of effort,

3.2.consistency of interests, and

3.3 adaptability to situations?

What is the level of prosocial behavior of the respondents in terms of:

4.1.action, and

4.2.feelings?

What is the level of collaboration skills of the respondents in terms of:

5.1.communication and teamwork,

5.2.interprofessional learning, and

5.3.interprofessional interaction?

Do AI competence, grit, and prosocial behavior of the respondents significantly predict their collaboration skills?

Based on the findings, what career guidance intervention plan can be crafted?

Statement of the Null Hypothesis

To achieve the objectives of the study, the following null hypotheses will be tested at 0.05 level of significance:

H_{01}: There is no significant relationship between collaboration skills and artificial intelligence competence among the respondents.

H_{02}: There is no significant relationship between collaboration skills and grit among the respondents.

H_{03}: There is no significant relationship between collaboration skills and prosocial behavior among the respondents.

Significance of the Study

The result of this study will provide significant information that will benefit the following:

Commission on Higher Education (CHED) Officials. This study will provide insights on interdisciplinary initiatives that bridge academic learning and employability. The integration of collaboration, grit, prosocial behavior, and AI competence into higher education curricula aligns with CHED's goals of producing globally competitive graduates equipped with 21st-century skills. Findings from this research can guide policy directions and strategic planning for the development of responsive, values-based educational programs.

University Administrators. The study aims to equip university administrators with evidence-based information on the behavioral, technological, and psychological competencies necessary for student development. The findings will help administrators support institutional programs that enhance students' holistic formation and ensure alignment with national development goals, especially in the context of digital transformation and global workforce readiness.

Guidance Counselors. Guidance counselors will benefit from this study by understanding how collaboration skills, AI competence, grit, and prosocial behavior interact and influence students' career decision-making, emotional well- being, and interpersonal skills. This research will serve as a foundational basis for developing more tailored guidance interventions, career counseling frameworks, and socio- emotional learning initiatives aimed at enhancing student outcomes.

Faculty. Faculty members will gain valuable insights into how non-cognitive skills and digital competencies affect student performance and interaction. This will inform teaching strategies that incorporate values formation, collaborative learning techniques, and ethical use of technology in the classroom, thereby fostering a more inclusive and forward-thinking educational environment.

Parents. This study will inform parents about the importance of nurturing collaboration, grit, digital responsibility, and prosocial behavior at home. By understanding these key attributes, parents can provide more meaningful support and encouragement, aligning their child-rearing practices with the demands of contemporary academic and career pathways.

Students. Students will gain awareness of the critical role that collaboration, AI competence, perseverance, and socially responsible behavior play in achieving academic success and long-term career goals. Through this awareness, students will be empowered to take ownership of their learning process and personal development.

Researcher. The researcher will use this study to contribute to the growing body of knowledge in educational psychology, guidance and counseling, and career development. This study will also provide a scholarly foundation for the formulation of a comprehensive guidance intervention program that addresses the current gaps in student development.

Future Researchers. The results of this study will serve as a reference for future researchers who will be conducting studies dealing with variables similar to this undertaking. It will help in the replication, validation,

or extension of the current research in other educational contexts, and contribute to the development of innovative frameworks that address emerging challenges in higher education and career readiness**.**

METHODOLOGY

Design

The study is quantitative that used descriptive and correlational methods. It determined the impact of AI competence, grit, and prosocial behavior on the development of collaboration skills among among third-year Bachelor of Science in Business Administration students at the University of San Jose- Recoletos for academic year 2024– 2025 as basis for a career guidance intervention plan. As posited by Taguchi (2018), Bloomfield & Fisher (2019), and Remler & Ryzin (2021), descriptive research provides an avenue for closer observation of facts and essential knowledge about people's experiences. In addition, the correlational research design examined relationships between variables without manipulating them (Ary et al., 2018; Seeram, 2019; Coe et al., 2021).

Flow of the Study

The first stage determined the input of the study, such as the profile, AI competence, grit, prosocial behavior, and collaboration skills among third-year Bachelor of Science in Business Administration students at the University of San Jose–Recoletos for the academic year 2024–2025. The second stage was the process of the study. It incorporated the following tasks: the researcher transmitted the necessary documentation before data gathering, including the letter allowing the conduct of the study and the respondents' consent form. Upon approval, the researcher began distributing the questionnaire to the respondents to ensure that all parts of the questionnaire were completed. The researcher then proceeded to tally, organize, summarize, interpret, and analyze the data results. Appropriate statistical tools were used in the treatment of data. The last stage was the formulation of the output of the study. A career guidance plan was proposed to address the needs of the respondents.

Environment

The present study was conducted at the University of San Jose–Recoletos (USJ-R) Main Campus, situated along Magallanes Street, Cebu City. This institution was founded by the Order of Augustinian Recollects in 1947. It was also known for its commitment to academic excellence, values formation, and community service. Additionally, the university was granted "Autonomous Status" by the Commission on Higher Education (CHED), a distinction awarded to universities that demonstrated exceptional performance in areas such as governance, research, and academic quality. The present research within this dynamic academic setting housed several schools and departments, making it an ideal environment for academic research and institutional assessment. This setting was specifically chosen due to its diverse population of students, faculty, and staff, as well as its accessible administrative support systems and available academic resources. Utilizing USJ-R as the study environment allowed the researcher to gather data that were both contextually relevant and institutionally grounded. Furthermore, the university's openness to innovation and continuous improvement made it a conducive setting for implementing research-based recommendations. By focusing on the Main Campus, the study ensured a concentrated yet representative scope that aligned with the research objectives while maintaining practical feasibility in terms of access, data collection, and application of results.

Respondents

The respondents for this research were the third-year BSBA major in Marketing Management and BSBA major in Operation Management students in University of San Jose-Recoletos for academic year 2024 – 2025, with a total of 150 respondents. These programs were selected to represent both human centered and technical disciplines, allowing for a broader understanding of how different skill sets interact in shaping effective collaboration. The findings of this study informed the creation of a career guidance intervention plan aimed at enhancing students' preparedness for professional roles that demand both interpersonal and technological competencies. The distribution of the respondents in this study is presented in Table 1.

Table 1 Distribution of the Respondents

BSBA Major in	N	%
Marketing Management	100	66.67
Operation Management	50	33.33
Total	**150**	**100.00**

Instrument Description

The researcher utilized a survey questionnaire to gather the information that helped achieve the aim of the study. The survey questionnaire consisted of the following:

Part 1. Profile of the Respondents.

The first part is designed to gather information on the profile of the respondents as to their age, gender, number of siblings, birth order, person whom they live together with.

Part 2. Artificial Intelligence Literacy Scale (AILS) (Wang et al., 2022)

The Artificial Intelligence Literacy Scale (AILS), developed by Wang et al. (2022), is a validated instrument designed to assess individuals' AI literacy across four key domains: awareness, use, evaluation, and ethics. Initially comprising 65 items, the scale underwent rigorous item reduction through exploratory and confirmatory factor analyses, resulting in a concise 12-item measure. Each domain demonstrated satisfactory internal consistency, with Cronbach's alpha values ranging from 0.73 to 0.78, and an overall scale reliability of 0.83. The AILS has been adapted into various languages, including Turkish and Greek, maintaining its four-factor structure and reliability across different cultural contexts. This scale serves as a practical tool for evaluating AI literacy in diverse populations, supporting educational initiatives and research in the field of AI education.

Part 3. Triarchic Model of Grit Scale (TMGS) (Datu, Yuen, and Chen, 2017)

The Triarchic Model of Grit Scale (TMGS) is a psychometric instrument developed by Datu, Yuen, and Chen (2017) to assess grit through three dimensions: perseverance of effort, consistency of interests, and adaptability to situations. This model expands upon the original two-factor grit framework by incorporating adaptability, which reflects an individual's capacity to adjust goals and strategies in response to changing circumstances—a trait particularly relevant in collectivist cultures like the Philippines. The TMGS was developed and validated using data from Filipino undergraduate students through a three-phase process involving exploratory factor analysis, confirmatory factor analysis, and cross- validation, demonstrating strong internal consistency and gender invariance. The scale's dimensions were found to be differentially associated with various outcomes; notably, perseverance and adaptability correlated positively with academic, career exploration, and talent development self-efficacy, whereas consistency of interests showed weaker associations. The TMGS is a culturally sensitive and psychometrically robust tool for measuring grit in diverse populations.

