

EXPLORING GEN Z ENTREPRENEURSHIP: FACTORS INFLUENCING BUSINESS PERFORMANCE AMONG SELF-EFFICACY, CAMPUS ENVIRONMENT, AND LEADERSHIP

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ABSTRACT

Background: MSMEs founded by students continue to grow throughout Indonesia, reflecting the increasing relevance of entrepreneurship in higher education. Despite their potential, many of these businesses struggle to survive due to limited experience and unstable business strategies. Gen Z entrepreneurs also face challenges in balancing academic responsibilities with the demands of running a business. These conditions make it important to examine how individual self-efficacy, leadership, motivation, and campus support shape their business performance.

Purpose: This study analyzes how entrepreneurial self-efficacy, campus environment, entrepreneurial leadership, entrepreneurial innovative behavior, and entrepreneurial motivation interact to shape the business performance of Generation Z entrepreneurs within a university-based ecosystem.

Design/methodology/approach: This study uses a quantitative approach by surveying 150 active entrepreneurial students. Data were analyzed using partial least squares structural equation modeling (PLS-SEM) with a second-order model, which allows detailed analysis of the direct effects and mediating roles between the constructs.

Findings/Results: The findings show that entrepreneurial self-efficacy and campus environment improve business performance directly and indirectly through entrepreneurial motivation. Motivation serves as a bridge that connects self-confidence and institutional support to better outcomes. Meanwhile, entrepreneurial leadership, although mediated by innovative behavior, does not improve performance, and innovative behavior itself does not provide a significant contribution.

Conclusion: Student business performance is primarily shaped by self-efficacy, campus support, and motivation. Leadership and innovation, although conceptually important, do not exert a large influence at this stage, meaning that these dimensions will only have an impact if they are strengthened through broader entrepreneurial experience.

Originality/value (State of the art): This study introduces a new perspective by examining five interconnected constructs in a comprehensive model of Generation Z student entrepreneurship. The evidence highlights motivation as a key link between personal ability and the institutional environment and suggests that leadership-driven innovation is not yet a driver of performance at this early stage.

Keywords: business performance, campus environment, entrepreneurial self-efficacy, entrepreneurial leadership, gen Z

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INTRODUCTION

Digital transformation and post-pandemic economic dynamics place the micro, small, and medium enterprises (MSMEs) sector as the main actors that play a strategic role in maintaining Indonesia's economic growth. The significant contribution of MSMEs to GDP growth, innovation development, and job creation has gained widespread recognition, especially for developing countries (Khan, 2022). According to the number of MSME actors in Indonesia, which has exceeded 64.2 million business units, which contribute 61.07% to the national GDP with a value of Rp8,573.89 trillion, absorbing around 97% of the total workforce, and contributing up to 60.4% of the total domestic investment. Research by Anugerah & Nuraini (2021) states that the development of MSMEs in Indonesia continues to expand to various regions yearly, and East Java holds positions as one of the main centers of national economic activities. In 2023, the number of MSMEs in East Java in 2023 is predicted to reach 9.78 million business units with entrepreneurial growth of 3.5%. East Java Province in the city of Surabaya is a trade center that boosts the growth of various types of MSMEs.

Population Census data from BPS in Parwati (2024) show that the largest age group in Indonesia is Gen Z, which comprises 27.9% of the total population, and this generation was born between 1997 and 2012, many of whom are still in higher education and some of whom have entered the workforce (Lubis & Handayani, 2022). Research by Febiana et al. (2023) shows that Gen Z tends to shift their career preferences to the world of entrepreneurship for a better, independent, and sustainable life. This tendency cannot be separated from the characteristics of Gen Z, who are known to have a creative, adaptive, and innovative mindset (Meiriasari et al. 2024). The shift in career orientation is positive for the growth of national MSMEs and strengthens the urgency of the role of educational institutions and supporting ecosystems in forming a conducive environment for the birth of young entrepreneurs who are adaptive and competent. The key to success in entrepreneurship is usually influenced by education, including formal and informal education (Hasan et al. 2021).

One of the universities with an entrepreneurship-based curriculum in Surabaya is University X. At this university, the curriculum focuses on helping Gen Z

students become real business actors. Education plays an important role in preparing students, especially Gen Z, to become creative, innovative, and competitive entrepreneurs (Yuni et al. 2024). University X also focuses on seven Entrepreneurial Competencies which are the focus of their development in teaching and learning activities: Integrity, High Sense of Achievement, Creativity and Innovation, Networking, Opportunity Creation, Continuous Learning, and Calculated Risk-Taking (Imi & Sidharta, 2022: Sidharta et al. 2023). These seven Entrepreneurial Competencies aim to shape character and practical abilities. University X has practice-based learning that facilitates business ideas, execution, innovation, and sustainability. Every time, University X has given birth to more than 70 businesses in fields such as food and beverage, creative industries, and fashion.

Faizal et al. (2023) emphasized the importance of entrepreneurship-based education for Gen Z to design and run independent projects, gain learning experience, and form skills and character, affirming that education plays a crucial role in encouraging the success and sustainability of micro businesses. Micro-entrepreneurs with higher education backgrounds tend to have better business performance than business actors with lower education levels. In fact, the paradox of Gen Z entrepreneurship, behind the high education and entrepreneurial spirit, there are many Gen Z as MSME actors with businesses that do not last long. The business grew rapidly, but it also collapsed in a short time. Most of the business units owned by Gen Z are trapped by strategy inconsistencies, team rotation is too fast, there is a lack of sustainable innovation, and role conflicts between the identity of Gen Z as students and as businesspeople. The difference between study and reality is an interesting phenomenon to be studied more deeply, exploring the factors that affect the performance of Gen Z as MSME actors, especially in universities (Elshifa et al. 2023).