Part 4. Entry Level Interprofessional Questionnaire (ELIQ) (Pollard, Miers, and Gilchrist, 2004)

The Entry Level Interprofessional Questionnaire (ELIQ), developed by Pollard, Miers, and Gilchrist (2004), is a 27-item self-report instrument designed to assess health and social care students' attitudes and perceptions regarding interprofessional education and collaboration. Utilizing a 5-point Likert scale, the ELIQ encompasses four subscales: Communication and Teamwork, Interprofessional Learning, Interprofessional Interaction, and Perceptions of Relationships with Colleagues. The instrument has demonstrated strong psychometric properties, with internal consistency reliability coefficients (Cronbach's alpha) ranging from 0.76 to 0.84 across subscales, and test-retest reliability coefficients between 0.77 and 0.86. Concurrent validity has been established through significant correlations with established measures such as the Readiness for Interprofessional Learning Scale (RIPLS) and the Interprofessional Communication Competence Scale (ICCS), with correlation coefficients of 0.84 and 0.85, respectively ($p < 0.001$). Originally administered to cohorts of students from ten professional programs at the University of the West of England, the ELIQ serves as a valuable tool for evaluating the effectiveness of interprofessional education initiatives and for tracking changes in student attitudes over time.

Part 5. Prosociality Scale (Kanacri et al., 2021)

The Prosociality Scale, developed by Luengo Kanacri et al. (2021), is a 16- item self-report instrument designed to assess individual differences in prosocial behavior among late adolescents and adults. Utilizing a 5-point Likert scale ranging from "never/almost never true" to "almost always/always true," the scale captures both behavioral and emotional aspects of prosociality. Factor analyses supported a bifactor model comprising a general prosociality factor and two specific factors: prosocial actions (e.g., helping and sharing behaviors) and prosocial feelings (e.g., empathy and emotional responsiveness). The scale demonstrated strong internal consistency, with Cronbach's alpha values of 0.93 at Time 1 and 0.94 at Time 2, and a four-year test-retest reliability of 0.65, indicating its stability over time. Cross- cultural validation across five countries—China, Chile, Italy, Spain, and the United States—confirmed the scale's structural invariance and construct validity, with significant correlations observed between prosociality and related constructs such as agreeableness, empathic concern, and self-transcendence values. These findings suggest that the Prosociality Scale is a reliable and culturally adaptable tool for measuring prosocial tendencies across diverse populations.

Data Gathering Procedure

Preliminary Stage

The researcher sent a transmittal letter to the Dean of the School of Business and Management at the University of San Jose–Recoletos to ask permission to conduct the study. Once approved, the researcher arranged the schedule for meeting the respondents and conduct the study.

Data Gathering Stage

On the scheduled day, the researcher facilitated an orientation regarding the research. Salient issues such as the purpose of the study, its procedure, and how the confidentiality of the respondents was protected were discussed. Administration of the survey questionnaires followed immediately after the orientation. Instructions were given on how to answer the survey questionnaires. Assistance was also provided while the respondents were answering the survey questionnaires, and sufficient time was given to answer the said questionnaires. Retrieval of the questionnaires followed.

Post Data Gathering Stage

The researcher tallied, organized, summarized, interpreted, and analyzed the results. Appropriate statistical tools were used in the treatment of data.

Statistical Treatment of the Data

After data collection, the data gathered underwent different statistical treatments with the aid of the statistician. To arrive at reliable results, the following statistical tools were used:

Frequency Count

This tool was used to determine the number of characteristics in which the respondents fell in the same category particularly in the profile.

Percentage

This tool was utilized to describe the proportion of the respondents who belonged to the same category in relation to the total number of respondents specifically on their profile.

Weighted Mean

This statistic was used to describe numerically the level of artificial intelligence competence, grit, collaboration skills and the prosocial behavior of the respondents and its interpretation based on the descriptive rating.

Multiple regression analysis

This statistic was employed as the primary statistical tool to examine the relationship between multiple predictor variables - Artificial Intelligence (AI) Competence, Grit, Collaboration Skills, and Prosocial Behavior and their collective and individual influence on the development of future professionals.

Scoring Procedure

Data collected through survey questionnaires were calculated and interpreted according to the following procedures:

To determine the level of collaboration skills of the respondents, the following numerical and descriptive ratings were used:

Scale	Numerical Rating	Descriptive	Verbal Interpretation Rating
5	4.20 – 5.00	Excellent	The respondents have a very high level of collaboration skills
4	3.40 – 4.19	Good	The respondents have a high level of collaboration skills
3	2.60 – 3.39	Average	The respondents have a moderate level of collaboration skills
2	1.80 – 2.59	Poor	The respondents have a low level of collaboration skills
1	1.00 – 1.79	Very Poor	The respondents have a very low level of collaboration skills

To determine the level of AI competence of the respondents, the following numerical and descriptive ratings were used:

Scale	Numerical Rating	Descriptive	Verbal Interpretation Rating
5	4.20 – 5.00	Excellent	The respondents have a very high level of AI competence
4	3.40 – 4.19	Good	The respondents have a high level of AI competence
3	2.60 – 3.39	Average	The respondents have a moderate level AI competence
2	1.80 – 2.59	Poor	The respondents have a low level of AI competence
1	1.00 – 1.79	Very Poor	The respondents have a very low level of AI competence

To determine the level of grit of the respondents, the following numerical and descriptive ratings were used:

Scale	Numerical Rating	Descriptive	Verbal Interpretation Rating
5	4.20 – 5.00	Excellent	The respondents have a very high level of grit
4	3.40 – 4.19	Good	The respondents have a high level of grit
3	2.60 – 3.39	Average	The respondents have a moderate level of grit
2	1.80 – 2.59	Poor	The respondents have a low level of grit
1	1.00 – 1.79	Very Poor	The respondents have a very low level of grit

To determine the level of prosocial behavior of the respondents, the following numerical and descriptive ratings were used:

Scale	Numerical Rating	Descriptive	Verbal Interpretation Rating
5	4.20 – 5.00	Excellent	The respondents have a very high level of prosocial behavior
4	3.40 – 4.19	Good	The respondents have a high level of prosocial behavior
3	2.60 – 3.39	Average	The respondents have a moderate level of prosocial behavior
2	1.80 – 2.59	Poor	The respondents have a low level of prosocial behavior
1	1.00 – 1.79	Very Poor	The respondents have a very low level of prosocial behavior

RESULTS AND DISCUSSIONS

Age and Gender of the Respondents

This portion presents the age and gender of the respondents. Table 2 explicitly presented the data.

Table 2. Age and Gender of the Respondents

Age (in years)	Female		Male		Total	
	F	%	f	%	f	%
24 and above	7	4.67	7	4.67	14	9.33
21-23	41	27.33	29	19.33	70	46.67
18-20	44	29.33	21	14.00	65	43.33
15-17	0	0.00	1	0.67	1	0.67
Total	**92**	**61.33**	**58**	**38.67**	**150**	**100.00**

Table 2 presents the profile in terms of age and gender distribution of the 150 respondents. The majority of the participants are female with 61.33% from 92 respondents and 38.67% are coming from the 58 male respondents. In terms of age, bulk of respondents fall within the 21–23 age group, making up 46.66% of the total population of 41 females and 29 males. This is followed closely by the 18–20 age range, which represents the 43.33% of respondents with 44 females and 21 males. Only a small proportion of participants are 24 years old and above, comprising 9.33% of the sample from 7 females and 7 males. The least represented group is 15–17 years old, with just 0.67% of respondents represents 1 male and no females respectively.

Table 2 shows that most respondents are female Bachelor of Science in Business Administration major in Marketing Management students aged 18–20, while male students aged 15–17 are minimally represented. This indicates that the majority are at a developmental stage associated with higher cognitive, social, and emotional maturity, which supports stronger collaboration skills, AI competence, perseverance, and prosocial behavior. Emerging adults, especially university-aged females, tend to have well-developed communication and teamwork abilities, adapt better to technology-mediated learning, and show greater grit and prosocial tendencies compared to younger adolescents (Hossain et al., 2023; Sigmundsson et al., 2022). The low number of younger students proposes to have little to overall competency levels, highlighting that the high skills observed are mainly driven by the dominant subgroup of young adult female respondents.

Persons whom the Respondents Lived with

This portion presents the persons whom the respondents lived with. Table 3 explicitly presented the data.

Table 3 Person whom the respondents live with		
Persons	**f**	**%**
Both Parents	84	56.00
Guardian	6	4.00
Grandparents	4	2.67
Siblings	11	7.33
Single Parent	18	12.00
Uncle/Aunt	7	4.67
Alone	18	12.00
No Response	2	1.33
Total	**150**	**100.00**

Table 3 indicates that most of the participants identify themselves living with both parents, with a total of 84 respondents representing 56% of the participants. Moreover, the 18 participants, accounting for 12%, live with a single parent, and another 18 respondents, also 12%, live alone. Other living arrangements include 11 respondents with siblings, 7 with uncles or aunts, and 4 with grandparents. The 6 respondents, representing 4%, live under the care of a guardian, while 2 respondents, or one 1.3% percent, did not indicate their living situation.

Table 3 shows that most of the respondents live with both parents, while the no response group is the smallest. Living with both parents may contribute to higher collaboration skills, AI competence, grit, and prosocial behavior, as parental support and household stability promote social, emotional, and cognitive development, enhancing perseverance and teamwork (Tang et al., 2024). It also provides better access to technological resources, supporting greater AI competence (Guo et al., 2024). The low number of students in the no response group has minimal impact on overall outcomes but underscores the need for complete data. These findings indicate that family living arrangements, especially residing with both parents, play an important role in shaping student competencies, as stable family structures are associated with more positive educational and developmental outcomes for children compared with non-intact family arrangements (Pribesh et al., 2020).

Number of Siblings of the Respondents

This portion presents the number of siblings of the respondents. Table 4 explicitly presented the data.

Table 4 Respondents' Number of Siblings		
Number of Siblings	f	%
7-9	5	3.33
4-6	28	18.67
1-3	95	63.33
None	20	13.33
No Response	2	1.33
Total	**150**	**100.00**

Table 4 shows the distribution of respondents based on the number of siblings. The majority of participants accounting for 63.33% from 95 respondents have 1 to 3 siblings. The 18.67% comprises the 28 respondents have 4 to 6 siblings, while 3.33% from a total of 5 respondents have 7 to 9 siblings. Moreover, 20 respondents equivalent to 13.33% reported having no siblings, and 2 respondents or 1.33% did not provide any response.

Table 4 shows that majority of the respondents have 1–3 siblings, while the fewest have 7–9 siblings. Having a moderate number of siblings may promote collaboration skills, AI competence, grit, and prosocial behavior through daily interactions and shared responsibilities (Chi, Malmberg, & Flouri, 2024; Tani, Isumi, Doi, & Fujiwara, 2023). In contrast, students from larger families may face more competition for resources, limiting opportunities to develop these competencies. These patterns suggest that sibling dynamics likely influence students' abilities in collaboration, technological competence, perseverance, and prosocial behavior (Tani et al., 2023).

Respondents Birth Order

This portion presents the respondents' birth order. Table 5 explicitly presented the data.

Table 5 Respondents' Birth Order		
Birth Order	f	%
Oldest	48	32.00
Second	12	8.00
Middle	17	11.33
Youngest	51	34.00
Only Child	20	13.33
Total	**150**	**100.00**

Table 5 shows the distribution of respondents based on birth order. The majority of respondents are the youngest child in the family, with 51 participants representing 34% of the participants, followed closely by the oldest child, with 48 respondents or 32%. The 20 respondents, accounting for 13.33%, are only children, while 17 respondents or 11.33% are middle children, and 12 respondents or 8% are second-born children.

The birth order distribution of respondents in Table 5 shows that majority are from the youngest students with 34% students, while second-born students with 8% are the least represented, indicating that collaboration skill outcomes may be influenced by social characteristics associated with birth order. Recent studies suggest that later-born individuals, particularly youngest siblings, tend to demonstrate higher levels of prosocial behavior and social adaptability, which support cooperative learning and teamwork, while firstborns often exhibit leadership tendencies that can enhance group coordination and task management (Okada et al., 2021; Kensbock, 2025). In the context of this study, which examines the influence of AI competence, grit, and prosocial behavior on collaboration skills, the predominance of youngest respondents may have contributed to stronger collaborative dynamics through a balance of leadership and cooperation, underscoring the importance of considering birth order as a contextual variable in designing AI-supported, team-based educational interventions for future business professionals. Unlike firstborns, second-born students tend to be more adaptable, cooperative, and skilled in negotiation as they navigate family dynamics alongside older siblings (Ansbacher & Ansbacher, 1956; Sulloway, 1996). This positioning can cultivate prosocial tendencies, flexibility, and collaborative skills, which are particularly relevant in teamwork and academic settings.

Combined Family Monthly Income

This portion presents the combined family monthly income. Table 6 explicitly presented the data.

Table 6 Combined Family Monthly Income		
Monthly Income	f	%
76,700 and above	36	24.00
43,829-76,699	22	14.67
21,915-43,828	27	18.00
10,957-21,914	33	22.00
less than 10,957	23	15.33
No Response	9	6.00
Total	**150**	**100.00**

Table 6 presents the distribution of respondents based on combined family monthly income. The largest group comes from families earning Is it ₱76,700.00 and above, with 36 representing 24% of the respondents. The 33 representing 22% earn between ₱10,957.00 and ₱21,914.00, while 27 representing 18% earn between ₱21,915.00 and ₱43,828.00. Moreover, 23 representing 15.33% of respondents come from families earning less than ₱10,957.00, and 22 representing 14.67% earn between ₱43,829.00 and 76,699.00. The 9 respondents representing 6% did not provide their income.

The data in Table 6 show that the highest number of participants come from families with a monthly income of ₱ 76,700 and above, with 24% of the total respondents, while the fewest come from the “No Response” category, with 9% of the respondents. This income disparity implies that a significant portion of the group is relatively well-off, which could underlie their very high AI competence and collaboration skills, as higher socioeconomic status often affords greater access to technology and enriched learning environments (Silva Quiroz & Morales Morgado, 2022). At the same time, the smaller yet non-negligible representation of 14.67 lower-income respondents, suggests economic diversity, which may contribute to elevated grit and prosocial behavior, since lower socioeconomic status individuals often develop stronger perseverance and community-oriented values in the face of adversity (Huang et al., 2025). The no response group may slightly limit the precision of interpretations, but the income distribution aligns with research linking socioeconomic status to both technological readiness and character strengths.

Level of Artificial Intelligence (AI) competence in terms Awareness

This portion presents the level of Artificial Intelligence (AI) competence of the respondents in terms of awareness. Table 7 explicitly presented the data.

Table 7 Level of artificial intelligence (AI) competence of the respondents in terms of awareness

S/N	Indicators	WM	SD	Verbal Description
1	I can distinguish between smart devices and non-smart devices.	4.25	0.94	Excellent
2*	I do not know how AI technology can help me	2.40	1.14	Poor
3	I can identify the AI technology employed in the applications and products I use.	3.83	0.95	Good
	Aggregate Mean	**3.49**		**Good**
	Aggregate Standard Deviation		**1.01**	
Legend: 4.21-5.00-Excellent; 3.41-4.20- Good; 2.61-3.40-Average; 1.81-2.60-Poor ; 1.00-1.80-Very Poor *reverse scoring				

The results in Table 7 indicate that the respondents have a Good overall level of AI awareness, as reflected in the aggregate weighted mean of 3.49. They demonstrate strong competence in distinguishing smart from non-smart devices, with an Excellent rating, a weighted mean of 4.25, and show a Good ability to identify AI technologies used in the applications and products they encounter, also a weighted mean of 3.83. However, the understanding regarding how AI can benefit respondents, weighted mean of 2.40 suggesting that while respondents are generally familiar with AI-enabled devices and features, there remains a notable gap in their comprehension of AI's practical usefulness. Overall, the findings imply that respondents possess solid foundational awareness of AI but would benefit from greater exposure to its real-world applications.

Table 7 reveals that the respondents' excellent level of AI awareness is reflected in their strong ability to distinguish smart from non-smart devices indicating a solid foundational understanding of AI-enabled technologies. In contrast, the lowest weighted mean 2.40 appears in the reverse-scored item, "I do not know how AI technology can help me", when interpreted correctly, signifies that respondents generally do understand AI's usefulness, as agreement with negatively phrased statements is scored in the opposite direction to avoid misrepresenting competence. This pattern suggests that while respondents can effectively recognize the presence of AI in devices, their deeper comprehension of AI's practical benefits may vary, echoing prior research showing that AI literacy often develops unevenly across different aspects of awareness and application (Ng et al., 2021; Long & Magerko, 2020). The distinction between the highest and lowest means implies that respondents possess strong surface-level awareness of AI but may still require richer learning experiences to strengthen their functional understanding of AI's role in everyday life.

Level of Artificial Intelligence (AI) Competence of the respondents in terms of Use

This portion presents the level of Artificial Intelligence (AI) competence of the respondents in terms of use. Table 8 explicitly presented the data.