The literature explains that business performance is affected by a complex combination of internal and external factors (Sadeghi et al. 2023: Br Sitepu, 2017: Sari & Sitepu, 2016). Internal aspects, entrepreneurial character, enthusiasm for learning, and individual capabilities are proven to be the main determinants of MSME performance (Srimulyani et al. 2023). The role of leadership and innovative behavior as key determinants of increasing business competitiveness and sustainability (Ercantan et al. 2024). External

factors, such as learning environment, availability of resources, and participation in entrepreneurial activities contribute to the entrepreneurial growth of Gen Z (Aliedan et al. 2022; Lu et al. 2021). Therefore, understanding how both internal and external factors work together is important to explain why some Gen Z businesses run well, while others struggle to survive. In this context, the dual role of Gen Z as students and business actors, becomes necessary to analyze how their own capacities interact with institutional support in their academic environment. Therefore, this study investigates the problem by examining five key variables that have been theoretically and empirically shown to shape entrepreneurial outcomes such as Entrepreneurial Self-Efficacy (ESE), Campus Environment (CE), Entrepreneurial Motivation (EM), Entrepreneurial Leadership (EL), and Entrepreneurial Innovative Behaviour (EIB). These variables represent a holistic combination of personal, behavioral, and environmental factors. To systematically solve the problem identified in the background, this research adopts a quantitative approach by analyzing how these five variables influence the Business Performance (BP) of Gen Z MSME actors. By testing both direct effects and mediating mechanisms, this study provides a structured method for understanding why many Gen Z businesses grow quickly but fail shortly afterward, despite adequate exposure to entrepreneurship education. This approach helps reveal which internal capacities must be strengthened, what environmental support must be optimized, and how motivation functions as a connector that transforms entrepreneurial intentions into real BP.

Previous studies by Herijanto & Sitepu (2025a) examined the influence of EL and EIB on BP among Gen Z students, finding that both variables significantly contributed to BP. A separate study by Herijanto & Sitepu (2025b) also explored the mediating role of EM between CE, ESE, and BP, and confirmed that motivation is a key bridge between institutional support and individual performance. However, these studies investigated the constructs in separate models and did not integrate all five variables, ESE, CE, EL, EIB, and EM, within a single comprehensive framework. The novelty of the current study lies in combining these constructs into one comprehensive model, allowing for a simultaneous examination of direct effects, mediating mechanisms, and the interplay between personal, behavioral, and environmental factors in shaping Gen Z business performance. Although numerous studies have been

conducted on MSME performance, most factors are still discussed separately and have not fully explored how students' personal beliefs, innovative abilities, and campus support interrelate in influencing real business outcomes, especially among Gen Z entrepreneurs who often face challenges such as limited experience, team changes, shifting business strategies, and the need to balance academic responsibilities with running their ventures. Furthermore, the research was conducted within a university ecosystem that emphasizes practical entrepreneurial learning, providing new theoretical insights into how universities can support and shape entrepreneurial success among Gen Z. The findings are expected to offer practical guidance for higher education institutions in designing more effective entrepreneurship development strategies and creating learning environments that support the sustainability and growth of student-led MSMEs.

This study aimed to analyze the influence of five key variables, ESE, CE, EM, EL, and EIB, on the BP of Gen Z entrepreneurs at University X. The mediating role of EM was also examined to understand how it connects internal capacities and external institutional support to actual business outcomes. This study seeks to provide theoretical contributions by enriching the entrepreneurship literature specific to Gen Z within the university context. At the same time, it also offers practical insights for higher education institutions to develop more effective entrepreneurial development strategies. The urgency of this study lies in the need for a comprehensive understanding of these critical variables to enhance the BP of Gen Z within an increasingly competitive and dynamic campus entrepreneurial ecosystem.

METHODS

This study employs a quantitative research design involving three independent variables: namely Entrepreneurial Self-Efficacy (ESE), Campus Environment (CE), and Entrepreneurial Leadership (EL). The mediating variables consist of Entrepreneurial Motivation (EM) and Entrepreneurial Innovative Behavior (EIB), while the dependent variable examined in this study is Business Performance (BP). The operational definitions and indicators of each variable used in this study are presented in Table 1.

Table 1. Variable Operational Definition of Variable ESE, CE, EM, EL, EIB and BP

Variabel	Conceptual Definition	Indicator
Entrepreneurial Self-Efficacy (ESE)	ESE is an individual's belief in the ability to carry out and complete entrepreneurial tasks, including starting and managing a business independently (Widarno, 2021).	(Srimulyani et al. 2023): Individual Beliefs Action Cognitive Resource
Campus Environment (CE)	The campus environment in entrepreneurship refers to a higher education ecosystem that supports both physical and non-physical entrepreneurship education, influencing students' motivation to innovate and develop a business (Tishana et al., 2025).	(Aulia & Evanita, 2020): Infrastructure Curriculum Campus Activity (Bell & Bell, 2016): Human Resource
Entrepreneurial Motivation (EM)	Entrepreneurial motivation is an internal or external factor that drives and encourages individuals to start or develop a business to achieve financial success and seize opportunities (Kusa et al., 2021).	(Srimulyani et al. 2023): Financial Reason Social Reason Service Reason Self-fulfillment Reason
Entrepreneurial Leadership (EL)	Entrepreneurial leadership combines the ability to influence others with an entrepreneurial mindset and the ability to recognize and leverage opportunities to drive sustainable growth (Thongyai & Potipiroon, 2022).	(Srimulyani et al. 2023) : Able to Motivate Achievment Oriented Creative Flexible Persistent Take Risks Visions
Entrepreneurial Innovative Behavior (EIB)	Entrepreneurial innovative behavior is the act of recognizing problems, generating ideas, developing solutions, and being shaped by leadership, trust, and knowledge-sharing culture (Chaniago & Efawati, 2024).	(Srimulyani et al. 2023) : Opportunity Exploration Idea Generation Championing Application
Business Performance (BP)	Business performance refers to a company's achievements in financial and non-financial aspects that reflect its short- and long-term sustainability (Nguyen et al., 2021).	(Srimulyani et al. 2023) : Sales Volume Production Result Operating Profit Business Growth Business Development

This study used two types of data to support the research process. Primary data were collected via a questionnaire via Google Forms, covering six latent constructs: ESE, CE, EM, EL, EIB, and BP. Each construct consists of several indicators measured using a five-point Likert scale, with 1 representing strongly disagree, 2 disagree, 3 neutral, 4 agree, and 5 strongly agree. This scale was used to determine respondents' attitudes in a structured and measurable manner. Secondary data for this study, drawn from academic journals, statistical reports, and books, supported the theoretical framework and strengthened the interpretation of the findings. The

operational definitions and indicators of each variable are summarized in Table 1.

This study used a quantitative approach to obtain empirical evidence regarding the relationships between the variables. The population included 235 active students at University X in Surabaya, International Business Management as the highest major, which was currently running businesses. A purposive sampling technique was used with the following criteria: (1) active students at University X, (2) 5th or 7th semester in the odd semester of 2024, (3) running a business for

at least one year, and (4) not serving as CEO of their business. Based on the criteria, there are a total of 150 respondents who were selected. They were eligible because they were currently running businesses and participating in entrepreneurship-based learning on campus. The research questionnaire was distributed through student groups and direct messages to those who were categorized as eligible students. Participation was voluntary, with initial screening included in the form to ensure compliance with the criteria. Everyone was limited to one completion time to prevent duplicate entries. The informed consent section explained the purpose, procedures, voluntary nature, and withdrawal rights of the study. All responses were secured, and were only accessible to the research team. Secondary data for this study, drawn from academic journals, statistical reports, and books, supported the theoretical framework and strengthened the interpretation of the findings. To ensure the accuracy of the measurement instrument, the questionnaire was tested for validity and reliability.

The data were analyzed using partial least squares structural equation modeling (PLS-SEM) using SmartPLS version 4.1.1.1. This software was chosen because it is suitable for handling complex models, including multiple latent variables, and is effective for explaining research with moderate sample sizes (Hair & Alamer, 2022). The PLS model is divided into two components: an outer model, which assesses the relationship between indicators and their constructs, and an inner model that evaluates the relationships among the latent variables (Berber & Gašić, 2024). Second-order confirmatory factor analysis was applied using a two-stage approach. In the first stage, all dimensions and their indicators were analyzed to generate latent variable scores for each dimension. In the second stage, these scores served as indicators that formed a higher order of constructs, allowing for a more accurate assessment of multidimensional variables.

The analysis procedure consisted of three main steps. First, external model evaluation assessed construct validity and reliability by examining factor loadings, Average Variance Extracted (AVE), Cronbach's Alpha, and Composite Reliability. Second, the model was evaluated by analyzing structural relationships using R^2 values, f^2 effect sizes, and collinearity diagnostics using the Variance Inflation Factor (VIF). Third, hypotheses were tested using a bootstrapping procedure with 5,000 subsamples to determine the significance of the path

coefficients. The results revealed that all the constructs met the required thresholds for convergent validity, with factor loadings above 0.70, AVE above 0.50, also discriminant validity, and Composite Reliability above 0.70. The VIF values remained within the acceptable range, indicating no multicollinearity or common method bias detected in the model. Overall, the measurement and structural models were suitable for interpreting the relationships between all the variables.

MSME failures are often attributed to the inability to run a business effectively. Entrepreneurs with adequate skills and knowledge are more likely to achieve business success (Pisoni et al. 2020, Kasema, 2023). The experience of running a business is influenced by self-efficacy, institutional support, and motivation developed through entrepreneurial education (Athaya & Kurniawan, 2022). Various studies also confirm that EL and EIB play an important role in increasing the competitiveness and sustainability of MSMEs, especially among young entrepreneurs (Rusmana & Mulyadi, 2020) ; (Bagheri, 2017). Overall, the integration of personal factors, with the support of the CE, is important in encouraging increased BP. Reinforced by social cognitive theory, individual, cognitive, and environmental factors shape competence and success (Srimulyani et al. 2023). Entrepreneurial learning also contributes to shaping Gen Z entrepreneurial behavior, especially in building their interest and confidence (Arimbawa & Putri, 2023).

Entrepreneurial Self-Efficacy, Entrepreneurial Motivation & Business Performance

ESE describes an individual's belief in their ability to handle entrepreneurial tasks, such as searching for opportunities, calculated risks, and sustaining businesses (Eka et al. 2024). According to Social Cognitive Theory (SCT), a person's knowledge is influenced by cognitive processes that assess one's perceived capability (Agung et al. 2024). In the context of entrepreneurship, ESE is closely correlated with perceived behavioral control in the Theory of Planned Behavior (TPB). Which means behavior influenced by three main factors, namely attitude toward behavior, subjective norms, and perceived behavioral control (Dong & Chang, 2024). ESE represents perceived behavioral control in entrepreneurship, which is a strong predictor of entrepreneurial intentions and behavior.

Several studies confirm that ESE plays an important role in improving BP; individuals with high ESE have greater courage and perseverance in the face of business challenges (Newman et al. 2019; Klongthong et al. 2020). Research by (Caliendo et al. 2023) also shows that ESE contributes to improving start-up performance, such as business sustainability and innovation. When individuals perceive themselves as capable of identifying and managing entrepreneurial challenges, their readiness to manage ventures increases (Anisah et al. 2024). ESE not only influences behavior but also forms EM. Individuals with strong ESE tend to be confident in acting, as well as more motivated to survive and thrive in a dynamic business (Srimulyani & Hermanto, 2022).