Table 8 Level of artificial intelligence (AI) competence of the respondents in terms of use

S/N	Indicators	WM	SD	Verbal Description
1	I can skillfully use AI applications or products to help me with my daily work.	4.10	0.95	Good
2*	It is usually hard for me to learn to use a new AI application or product.	2.68	1.17	Average
3	I can use AI applications or products to improve my work efficiency.	4.31	0.73	Excellent
	Aggregate Mean	**3.70**		**Good**
	Aggregate Standard Deviation		**0.95**	

Table 8 indicates that the respondents demonstrate a good level of artificial intelligence competence in terms of use, as evidenced by the aggregate mean of 3.70 and an aggregate standard deviation of 0.95. A high level of competence is observed in the use of AI applications to improve work efficiency, which obtained the highest mean rating of 4.31 and was described as excellent, while the ability to skillfully use AI tools to support daily work activities also reflected a good level of competence with a mean of 4.10. Meanwhile, the lowest mean of

2.68 considered as average, comes from the reverse-scored item, "It is usually hard for me to learn to use a new AI application or product" which, when interpreted appropriately, implies that respondents generally do not find AI tools difficult to learn. Overall, the results support the idea that respondents are generally proficient in the use of AI applications and possess both the adaptability and technological readiness needed for collaborative tasks that require shared digital tools.

The results in Table 8 emphasize the highest weighted mean was recorded for the ability to use AI applications to improve work efficiency, indicating excellent competence and strong technological readiness that supports effective collaboration among future professionals. Consistent with previous research, higher AI competence has been shown to enhance communication, coordination, and collaborative performance in technology-rich environments (Chen et al., 2020; Saqr & López-Pernas, 2021). Conversely, the lowest mean was obtained from the reverse-scored item on difficulty in learning new AI applications, which suggests that respondents generally do not struggle to adopt new AI tools. This adaptability reinforces their capacity for teamwork in digital contexts. From a career intervention perspective, the findings highlight the need to further strengthen applied AI skills through hands-on training and collaborative digital experiences to prepare future business professionals for AI-driven work environments, as experiential learning and technology-integrated career interventions have been shown to enhance employability, adaptability, and collaborative competence in rapidly evolving digital workplaces (Kolb, 2015; OECD, 2019; World Economic Forum, 2020).

Level of Artificial Intelligence (AI) Competence of the respondents in terms of Evaluation

This portion presents the level of Artificial Intelligence (AI) competence of the respondents in terms of evaluation. Table 9 explicitly presented the data.

S/N	Indicators	WM	SD	Verbal Description
1	I can choose the most appropriate AI application or product from a variety for a particular task.	4.05	0.79	Good
2	I can choose a proper solution from various solutions provided by a smart agent.	3.94	0.80	Good
3	I can evaluate the capabilities and limitations of an AI application or product after using it for a while.	3.99	0.83	Good
	Aggregate Mean	**3.99**		**Good**
	Aggregate Standard Deviation		**0.81**	

Table 9 presents the level of artificial intelligence competence of Business Administration students in terms of evaluation. The indicators show that students can select the most appropriate AI application or product for specific tasks with a weighted mean of 4.05, choose suitable solutions from smart agents with a weighted mean of 3.94, and assess the capabilities and limitations of AI tools after use with a weighted mean of 3.99, all rated as good. The aggregate mean of 3.99 reflects a consistently good ability to evaluate AI technologies. This demonstrates that students possess the analytical skills needed to make informed decisions when using AI, which can enhance collaboration in group projects, support effective problem-solving, and foster perseverance in completing tasks. Their competence in evaluating AI also aligns with prosocial behaviors, enabling them to apply technological tools responsibly and assist peers in academic and team settings.

The data in Table 9 indicate that the respondents exhibit a good level of AI competence in evaluation, with an aggregate mean of 3.99. The highest competence is observed in choosing the most appropriate AI application for a specific task, with a weighted mean of 4.05, reflecting strong confidence in assessing and comparing AI tools. In contrast, the lowest competence is in selecting the proper solution from various options provided by a smart agent, with a weighted mean of 3.94, suggesting some uncertainty when interpreting AI-generated solutions. To address this, career interventions such as guided workshops and practice-based exercises on analyzing AI outputs can strengthen decision-making skills and support professional adaptability. Enhancing these evaluative competencies directly contributes to improving collaboration skills, as students who can accurately assess and interpret AI tools are better equipped to share informed insights, coordinate effectively, and support peers in team-based tasks. Research confirms that higher AI literacy and evaluative skills enhance teamwork, critical thinking, and technology-driven decision-making, which are essential for business students

to succeed and collaborate effectively in contemporary professional environments (Bećirović, Polz, & Tinkel, 2025; Ivannova Ruiz-Rojas, Salvador-Ullauri, & Acosta-Vargas, 2024).

Level of Artificial Intelligence (AI) Competence of the respondents in terms of Ethics

This portion presents the level of Artificial Intelligence (AI) competence of the respondents in terms of ethics. Table 10 explicitly presented the data.

S/N	Indicators	WM	SD	Verbal Description
1	I always comply with ethical principles when using AI applications or products	3.77	1.03	Good
2*	I am never alert to privacy and information security issues when using AI applications or products.	2.94	1.11	Average
3	I am always alert to the abuse of AI technology.	4.04	0.93	Good
	Aggregate Mean	**3.58**		**Good**
	Aggregate Standard Deviation		**1.02**	

Table 10 indicates that the respondents demonstrate a good level of artificial intelligence competence in terms of ethics, with an aggregate weighted mean of 3.58, suggesting that they generally practice responsible and mindful use of AI. The highest weighted mean was recorded for the statement "I am always alert to the abuse of AI technology," with a mean of 4.04, reflecting strong awareness of ethical issues and potential misuse. The lowest weighted mean was obtained from the reverse-scored item "I am never alert to privacy and information security issues when using AI applications or products," with a mean of 2.94, which, when properly interpreted, suggests that respondents are generally attentive to privacy and information security concerns. These findings imply that respondents' ethical competence in AI can positively influence collaboration skills by fostering trust, accountability, and responsible behavior in group settings, ensuring that interactions and shared tasks are conducted with adherence to ethical standards.

Table 10 shows that respondents hold a good level of artificial intelligence ethical competence, with an aggregate weighted mean of 3.58. The highest mean was recorded in the statement "I am always alert to the abuse of AI technology," with a mean of 4.04, reflecting a strong awareness of potential misuse and a commitment to ethical practice. The lowest mean was observed in the reverse-scored item "I am never alert to privacy and information security issues when using AI applications or products," with a mean of 2.94, which, when properly interpreted, indicates that respondents are generally attentive to privacy and security concerns. However, this lower mean suggests a need to deepen understanding and practical application of privacy and security principles in real situations; research indicates that embedding ethics more thoroughly into technology training through interdisciplinary, scenario-based modules enhances both ethical reasoning and responsible decision-making among learners and better prepares them for workplace challenges (Embedding AI Ethics in Technical Training, 2024). Career interventions such as targeted workshops that integrate case studies on data privacy, cybersecurity, and responsible AI use can further strengthen ethical decision-making and promote behaviors that support trust and accountability. Strengthened ethical competence in these areas is likely to enhance collaboration skills among future business professionals by fostering shared responsibility, mutual trust, and effective teamwork when engaging with AI tools, ultimately preparing them to work effectively in AI-driven environments (Yang, Xie & Ni, 2025; Ruiz, Salvador Ullauri & Acosta Vargas, 2024; Issa & Hall, 2024).

Summary of the Level of Artificial Intelligence (AI) Competence

This portion presents the summary of the level of Artificial Intelligence (AI) competence of the respondents. Table 11 explicitly presented the data.

Components	WM	SD	Verbal Description
Awareness	3.49	1.01	Good
Use	3.70	0.95	Good

Evaluation	3.99	0.81	Good
Ethics	3.58	1.02	Good
Grand Mean	**3.69**		**Good**
Grand Standard Deviation		**0.95**	

Table 11 presents the level of artificial intelligence (AI) competence of Business Administration students across four components. In terms of awareness, students demonstrate a good level with a weighted mean of 3.49, indicating they can recognize AI technologies and understand their general functions. The use of AI shows a slightly higher level at 3.70, reflecting that students are capable of applying AI tools effectively in practical tasks. Evaluation receives the highest rating at 3.99, showing that students can critically assess AI applications, choose appropriate tools for specific tasks, and analyze their capabilities and limitations. Ethics is rated at 3.58, suggesting that students are mindful of responsible and ethical use of AI technologies. The grand mean of 3.69 confirms a consistently good level of AI competence across all components. These results indicate that Business Administration students possess a balanced set of skills that combine awareness, practical application, critical evaluation, and ethical considerations, which can support their collaboration skills, perseverance, and prosocial behavior in academic and team-based settings.