EM is an internal stimulus that encourages individuals to actualize their capacity to achieve business goals (Saoula et al. 2023). Individual motivation influences entrepreneurs' strategic planning in identifying and realizing business opportunities (Caliendo et al. 2023). Studies by Rahmawati & Setiawan (2024) and Syahri et al. (2024) emphasized that EM plays a crucial role in determining a person's ability to face challenges, encourage innovation, perseverance, and adaptation in managing a business. Research has found a close relationship between EM and ESE, where strong motivation plays a role in strengthening an individual's confidence in their ability to run their business (Srimulyani & Hermanto, 2022). This study formulates three hypotheses that analyze the influence of ESE and EM on BP.

- H1: ESE significantly influences BP
- H2: ESE significantly influences EM
- H3: EM significantly influences BP
- H4: EM mediates the relationship between ESE and BP

Campus Environment, Entrepreneurial Motivation & Business Performance

Entrepreneurship-based universities foster the entrepreneurial spirit of students through curriculum, facilities, business resources, training, and actualization forums (Hapsari, 2018 ; Remipay, 2023). Research by Yuniasih et al. (2024) states that a supportive campus environment is not only limited to physical facilities such as study spaces and business incubation facilities, but also non-physical, such as an academic culture that encourages innovation, cooperation between students, and a learning curriculum that is oriented towards

real projects. Several studies confirm that universities with an atmosphere conducive to entrepreneurial development motivate students to run businesses and ultimately have an impact on BP (Tishana et al. 2025 ; Rocha & Fischer, 2022). This shows that CE plays a broader role beyond academic learning. A well-designed campus ecosystem can directly shape entrepreneurial confidence and commitment.

Studies by Puspitasari et al. (2024) state that entrepreneurship courses and effective learning processes have a significant effect on motivating entrepreneurship. EM is the drive of an individual to start a business and work to achieve their business goals (Yuniasih et al. 2024). The SCT of (Bandura, 1986 in Nwosu et al. 2022) asserts that personal aspects, such as an individual's motivation. This means that it plays as an important role in strengthening the impulse and intention to act on his or her efforts. In this context, WM is an internal driver that allows individuals to achieve financial and non-financial targets that ultimately have an impact on BP (Purbasari & Desy, 2024).

- H5: CE significantly influences BP
- H6: CE significantly influences EM
- H7: EM mediates the relationship between CE and BP

Entrepreneurial Leadership, Entrepreneurial Innovative Behaviour & Business Performance

EL is a leadership style that combines entrepreneurial spirit and managerial ability to encourage innovation, risk-taking, and the achievement of organizational vision (Nguyen et al. 2021). EL requires individuals to have passion, intelligence, courage, confidence, perseverance, fairness, and integrity (Li et al. 2020). In the context of entrepreneurship, effective leadership is the key to the success and growth of startups through strategic decision-making and a clear vision (Naushad, 2021). Several studies have found that EL has a significant effect on BP (Paudel, 2019 ; SI & Yusnaldi, 2020). Consistent with the perspective of social cognitive theory (Bandura, 1986 in Hoang et al. 2022) in assuming that EL functions as a driving factor for the emergence of EIB that triggers BP.

EIB is an individual's effort to generate, develop, and implement new ideas that improve products, services, or business processes (Laily & Ernawati, 2020). Continuous exploration and refinement of innovative ideas play a crucial role in achieving business success (Setiawan & Laily, 2018). Research by (Rumijati &

Hakim, 2023 ; Firdaus & Sakinah, 2023 ; Ercantan et al. 2024) proves that the EIB has a significant effect on BP depend on creativity and speed of adaptation. However, not all studies show the influence of EL on EIB and BP. Leaders often face challenges in inspiring teams to break existing routines and actively contribute innovative ideas (Bagheri, 2017). Innovation grows when each team member in business contributes to idea-sharing processes (Huang et al. 2022). This shows that the impact of EL in stimulating innovation and improving BP is shaped by organizational factors, such as organizational readiness and support. This study formulates four hypotheses:

H8: EL significantly influences BP

H9: EL significantly influences EIB

H10: EIB significantly influences BP

H11: EIB mediates the relationship between EL and BP

The conceptual framework in this study was built to show how five variables, namely ESE, CE, EM, EL, and EIB, work together in shaping the BP of Gen Z student entrepreneurs in a university. ESE and CE are placed as independent variables that can affect BP both directly and through EM as a mediating variable, since self-confidence and campus support alone are not enough without the motivational push that drives students to take real action in their businesses. On the other hand, EL is expected to influence BP through EIB as a mediator, because leadership qualities in entrepreneurship need to be expressed through concrete innovative actions

before they can make any meaningful difference in business outcomes. This framework draws on SCT and TPB, both of which suggest that human behavior is shaped by a combination of cognitive, environmental, and motivational factors that are working at the same time. Overall, this model reflects the real complexity that Gen Z entrepreneurs face as both students and business owners, where success is not driven by only a single factor alone but from how well their personal beliefs, campus support, leadership skills, and motivation come together in practice. The conceptual framework of this study is shown in Figure 1.

RESULTS

Description of Respondent

Table 2 presents the profile of respondents' characteristics based on gender, semester, and position in the student business team. Based on the data, most of the respondents were women (79 people), slightly more than men (71 people). The distribution consists of 5th semesters (92 students), while 7th semester students are 58 people. Meanwhile, based on the positions, COO position is 49 people, CMO is 42 people, CFO is 40 people, and the position of CTO is 19 people. In general, the respondent profile reflects a diverse representation across gender, academic stage, and business role.