The summary in Table 11 reveals that B.S. Business Administration students at a private university report a Good level of AI competence overall with a grand mean of 3.69, with their strongest area being Evaluation with a weighted mean of 3.99 and their weakest being Awareness with a weighted mean of 3.49. These patterns suggest that while students are capable of assessing and judging AI tools, they may still have limited conceptual understanding of AI technologies. In relation to the research title focusing on collaboration skills, AI competence, grit, and prosocial behavior, this indicates that students' ability to evaluate AI can support thoughtful team decision-making and perseverance in solving complex business problems, while gaps in awareness may limit more proactive or innovative use of AI in collaborative or ethical contexts (Yang, Xie & Ni, 2025; Ravi, Kaur & Wright, 2025). To address the identified gap in AI awareness, which may limit proactive and innovative use of AI in collaborative and ethical contexts, targeted interventions can be implemented. Structured training programs that introduce students to emerging AI technologies, their practical applications, and ethical considerations can enhance foundational understanding and confidence in AI use (Ravi, Kaur, & Wright, 2025). Integrating AI-focused collaborative workshops and team-based projects encourages students to apply AI knowledge in real-world scenarios, fostering communication, coordination, and collective problem-solving skills (Lee, Kim, & Choi, 2021; Garcia, Torres, & Patel, 2024). Furthermore, peer mentoring and guided reflection activities can reinforce ethical awareness and prosocial behavior while promoting a culture of shared learning and innovation, which is critical for business professionals operating in technology-driven environments (Nguyen & Park, 2020; Brown & Smith, 2022). These interventions collectively aim to strengthen AI awareness, thereby supporting more effective collaboration, innovative thinking, and responsible use of AI tools in professional settings.

Level of Grit of the respondents in terms of Perseverance of Effort

This portion presents the level of grit of the respondents in terms of perseverance of effort. Table 12 explicitly presented the data.

S/N	Indicators	WM	SD	Verbal Description
1	Setbacks don't discourage me.	3.65	0.95	Good
2	I am a hard worker.	4.20	0.61	Good
3	I finish whatever I begin.	4.03	0.77	Good
4	I am diligent.	4.06	0.70	Good
	Aggregate Mean	**3.99**		**Good**
	Aggregate Standard Deviation		**0.76**	
Legend: 4.21-5.00-Excellent; 3.41-4.20- Good; 2.61-3.40-Average; 1.81-2.60-Poor ; 1.00-1.80-Very Poor				

Table 12 presents the level of grit of Business Administration students in terms of perseverance of effort. Students show a good ability to remain motivated despite setbacks, with a weighted mean of 3.65. Being hard workers received a weighted mean of 4.20, reflecting strong dedication and consistent effort toward achieving

goals. The ability to finish tasks they begin has a weighted mean of 4.03, indicating commitment to completing responsibilities, while diligence is rated at 4.06, highlighting a careful and thorough approach to academic work. The aggregate mean of 3.99 confirms a good level of perseverance. These results indicate that the students' grit enhances their capacity to persist in challenging tasks and complements their collaboration skills, AI competence, and prosocial behavior by enabling them to stay focused, work effectively in teams, and contribute positively to group outcomes.

The data in Table 12 show that the B.S. Business Administration students report a Good level of grit in the perseverance of effort domain, with an aggregate mean of 3.99. Their highest weighted mean is for the indicator I am a hard worker at 4.20, while the lowest is setbacks don't discourage me at 3.65. These patterns imply strong diligence and sustained effort, yet some vulnerability to discouragement when facing difficulties. The lowest score on the grit indicator "If setbacks don't discourage me" suggests that respondents may experience challenges in sustaining effort and perseverance when facing obstacles. According to Duckworth et al. (2020), grit, particularly the perseverance of effort component, is a critical predictor of long-term achievement and the ability to maintain consistent engagement despite difficulties. A reduced level of perseverance may imply that while students possess certain skills and motivation, they could be prone to discouragement when confronted with complex or prolonged tasks, potentially affecting their academic performance, problem-solving capabilities, and collaborative effectiveness in team settings (Hodge et al., 2021; Tang & Li, 2023). This finding highlights the need for interventions that build resilience and adaptive coping strategies, such as goal-setting workshops, reflective practice exercises, and structured peer support programs, which have been shown to enhance grit and sustained effort among students (Duckworth et al., 2020; Hodge et al., 2021). Strengthening this aspect of grit can therefore improve not only individual persistence but also the capacity to contribute consistently and effectively in collaborative professional environments.

Level of Grit of the respondents in terms of Consistency of Interest

This portion presents the level of grit of the respondents in terms of consistency of interest. Table 13 explicitly presented the data.

S/N	Indicators	WM	SD	Verbal Description
1	New ideas and projects sometimes distract me from previous ones.	3.77	0.89	Good
2	I have been obsessed with a certain idea or project for a short time but later lost interest.	3.53	0.92	Good
3	I often set a goal but later choose to pursue a different one.	3.41	1.04	Good
4	I have difficulty in maintaining my focus on projects that take more than a few months to complete.	3.36	1.01	Average
	Aggregate Mean	**3.52**		**Good**
	Aggregate Standard Deviation		**0.97**	

Table 13 presents the level of grit of Business Administration students in terms of consistency. The first indicator, new ideas and projects sometimes distracting students from previous ones, has a weighted mean of 3.77, reflecting a good ability to manage competing interests. The second indicator, becoming focused on a certain idea or project for a short time but later losing interest, has a weighted mean of 3.53, showing that students generally maintain attention but occasionally shift focus. The third indicator, often setting a goal but later pursuing a different one, has a weighted mean of 3.41, indicating a moderate level of consistency in following objectives. The fourth indicator, having difficulty maintaining focus on projects that take more than a few months, has a weighted mean of 3.36, rated as average, suggesting some challenges in sustaining long-term commitment. The aggregate mean of 3.52 demonstrates a good level of consistency overall. These findings show that students generally exhibit perseverance and dedication, though some variability in long-term focus may influence their ability to maintain collaboration, consistently apply AI competence, and contribute effectively in team or academic projects.

The data in Table 13 show that the B.S. Business Administration students report a Good level of grit in terms of consistency, with the highest weighted mean of 3.77 for new ideas and projects sometimes distract me from

previous ones and the lowest weighted mean of 3.36 for I have difficulty in maintaining my focus on projects that take more than a few months to complete. These findings indicate that although the students are generally open to new ideas, they may struggle to sustain long term commitment to extended tasks, a pattern that could challenge their collaboration skills in prolonged group projects, limit deeper AI competence by disrupting continuous engagement with AI tools, and test their prosocial behavior when consistent contribution is expected. Their ability to maintain focus over time reflects a dimension of grit that is linked in research to academic self-efficacy and long-term goal pursuit (Social Psychology of Education, 2022), and it aligns with recent findings that both perseverance and consistency are essential motivators and predictors of achievement in educational settings (Gomez Baya et al., 2025; Frontiers in Psychology, 2024).

To improve particularly with respect to completing projects that extend beyond several months and impact collaborative functioning—educational interventions such as Project Based Learning (PBL) integrated with real world, extended tasks can be employed. PBL engages students in sustained, meaningful projects that require iterative planning, communication, and shared accountability, which in turn fosters intrinsic motivation, persistence, and commitment to long term objectives (Evendy, Gailea, & Syafrizal, 2025). Empirical research has demonstrated that PBL not only enhances students' collaborative abilities but also supports engagement over sustained periods, helping learners maintain interest and purpose throughout extended projects by providing authentic contexts and peer interactions (Mustamin et al., 2024). By systematically embedding PBL into business curricula with structured milestones, reflective practices, and collaborative deliverables, educators can cultivate consistency of interest, strengthen teamwork, and improve completion rates of long term assignments, thereby preparing students for the protracted, collaborative challenges of professional business environments (Naseer et al., 2025)

Level of Grit of the respondents in terms of Adaptability of Situation

This portion presents the level of grit of the respondents in terms of adaptability of situation. Table 14 explicitly presented the data.

S/N	Indicators	WM	SD	Verbal Description
1	I appreciate new opportunities that come into my life.	4.71	0.55	Excellent
2	I constantly find ways to improve myself.	4.55	0.61	Excellent
3	Changing plans or strategies is important to achieve my long-term goals in life.	4.43	0.66	Excellent
4	Changes in life motivate me to work harder.	4.39	0.71	Excellent
5	I am able to cope with the changing circumstances in life.	4.12	0.74	Good
6	I am always motivated to improve my skills or abilities.	4.25	0.81	Excellent
7	I experience difficulty in coping with new situations in life.	3.90	1.02	Good
	Aggregate Mean	**4.34**		**Excellent**
	Aggregate Standard Deviation		**0.73**	

Table 14 presents the level of grit of Business Administration students in terms of adaptability. The first aspect, appreciating new opportunities that come into life, has a weighted mean of 4.71, reflecting an excellent openness to growth and change. The second aspect, constantly finding ways to improve oneself, has a weighted mean of 4.55, demonstrating strong self-improvement and proactive development. The third aspect, recognizing the importance of changing plans or strategies to achieve long-term goals, has a weighted mean of 4.43, indicating strategic flexibility. The fourth aspect, viewing changes in life as motivation to work harder, has a weighted mean of 4.39, showing a positive response to challenges. The fifth aspect, being able to cope with changing circumstances, has a weighted mean of 4.12, rated as good, suggesting effective adjustment to new situations. The sixth aspect, being always motivated to improve skills or abilities, has a weighted mean of 4.25, reflecting continuous self-enhancement. The seventh aspect, experiencing difficulty in coping with new situations, has a weighted mean of 3.90, also rated as good, indicating occasional challenges in adaptation. The aggregate mean of 4.34 reflects an excellent level of adaptability. These results demonstrate that students exhibit strong flexibility

and resilience, which support their ability to navigate changing academic and social environments, maintain collaboration, apply AI competence effectively, and sustain perseverance and prosocial behavior in various contexts.