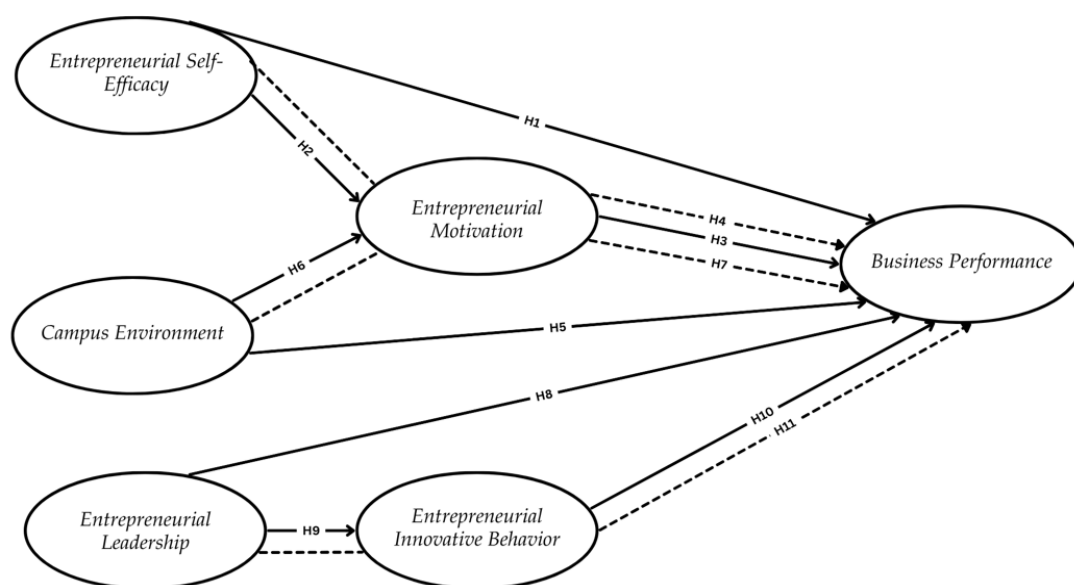


Figure 1. Conceptual Framework of the Influence of ESE, CE, EL, EM, and EIB on BP

First Order Test

The validity and reliability of the constructs in the model were measured by three statistical stages, the reliability of the construct assessed using Composite Reliability (CR) and Cronbach's alpha, while validity was evaluated through Convergent Validity (CV) and Discriminant Validity, where Average Variance extracted (AVE) was used to determine convergent validity (Babangida et al. 2022). The validity and reliability of the measurement model, as presented in Table 3, show that all reflective indicators have outer loading values above 0.70, while the AVE for each construct exceeds 0.50. These results confirm that the model meets the criteria for convergent validity (Sefnedi et al. 2020). Furthermore, both CR and Cronbach's Alpha values for all constructs were above 0.60, showing strong internal consistency and satisfactory reliability across their latent constructs (Hair et al. 2017). This means that each construct can explain most of the variance of its indicators, and the indicators within a single construct are consistent in measuring the same conceptual dimension. Therefore, the measurement model is considered fit at the first-order construct level.

The discriminant validity of the constructs was also well established. The cross-loading test results show that each reflective indicator has the highest loading on its corresponding construct compared to others, which is consistent with the Fornell–Larcker criterion (Rasoolimanesh, 2022). These results show that each construct has a clear and separate boundary from the others, indicating sufficient discriminant validity within the measurement model. In addition, the measurement

model also includes two formative constructs, namely, CE and BP, which require a different evaluation approach. The formative constructs of CE and BP were evaluated through outer loading and VIF to detect potential multicollinearity. As shown in Table 4, all outer loading values exceed 0.70, confirming that each indicator makes a significant and relevant contribution to its respective formative construct. In addition, all VIF values fall below the recommended threshold of 5.0 (Hair et al. 2017), indicating that no multicollinearity issues exist and the formative indicators are statistically independent. Consequently, both formative constructs demonstrate strong validity and reliability in representing their underlying dimensions.

Second Order Test

The second-order model shows strong measurement validity, characterized by a loading factor of more than 0.70 across all dimensions, reflecting a significant contribution to the higher-order construct. This result shows that each dimension adequately captures the underlying concept of its respective higher-order construct in the hierarchical model. Convergent validity is confirmed by AVE values exceeding 0.50, while Cronbach's Alpha and CR values of more than 0.60 confirm reliable internal consistency. Together, these three criteria verify that the measurement model fulfills the required standards for both validity and reliability at the second-order level. These findings support the assumption that the latent constructs are validly and reliably measured within the framework of the hierarchical model being used, providing a solid basis for further structural analysis.

Tabel 2. Descriptive analysis of respondent based on gender, semester and position

Profile	Classification	Frequency	Percentage
Gender	Man	71	47.33%
	Woman	79	52.67%
Semester	7	58	38.67%
	5	92	61.33%
Position	CMO	42	28%
	CFO	40	26.67%
	COO	49	32.67%
	CTO	19	12.67%

Table 3. Factor loadings for measuring indicators of ESE, EL, EM, EIB

Constructs	Item	Outer Loading	Cronbach's Alpha	CR	AVE
Entrepreneurial Self-Efficacy (ESE)					
Individual Beliefs (IB)	IB1	0.872	0.676	0.861	0.756
	IB2	0.867			
Action (A)	A1	0.879	0.687	0.865	0.762
	A2	0.866			
Cognitive Resource (CR)	CR1	1.000			
Entrepreneurial Leadership (EL)					
Able to Motivate (AM)	AM1	0.937	0.863	0.936	0.879
	AM2	0.938			
Achievment Oriented (AO)	AO1	0.923	0.817	0.916	0.845
	AO2	0.916			
Creative (C)	C1	0.934	0.862	0.935	0.878
	C2	0.940			
Flexible (F)	F1	0.931	0.840	0.926	0.862
	F2	0.925			
Persistent (P)	P1	0.924	0.842	0.927	0.864
	P2	0.934			
Risk Taking (RT)	RT1	0.930	0.843	0.927	0.864
	RT2	0.929			
Visionary (V)	V1	0.943	0.868	0.938	0.883
	V2	0.936			
Entrepreneurial Motivation (EM)					
Financial Reason (FR)	FR1	1.000			
Social Reason (SCR)	SCR1	1.000			
Service Reason (SR)	SR1	1.000			
Self-fulfillment Reason (SFR)	SFR1	0.898	0.789	0.904	0.825
	SFR2	0.919			
Entrepreneurial Innovative Behavior (EIB)					
Opportunity Exploration (OE)	OE1	0.893	0.730	0.881	0.787
	OE2	0.882			
Idea Generation (IG)	IG1	0.928	0.832	0.922	0.856
	IG2	0.923			
Championing (CM)	CM1	0.911	0.803	0.911	0.836
	CM2	0.917			
Application (AP)	AP1	0.905	0.796	0.907	0.831
	AP2	0.917			

As shown in Table 6, the Fornell-Larcker criterion indicates that the square root of each construct's AVE exceeds its inter-construct correlations, confirming discriminant validity (Weng et al. 2015). This shows that each construct shares more variance with its indicators than with any other construct in the model. Likewise, the HTMT ratio in Table 7 shows that all values are below the requirement of 0.90, indicating no

excessive inter-construct correlation and the absence of multicollinearity problems (Henseler et al. 2016). This further supports the conclusion that each construct in the model is empirically distinct and does not overlap with others. Overall, these results verify the adequacy of the second-order measurement model for the structural analysis.

Table 4. Formative Indicator's Variance Inflation Factor (VIF) for CE and BP

Formative Indicators – CE	Outer Loading	VIF
IF1	1.000	1.000
CRM1	0.935	3.607
CRM2	0.928	3.350
CRM3	0.910	2.817
CA1	0.921	1.888
CA2	0.915	1.888
HR1	0.918	1.940
HR2	0.924	1.940
Formative Indicators – BP		
SV1	0.893	1.358
SV2	0.845	1.358
PR1	1.000	1.000
OP1	0.912	1.708
OP2	0.901	1.708
BG1	0.889	1.343
BG2	0.845	1.343
BD1	1.000	1.000

Table 5. Second-order factor loadings, cronbach's alpha, CR and AVE for All Variables

Constructs		Outer Loading	Cronbach's Alpha	CR	AVE
ESE	Individual Beliefs (IB)	0.892	0.827	0.897	0.744
	Action (A)	0.894			
	Cognitive Resource (CR)	0.797			
CE	Infrastructure (IF)	0.762	0.887	0.923	0.75
	Curriculum (CRM)	0.891			
	Campus Activity (CA)	0.901			
	Human Resource (HR)	0.902			
	Able to Motivate (AM)	0.867			
EL	Achievement Oriented (AO)	0.904	0.965	0.971	0.825
	Creative (C)	0.924			
	Flexible (F)	0.923			
	Persistent (P)	0.907			
	Risk Taking (RT)	0.906			
	Visionary (V)	0.925			
	Financial Reason (FR)	0.801	0.786	0.861	0.608
EM	Social Reason (SCR)	0.733			
	Service Reason (SR)	0.749			
	Self-fulfillment Reason (SFR)	0.832			
EIB	Opportunity Exploration (OE)	0.893	0.915	0.94	0.798
	Idea Generation (IG)	0.922			
	Championing (CM)	0.905			
BP	Sales Volume (SV)	0.906	0.922	0.942	0.764
	Production Result (PR)	0.846			
	Operating Profit (OP)	0.930			
	Business Growth (BG)	0.907			

Note: Entrepreneurial Self-Efficacy (ESE); Campus Environment (CE); Entrepreneurial Motivation (EM); Entrepreneurial Leadership (EL); Entrepreneurial Innovative Behavior (EIB); Business Performance (BP)

The R-square results in Table 8 indicate that the model can provide an adequate explanation, where key variables explain significant variations in BP, EM, and EIB. Further effect size findings indicate that the strongest contribution comes from internal psychological factors, specifically ESE and EM. Meanwhile, EL primarily strengthens EIB rather than directly improving business outcomes. In contrast, CE and EL show smaller direct effects on performance, indicating that their influence occurs more effectively through indirect mechanisms. Overall, these combined results confirm that ESE, EM, and EIB play the most substantial role in boosting BP of Gen Z in the university ecosystem. The Effect Size (f^2) Result of ESE, CE, EM, EL, EIB on BP, EM and EIB in Table 9.

Table 10 shows that ESE plays a significant role in influencing both EM and BP among Gen Z entrepreneurs. This result is consistent with the SCT and the TPB (Bandura, 1991), which suggest that self-efficacy influences perceived behavioral control and encourages individuals to remain persistent when facing difficulties. Students with stronger ESE often show confidence, determination, and adaptability in handling risks and exploring opportunities. They are also more capable of setting clear business goals and following through on them (Liu et al. 2024 ; Hariyadi et al. 2023). Similar findings from Caliendo et al. (2023) and Srimulyani & Hermanto (2022) highlight that belief in entrepreneurship contributes to improved BP through perseverance and self-regulation.