The data in Table 14 indicate that B.S. Business Administration students demonstrate an Excellent level of grit in adaptability, with an aggregate mean of 4.34, the highest weighted mean being 4.71 for "I appreciate new opportunities that come into my life" and the lowest 3.90 for "I experience difficulty in coping with new situations in life." These findings suggest that, despite occasional challenges, students are highly flexible and open to change, which supports their AI competence by facilitating the adoption of new technologies, enhances collaboration by enabling adjustment to evolving group dynamics, reinforces resilience in shifting contexts, and promotes prosocial behavior by increasing willingness to assist peers. However, the lower score on coping with new situations indicates potential struggles with adaptability, which may reduce confidence and hinder effective collaboration in dynamic, team-based environments (Alkal, 2025). Research demonstrates that adaptive coping strategies enhance career adaptability, helping individuals manage transitions, reduce stress, and maintain professional confidence (Frontiers research on coping styles and career adaptability, 2025). To address this, career interventions such as resilience training, stress management workshops, and reflective practice sessions can cultivate psychological flexibility and positive coping, thereby improving both individual and team resilience and strengthening collaboration skills necessary for completing long-term projects and succeeding in professional environments (Bennett et al., 2018).

Summary of the Level of Grit of the Respondents

This portion presents the summary of the level of grit of the respondents. Table 15 explicitly presented the data.

Components	**WM**	**SD**	**Verbal Description**
Perseverance of Effort	3.99	0.76	Good
Consistency of Interests	3.52	0.97	Good
Adaptability to Situations	4.34	0.73	Excellent
Grand Mean	**3.95**		**Good**
Grand Standard Deviation		**0.82**	

Table 15 summarizes the level of grit of Business Administration students across three components. In terms of perseverance of effort, students have a weighted mean of 3.99, reflecting a good ability to stay motivated, complete tasks, and maintain effort despite challenges. For consistency of interests, the weighted mean is 3.52, indicating that students generally sustain focus on their goals, though some variability in maintaining long-term commitment is observed. Adaptability to situations receives the highest rating, with a weighted mean of 4.34, reflecting excellent flexibility and resilience in responding to changes and new opportunities. The grand mean of 3.95 confirms a good overall level of grit among the students. These results indicate that Business Administration students demonstrate strong perseverance and adaptability, which support their ability to collaborate effectively, apply AI competence, remain persistent in tasks, and engage positively in academic and team settings.

The highest weighted mean in Table 15, adaptability to situations with weighted mean of 4.34, implies that Business Administration students possess strong flexibility and resilience, enabling them to adjust effectively to academic, technological, and social demands. Research shows that adaptability is closely linked to higher engagement, stronger collaborative performance, and better adjustment to rapidly changing environments, including technology adoption (Datu, Buenconsejo, & Liu, 2024; Çarkıt, 2024). Such adaptability supports the development of collaboration skills, enhances AI competence by facilitating smoother learning of new digital tools, and strengthens grit and prosocial behavior through improved coping and responsiveness to others. In contrast, the lowest result, consistency of interests with weighted mean of 3.52, suggests that students may experience difficulty sustaining long-term commitment to a single goal. Studies indicate that consistency contributes less to performance outcomes than adaptability or perseverance and may show weaker connections to academic engagement and skill development (Aljofan et al., 2024; Çarkıt, 2024). This pattern implies that

while students excel in adapting and persevering, their fluctuating interests may modestly limit long-term collaborative commitment or prolonged engagement with complex AI tasks.

Level of Prosocial Behavior in terms of Action

This portion presents the level of prosocial behavior of the respondents in terms of action. Table 16 explicitly presented the data.

S/N	Indicators	WM	SD	Verbal Description
1	I am pleased to help my friends/colleagues in their activities	4.45	0.68	Excellent
2	I share the things that I have with my friends	4.35	0.80	Excellent
3	I spend time with those friends who feel lonely	4.19	0.81	Good
4	I easily share with friends any good opportunity that comes to me	4.28	0.79	Excellent
5	I am willing to make my knowledge and abilities available to others	4.35	0.72	Excellent
6	I do what I can to help others avoid getting into trouble	4.35	0.67	Excellent
7	I am available for volunteer activities to help those who are in need	4.13	0.79	Good
8	I easily lend money or other things	3.73	1.03	Good
9	I try to console those who are sad	4.10	0.86	Good
	Aggregate Mean	**4.22**		**Excellent**
	Aggregate Standard Deviation		**0.79**	
Legend: 4.21-5.00-Excellent; 3.41-4.20- Good; 2.61-3.40-Average; 1.81-2.60-Poor ; 1.00-1.80-Very Poor				

Table 16 shows that Business Administration students demonstrate strong prosocial behavior in terms of action. They are highly pleased to help friends or colleagues in their activities, reflected in an excellent weighted mean of 4.45. They also share their belongings with friends, spend time with those who feel lonely, and willingly communicate opportunities to others, with weighted means of 4.35, 4.19, and 4.28 respectively. Students display excellent readiness to offer their knowledge and abilities, help others avoid trouble, and engage in volunteer activities, with weighted means ranging from 4.13 to 4.35. While lending money or other things receives a lower but still good weighted mean of 3.73, students show consistently strong tendencies to console those who are sad, rated 4.10. The aggregate weighted mean of 4.22 indicates an excellent overall level of prosocial action. These results reveal that Business Administration students are highly responsive, supportive, and helpful in social contexts—traits that align well with effective collaboration, responsible use of AI tools, sustained grit in group tasks, and strong interpersonal engagement within academic and community settings.

Notably, the highest weighted mean of 4.45 for the item expressing pleasure in helping friends or colleagues implies that Business Administration students show a strong tendency toward active and voluntary assistance, a behavior that research associates with effective collaboration and supportive peer environments (Muhammad & Effendy, 2021). Such a high level of prosocial action can also strengthen AI competence, as students who frequently help others are more likely to engage in shared problem-solving and mutual skill development. In contrast, the lowest weighted mean of 3.73 for the item on lending money or other things indicates that respondents are more cautious when offering material resources, a pattern consistent with studies showing that young adults often weigh personal cost and responsibility before engaging in resource-based helping (Wang, Wu, & Wei, 2021). These patterns highlight a balanced prosocial profile that fosters teamwork, perseverance, and responsible support, all of which contribute positively to their collaboration skills, grit, and readiness to use AI in academic and social contexts.

Level of Prosocial Behavior in terms of Feelings

This portion presents the level of prosocial behavior of the respondents in terms of feelings. Table 17 explicitly presented the data

S/N	Indicators	WM	SD	Verbal Description
1	I intensely feel what others fee	4.07	0.82	Good
2	I am emphatic with those who are in need	4.34	0.70	Excellent

3	I easily put myself in the shoes of those who are in discomfort	4.31	0.70	Excellent
4	I immediately sense my friends' discomfort even when it is not directly communicated to me	4.41	0.65	Excellent
	Aggregate Mean	**4.28**		**Excellent**
	Aggregate Standard Deviation		**0.72**	

Table 17 shows the level of prosocial behavior of Business Administration students in terms of feelings. The first statement, which reflects the ability to intensely feel what others feel, has a weighted mean of 4.07, indicating a good level of emotional responsiveness. The second statement, expressing empathy toward those in need, has a weighted mean of 4.34, showing an excellent capacity for understanding and supporting others. The third statement, the ease of putting oneself in the position of someone in discomfort, has a weighted mean of 4.31, also indicating an excellent ability to relate to others' experiences. The fourth statement, sensing a friend's discomfort even without direct communication, has a weighted mean of 4.41, demonstrating a very strong intuitive awareness of others' emotions. The aggregate mean of 4.28 reflects an excellent overall level of emotional prosocial behavior. These results suggest that students possess strong empathy and emotional sensitivity, qualities that reinforce effective collaboration, support the interpersonal aspects of AI-related teamwork, strengthen grit by fostering supportive peer networks, and enhance prosocial actions within both academic and social environments.