Table 6. Discriminant Validity - Fornell-Larcker Criterion for BP, CE, EIB, EL, EM, ESE

	BP	CE	EIB	EL	EM	ESE
Business Performance (BP)	0.874					
Campus Environment (CE)	0.494	0.866				
Entrepreneurial Innovative Behavior (EIB)	0.603	0.452	0.893			
Entrepreneurial Leadership (EL)	0.46	0.401	0.604	0.908		
Entrepreneurial Motivation (EM)	0.677	0.479	0.723	0.526	0.78	
Entrepreneurial Self-Efficacy (ESE)	0.681	0.496	0.75	0.612	0.66	0.862

Table 7. Discriminant Validity – Heterotrait-monotrait for BP, CE, EIB, EL, EM, ESE

	BP	CE	EIB	EL	EM	ESE
Business Performance (BP)						
Campus Environment (CE)	0.535					
Entrepreneurial Innovative Behavior (EIB)	0.656	0.496				
Entrepreneurial Leadership (EL)	0.485	0.431	0.641			
Entrepreneurial Motivation (EM)	0.784	0.563	0.838	0.595		
Entrepreneurial Self-Efficacy (ESE)	0.776	0.576	0.859	0.682	0.796	0.862

Table 8. Table of R-Square (R^2) Result for BP, EIB and EM

	R-Square	R-Square Adjusted
Business Performance (BP)	0.568	0.553
Entrepreneurial Innovative Behavior (EIB)	0.364	0.360
Entrepreneurial Motivation (EM)	0.466	0.459

Table 9. Table of Effect Size (f^2) Result of ESE, CE, EM, EL, EIB on BP, EM and EIB

	BP	EIB	EM
Entrepreneurial Self-Efficacy (ESE)	0.123		0.444
Campus Environment (CE)	0.030		0.057
Entrepreneurial Motivation (EM)	0.137		
Entrepreneurial Leadership (EL)	0.001	0.574	
Entrepreneurial Innovative Behavior (EIB)	0.000		

Table 10. Hypothesis Test Results Among ESE, CE, EM, EL, EIB and BP

Effect	Coefficient	STDEV	T-Statistic	P-Value	Information
ESE → BP	0.590	0.129	4.564	0.000	H1: Accepted
ESE → EM	0.561	0.063	8.910	0.000	H2: Accepted
EM → BP	0.372	0.098	3.790	0.000	H3: Accepted
ESE → EM → BP	0.209	0.062	3.379	0.001	H4: Accepted
CE → BP	0.210	0.072	2.909	0.004	H5: Accepted
CE → EM	0.201	0.082	2.436	0.015	H6: Accepted
CE → EM → BP	0.075	0.035	2.143	0.032	H7: Accepted
EL → BP	-0.014	0.103	0.229	0.819	H8: Rejected
EL → EIB	0.604	0.066	9.114	0.000	H9: Accepted
EIB → BP	0.002	0.133	0.015	0.988	H10: Rejected
EL → EIB → BP	0.001	0.082	0.014	0.989	H11: Rejected

Note: Entrepreneurial Self-Efficacy (ESE); Campus Environment (CE); Entrepreneurial Motivation (EM); Entrepreneurial Leadership (EL); Entrepreneurial Innovative Behavior (EIB); Business Performance (BP)

This study further confirms that ESE not only directly influences BP but also indirectly affects it through EM; motivation becomes the psychological mechanism that translates belief into entrepreneurial action. Students with stronger self-efficacy tend to be more proactive and resilient, reinforcing that entrepreneurial performance is driven by both competence and mindset. As noted by Shengyao et al. (2024) and Huang & Kee (2024), EM mediates cognitive and emotional processes in goal setting and effort investment. Without motivation, efficacy may lose stability under pressure (Sarman et al. 2025 ; Srimulyani et al. 2023). Thus, universities need to strengthen students' psychological capital through mentoring, experiential learning, and incubation programs that foster confidence and personal purpose. This combination of efficacy and motivation can help develop a resilient and sustainable entrepreneurial character.

CE also emerged as a significant factor enhancing EM and BP, confirming the pivotal role of the university ecosystem. CE encompasses physical and non-physical support systems that foster creativity, collaboration, and entrepreneurial engagement (Zhong et al. 2022 ; Bell & Bell, 2016). In SCT, CE acts as an external enabler that influences learning through modelling, reinforcement, and social interaction. Students exposed to entrepreneurial environments tend to adopt entrepreneurial values and change them into consistent behavior and sustained commitment. Activities such as seminars, business training, competitions, and collaboration projects create adaptability, exposure, and strategic thinking that support entrepreneurial persistence (Nainggolan & Harny, 2020 ; Hardi et al. 2020 ; Yuniasih et al. 2024).

The results also confirm that CE indirectly affects BP through EM, indicating that motivation acts as a bridge between institutional support and performance outcomes (Wu & Mao, 2020 ; Irwanto & Ie, 2023:). Students who actively participate in campus entrepreneurship programs tend to show higher commitment and enthusiasm. The BP construct row incorrectly lists the "Cognitive Resource (CR)" dimension, which actually belongs to ESE, and the outer loading value for SR is written as "0749" without a decimal point. The BP construct row incorrectly lists the "Cognitive Resource (CR)" dimension, which belongs to ESE, and the outer loading value for SR is written as "0749" without a decimal point. the BP construct row incorrectly lists the "Cognitive Resource (CR)" dimension, which actually belongs to ESE, and the outer loading value for SR is written as "0749" without a decimal point. and resilience in managing their ventures. This result suggests that universities should function not only as academic centers but also as integrated entrepreneurial ecosystems. Through structured programs, mentorship, and interdisciplinary collaboration, higher education can cultivate an experiential and motivational culture of entrepreneurship. Theoretically, these studies position CE as a multidimensional construct of structural, social, and psychological support that enhances entrepreneurial outcomes.