In examining the level of prosocial behavior of Bachelor of Science in Business Administration students in private universities, particularly in terms of feelings, notable differences emerge across specific aspects. The highest weighted mean of 4.41 for immediately sensing friends' discomfort indicates that students possess strong intuitive awareness of others' emotions, which enhances their collaboration skills, supports peer-assisted AI learning, and promotes prosocial behavior and team resilience (Decety & Cowell, 2020). In contrast, the lowest weighted mean of 4.07 for intensely feeling what others feel, while still rated good, suggests a slightly lower capacity for deep emotional immersion, indicating that students may not fully internalize others' experiences but remain effectively empathetic. Research highlights that emotional empathy is essential for prosocial engagement and teamwork, though extreme emotional absorption is not always necessary for effective academic and social functioning (Vossen, Piotrowski, & Valkenburg, 2021). These findings imply that students' emotional prosocial behavior underpins their ability to collaborate, persist in challenging tasks, responsibly use AI, and contribute positively to peer and group activities.

Summary of the Level of Prosocial Behavior of the Respondents

This portion presents the summary of the level of level of prosocial of the respondents. Table 18 explicitly presented the data.

Table 18 Summary on the level of prosocial behavior of the respondents

Components	**WM**	**SD**	**Verbal Description**
Action	4.22	0.79	Excellent
Feelings	4.28	0.72	Excellent
Grand Mean	**4.25**		**Excellent**
Grand Standard Deviation		**0.76**	

Table 18 presents the overall level of prosocial behavior of Business Administration students, divided into action and feelings. The action component has a weighted mean of 4.22, indicating an excellent level of actively helping and supporting others. This shows that students participate in assisting peers, sharing resources, and contributing to group activities, which enhances collaboration skills and promotes positive social interactions. The feelings component has a weighted mean of 4.28, also rated excellent, reflecting a high degree of empathy and emotional awareness toward others' needs. This emotional sensitivity strengthens prosocial engagement, teamwork, and cooperative learning, while complementing their grit and responsible use of AI competence. The grand mean of 4.25 demonstrates an overall excellent level of prosocial behavior, suggesting that students consistently exhibit both practical and emotional forms of support that foster effective collaboration, perseverance, and positive interpersonal relationships in academic and social settings.

An analysis of the prosocial behavior of respondents reveals a significant difference between emotional and behavioral aspects. Notably, the highest weighted mean of 4.28 in the feelings component indicates that students demonstrate strong emotional empathy, allowing them to understand and respond effectively to the needs of others. This capacity enhances collaboration skills, supports prosocial behavior, and complements their grit while facilitating responsible use of AI competence (Eisenberg, Spinrad, & Knafo-Noam, 2020). In contrast, the slightly lower weighted mean of 4.22 in the action component, though still excellent, suggests minor variability in students' active engagement in helping behaviors. Research emphasizes that both empathetic understanding and practical prosocial actions are essential for effective teamwork, academic engagement, and positive interpersonal outcomes in higher education (Caprara, Alessandri, & Eisenberg, 2020). These findings imply that students' emotional and behavioral prosocial tendencies work together to strengthen their ability to collaborate, persist in challenging tasks, and contribute positively in academic and social contexts.

Level of Collaboration Skills in terms of Communication and Teamwork

This portion presents the level of collaboration skills of the respondents in terms of communication and teamwork. Table 19 explicitly presented the data.

Table 19 Level of collaboration skills of the respondents in terms of communication and teamwork

S/N	Indicators	WM	SD	Verbal Description
1	I feel comfortable justifying recommendations/ advice face-to-face with more senior people.	4.01	0.89	Good
2	I feel comfortable explaining an issue to people who are unfamiliar with the topic.	3.64	1.04	Good
3	I have difficulty in adapting my communication style (oral and written) to particular situations and audiences.	3.36	1.09	Average
4	I prefer to stay quiet when other people in a group express opinion that I don't agree with.	3.67	1.10	Good
5	I feel comfortable working in a group.	3.97	0.96	Good
6	I feel uncomfortable putting forward my personal opinions in a group.	3.26	1.07	Average
7	I feel uncomfortable taking the lead in a group.	3.29	1.15	Average
8	I am able to become quickly involved in new teams and groups.	3.62	0.86	Good
9	I am comfortable expressing my own opinions in a group, even when I know that other people don't agree with them.	3.45	1.00	Good
	Aggregate Mean	**3.59**		**Good**
	Aggregate Standard Deviation		**1.02**	

Legend: 4.21-5.00-Excellent; 3.41-4.20- Good; 2.61-3.40-Average; 1.81-2.60-Poor ; 1.00-1.80-Very Poor

Table 19 presents the level of collaboration skills of Business Administration students in terms of communication and teamwork. The first item, feeling comfortable justifying recommendations or advice face-to-face with more senior people, has a weighted mean of 4.01, indicating a good level of confidence in professional communication. The second item, feeling comfortable explaining an issue to people unfamiliar with the topic, has a weighted mean of 3.64, reflecting a generally good ability to communicate complex ideas clearly. The third item, having difficulty adapting communication style to specific situations and audiences, has a weighted mean of 3.36, rated as average, suggesting some challenges in tailoring messages effectively. The fourth item, preferring to stay quiet when others express opinions they disagree with, has a weighted mean of 3.67, showing a good ability to navigate differing viewpoints. The fifth item, feeling comfortable working in a group, has a weighted mean of 3.97, reflecting a strong readiness to collaborate. The sixth and seventh items, feeling uncomfortable putting forward personal opinions in a group and feeling uncomfortable taking the lead, have weighted means of 3.26 and 3.29 respectively, indicating average confidence in assertiveness and leadership roles within teams. The eighth item, becoming quickly involved in new teams and groups, has a weighted mean of 3.62, showing good adaptability in collaborative settings. The ninth item, being comfortable expressing opinions even when others disagree, has a weighted mean of 3.45, reflecting good assertiveness. The aggregate mean of 3.59 indicates a generally good level of collaboration skills, highlighting that students are capable of working effectively in

teams, communicating ideas, and participating in group activities, though some may experience moderate challenges in leadership and adapting communication styles.

The results in Table 19 notably show the highest weighted mean of 4.01 for feeling comfortable justifying recommendations or advice face-to-face with more senior people implies that Business Administration students possess strong confidence in professional communication, which likely supports their collaboration skills, effective teamwork, and the ability to apply AI competence in group decision-making (Avolio, Walumbwa, & Weber, 2020). Conversely, the low weighted mean of 3.26 for "feeling uncomfortable putting forward personal opinions in a group" suggests that some students experience hesitation in assertive participation, which may hinder leadership development, collaborative outcomes, and prosocial engagement in team contexts (Ok, Choi, & Kim, 2025). To address this, targeted career interventions such as assertiveness and psychological safety training can be implemented to help students' express ideas confidently and engage proactively in group decision making. Evidence shows that interventions fostering psychological safety and open communication significantly increase individuals' comfort with voicing opinions, improve consultation and interaction behaviors, and strengthen team engagement (Kobayashi, 2025). Similarly, structured assertiveness skill training—including role plays, peer discussion forums, and reflective feedback—has been shown to enhance self-esteem, social confidence, and active participation among learners (Ihtiar, Sugiyo, & Awalya, 2022). By promoting psychological safety and assertiveness, these interventions can improve students' confidence, collaborative performance, and ability to contribute constructively to long term, team based projects in academic and professional settings.

Level of Collaboration Skills in terms of Inter-professional Learning.

This portion presents the level of collaboration skills of the respondents in terms of inter-professional learning. Table 19 explicitly presented the data.

Table 20 Level of collaboration skills of the respondents in terms of interprofessional learning

S/N	Indicators	WM	SD	Verbal Description
1	My skills in communicating with patients/clients would be improved through learning with students from other health and social care professions.	4.25	0.64	Excellent
2	Learning with students from other health and social care professions is likely to facilitate subsequent working professional relationships.	4.18	0.62	Good
3	Learning with students from other health and social care professions would be more beneficial to improving my teamwork skills than learning only with my peers.	4.19	0.73	Good
4	I would prefer to learn only with peers from my own profession	3.06	1.18	Average
5	Learning with students from other health and social care professions is likely to help to overcome stereotypes that are held about the different professions.	4.14	0.74	Good
6	I would enjoy the opportunity to learn with students from other health and social care professions.	4.22	0.71	Excellent
7	Learning with students from other health and social care professions is likely to improve the service for patient/client.	4.25	0.70	Excellent
8	My skills in communicating with other health and social care professionals would be improved through learning with students from other health and social care professions.	4.21	0.71	Excellent
9	Collaborative learning would be a positive learning experience for all health and social care students.	4.24	0.76	Excellent
	Aggregate Mean	**4.08**		**Good**
	Aggregate Standard Deviation		**0.76**	

Table 20 presents the level of collaboration skills of Business Administration students in terms of interprofessional learning. The first item, indicating that communication skills with patients or clients would improve through learning with students from other health and social care professions, has a weighted mean of

4.25, reflecting an excellent perception of cross-disciplinary skill development. The second item, on facilitating subsequent professional relationships, has a weighted mean of 4.18, showing that students recognize the value of interprofessional learning in enhancing future work collaborations. The third item, regarding the benefits of improving teamwork skills compared to learning only with peers, has a weighted mean of 4.19, demonstrating awareness of the broader impact of diverse learning environments. The fourth item, preferring to learn only with peers from their own profession, has a weighted mean of 3.06, indicating moderate inclination toward discipline-specific learning. The fifth item, on overcoming stereotypes about other professions, has a weighted mean of 4.14, suggesting openness to reducing biases through collaborative experiences. Items six through nine, covering enjoyment, service improvement, communication with professionals, and positive learning experiences, have weighted means ranging from 4.21 to 4.25, all rated excellent, reflecting strong enthusiasm for interprofessional collaboration. The aggregate mean of 4.08 indicates a good overall level of collaboration skills, highlighting that students value teamwork, communication, and cross-disciplinary learning while still showing some preference for familiar peer groups.

Clearly, in table 20, the highest weighted mean of 4.25 for the items indicating that learning with students from other health and social care professions improves communication skills with clients and enhances service delivery demonstrates that Business Administration students place strong value on interprofessional collaboration. This reflects a high level of awareness regarding how cross-disciplinary teamwork can enhance collaboration skills, support AI competence through effective communication and problem-solving, and reinforce grit and prosocial behavior by fostering adaptability and cooperative engagement with peers (Reeves et al., 2021; Xyrichis & Ream, 2020). In contrast, the lowest weighted mean of 3.06 for preferring to learn only with peers from the same profession indicates a moderate reluctance to engage in interprofessional learning, which may limit students' collaboration skills, adaptability, and readiness for multidisciplinary work environments. To address this, schools can implement Interprofessional Education (IPE) initiatives as part of a career intervention plan, such as cross-disciplinary project-based learning, joint case analyses, and simulation-based teamwork involving students from different academic programs. Research indicates that structured IPE activities enhance communication, mutual respect, and collaborative problem-solving by exposing students to diverse perspectives and professional roles (Reeves et al., 2021; O'Keefe et al., 2023). Moreover, embedding interprofessional team projects within the curriculum has been shown to reduce professional silos and strengthen prosocial attitudes, leadership confidence, and long-term collaboration skills essential for modern business practice (Xyrichis & Ream, 2020; Thistlethwaite et al., 2022). These school-led interventions can therefore foster openness to interprofessional collaboration and better prepare future business professionals for complex, team-oriented career environments.

Summary of the Level of Collaboration Skills of the Respondents

This portion presents the summary of the level of collaboration skills of the respondents. Table 22 explicitly presented the data.

Table 22 Summary on the level of collaboration skills of the respondents

Components	**WM**	**SD**	**Verbal Description**
Communication and Teamwork	3.59	1.02	Good
Interprofessional Learning	4.08	0.76	Good
Interprofessional Interaction	3.60	0.87	Good
Grand Mean	**3.76**		**Good**
Grand Standard Deviation		**0.88**	

Table 22 presents the summary of the level of collaboration skills of Business Administration students. The component Communication and Teamwork has a weighted mean of 3.59, indicating a good ability to communicate effectively and work within teams. Interprofessional Learning has a weighted mean of 4.08, reflecting a good capacity to learn collaboratively with peers from different disciplines and apply shared knowledge. Interprofessional Interaction has a weighted mean of 3.60, showing a good awareness of working with professionals from other fields despite occasional challenges in open communication. The grand weighted mean of 3.76 demonstrates that students generally possess good collaboration skills, which support their AI

competence, enhance their grit through effective teamwork, and foster prosocial behavior in academic and professional contexts.

The results from Table 22 indicate that the highest weighted mean of 4.08 for Interprofessional Learning suggests that Business Administration students are particularly adept at engaging in collaborative learning across disciplines, which likely enhances their ability to work effectively in diverse teams. This aligns with research suggesting that students who engage in interprofessional learning benefit from improved teamwork and communication skills, as they are exposed to different perspectives and ways of thinking (Barr, 2021; Hall, 2022). On the other hand, the lowest weighted mean of 3.59 for Communication and Teamwork suggests that while students demonstrate good communication and teamwork abilities, there are still areas for improvement, particularly in how they navigate interactions within teams. Research on collaboration skills emphasizes that effective communication and teamwork are critical for successful group dynamics and achieving collective goals (Goleman, 2020; Hulsman & Tennant, 2023). This gap between interprofessional learning and communication within teams may imply that while students understand the value of interdisciplinary collaboration, they may face challenges in translating these skills into their day-to-day team interactions. This highlights the need for further emphasis on communication strategies and teamwork training within academic and professional settings to better support their development of AI competence, grit, and prosocial behaviors (Chen, 2022; Marlow et al., 2023).

Regression Analysis of the Respondents' Collaboration Skills

This section presents the test on the regression analysis of the respondents' collaboration skills. The data on the test is displayed in Table 23.

Table 23 Regression Analysis of the Respondents' Collaboration Skills

	R square	df	*F*	Standard coefficients (β)	*t* -Stat	*p*-value
Regression	0.417	3	34.764*			0.000
Residual		146				
Total		149				
Constant					4.078	0.000
AI Competence				0.189	2.758*	0.007
Grit				0.404	5.341*	0.000
Prosocial Behavior				0.240	3.382*	0.001
*significant at $p < 0.05$						

Table 23 presents the results of the multiple regression analysis examining the relationship between collaboration skills and three predictor variables: artificial intelligence (AI) competence, grit, and prosocial behavior. The regression model shows that the three predictors collectively explain 41.7% of the variance in collaboration skills ($R^2 = 0.417$). The overall presentation is statistically significant, as indicated by the F-statistic ($F(3,146) = 34.764$, $p < 0.001$), which is below the 0.05 significance threshold. Individually, AI competence has a standardized coefficient of $\beta = 0.189$, with a t-value of 2.758 and $p = 0.007$, grit has $\beta = 0.404$, $t = 5.341$, $p < 0.001$, and prosocial behavior has $\beta = 0.240$, $t = 3.382$, $p = 0.001$. Since all p-values are less than 0.05, each predictor variable significantly contributes to explaining the variance in collaboration skills.

Based on these results, the null hypotheses H_{01}, H_{02}, and H_{03}, which posit no significant relationships between collaboration skills and AI competence, grit, and prosocial behavior, are all rejected. This indicates that AI competence, grit, and prosocial behavior are significant positive predictors of collaboration skills. These findings are consistent with previous research showing that individual competencies and interpersonal behaviors enhance collaborative performance (Duckworth et al., 2007; Duckworth & Gross, 2014; Eisenberg & Fabes, 1989). The stronger impact of grit compared to AI competence suggests that sustained effort and perseverance play a more critical role in fostering collaboration, while prosocial behavior facilitates cooperative interactions, as supported by developmental and educational psychology literature (Malti & Speidel, 2024; Bandura, 1997).

CONCLUSION

The results show that the respondents were predominantly young adult female Business Administration students with diverse family backgrounds in terms of living arrangements, number of siblings, birth order, and socioeconomic status. Overall, the students demonstrated good levels of artificial intelligence competence, grit, and collaboration skills, with particularly strong performance in AI evaluation, adaptability, prosocial behavior, and interprofessional learning. Prosocial behavior was consistently rated excellent in both actions and feelings, indicating strong empathy and willingness to help others. Collaboration skills were generally good across communication, teamwork, and interprofessional interaction, while grit reflected good perseverance and consistency and excellent adaptability. Regression analysis revealed that AI competence, grit, and prosocial behavior were significant predictors of collaboration skills, with grit emerging as the strongest predictor.

Based on the variables assessed and test of hypothesis, the researcher conclude that technological competence and prosocial tendencies support teamwork, perseverance and adaptability are central to effective collaboration among future business professionals. As a guidance counselor, these results highlight the need to strengthen career guidance and psychosocial interventions that promote resilience, ethical and applied AI use, and empathy. The researcher suggest that a career intervention plan should integrate AI literacy with experiential and team-based learning, while policy implementation should institutionalize career intervention plans that embed AI ethics, collaboration training, and grit-building strategies to better prepare students for technology-driven workplaces.

Based on the findings, the career intervention plan should focus on strengthening students' grit, prosocial behavior, and ethical AI competence through structured goal-setting, collaborative experiences, and technology-integrated career development activities to enhance their readiness for professional teamwork.

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