However, the findings show that EL does not have a significant direct effect on BP, indicating that leadership capabilities among Gen Z remain in an early developmental phase. While leadership is conceptually linked to innovation and competitiveness (SI & Yusnaidi, 2020 ; Sarwoko, 2020), its effectiveness depends on individual and organizational readiness (Rokhanawati

et al. 2024 ; Nguyen et al. 2021). Nevertheless, EL demonstrates a strong influence on EIB, which aligns with prior studies showing that leadership drives creativity, opportunity exploration, and risk-taking behavior (Iqbal et al. 2022 ; Akbari et al. 2021 ; Bagheri et al. 2022). However, the insignificant impact of EIB on BP suggests that innovation among Gen Z has not yet reached the level of consistent implementation. Consequently, it has not been capable of enhancing performance outcomes (Effendy & Sukmarani, 2022 ; Inegbedion, 2022 ; Jamaï et al. 2021).

The mediating effect of EIB between EL and BP was not significant, indicating that innovation remains largely conceptual rather than operational in this context. These results are consistent with previous studies suggesting that innovation improves business outcomes only when the organizational system is ready to execute and sustain change (Mukson et al. 2021 ; Huang et al. 2022 ; Srimulyani et al. 2023). As Kadar et al. (2023) and Sulistyowati (2018) emphasize, EL acts as a catalyst for innovation only when supported by a stable structure and collective capacity. Gen Z is still in the early stages of business, limited experience, and unstable work systems inhibit innovation from producing tangible business gains. Therefore, universities should strengthen experiential leadership development to support the effective implementation of innovation in real contexts.

The discussion indicates that entrepreneurial success among Gen Z entrepreneurs is not determined by isolated factors but by the dynamic interaction between individual cognition, motivation, and environmental support. The strength of ESE and the conduciveness of the campus ecosystem jointly form the psychological and structural foundation for business growth. Meanwhile, leadership and innovation are identified as important but still developing dimensions that require stronger experiential support. These findings indicate that entrepreneurship education should be treated as a multidimensional process that builds motivation, confidence, and leadership within a supportive institutional setting. By positioning universities as incubators for both competence and character, this study stresses the importance of combining collaborative learning, personal belief systems, and practical entrepreneurial activities to sustain Gen Z entrepreneurship in the long term.

Managerial Implications

This study has important managerial implications for universities entrepreneurship among their students, especially Gen Z. Certainly, this study found that motivation is a major determining factor and plays a significant role in increasing student confidence and university support. This will eventually result in better business outcomes for Gen Z entrepreneurs. For this reason, universities should focus more on prioritizing facilities and intervention strategies that can help strengthen student' self-confidence, psychological readiness, and practical skills. Moreover, collaborative learning environment, hands-on experimentation, and exposure to real-world situation are important for fostering stronger entrepreneurial behavior.

On the topic of capacity development, universities can expand curriculum delivery to provide not only technical business knowledge but also systematically build ESE through real business practice. This development requires structured support, such as long-term incubation, mentoring, and project-based learning, to guide students in developing their businesses. In addition, universities should provide opportunities for students to practice making decisions under real-world pressure. This study shows that the roles of EL and EIB are still low, indicating weakness of these competencies among students. Therefore, development programs must be more inclusive for all students, not limited to specific roles, such as CEO. Role rotation and managerial simulations should be implemented to provide experience in solving business challenges and decision-making in each student's business.

From a university perspective, the results suggest that university executives must design a stronger entrepreneurial ecosystem, particularly in terms of structural support, intensity and quality of mentoring, and more effective learning. Strategic planning workshops and performance evaluation sessions are needed at each stage of a student's business to strengthen ESE. Universities can also encourage student motivation by implementing open access to external business networks, reward systems, and long-term engagement with industry practitioners. This effort can help improve the sustainability of student ventures, support more stable business persistence and execution, and minimize the chances of team breakdown. Through these initiatives, universities can play a stronger role in developing resilient and capable Gen Z entrepreneurs.

Despite its contributions, this study has several limitations. The use of purposive sampling from a single entrepreneurial-oriented university may limit the generalizability of the findings, as university environments have their own characteristics. The use of self-report questionnaires may also create the possibility of response bias, although steps such as anonymity and eligibility screening were implemented. Moreover, since the data were collected at only one point in time, the study can not analyze how business behavior or venture development changes over time. The absence of objective business performance indicators, along with external factors such as access to capital, family support, and prior business experience, also limits the model's explanatory power. Future studies should address these limitations by involving a larger sample from other universities and incorporating more multi-source business metrics to produce objective results.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The results of this study indicate that ESE and CE are the two most influential factors in the BP of Gen Z. EM also plays a crucial role because it connects students' internal beliefs with real business opportunities. Overall, these results show that self-confidence, persistence, and the ability to deal with challenges can develop more effectively within a supportive CE that offers adequate facilities and access to experienced mentors. With motivation, tangible business outcomes become more achievable in the early stages of venture development. On the other hand, the modest effect of EL and EIB indicates that leadership-based innovation among Gen Z entrepreneurs is still developing. Even so, the findings provide insight into how mindset, motivation, and teamwork shape BP. This study contributes to the literature by showing how multiple dimensions collectively shape BP in the context of Gen Z. Overall, this finding highlights the importance of psychological readiness and practical skills in building sustainable ventures among Gen Z entrepreneurs in university-based ventures.

Recommendations

Future research should expand the scope of this study, particularly by involving respondents from other universities to increase generalizability. For the research

system itself, a longitudinal study is recommended because it is expected to help researchers observe the development of students' skills over time, especially in leadership and innovative thinking. In addition, more detailed BP indicators, such as revenue, cost structure, and customer growth, are also recommended to provide deeper insights. Qualitative approaches such as short interviews and case study analysis can be effectively used to strengthen the research. These methods help a deeper exploration of aspects such as leadership, teamwork, and innovation within teams. Integrating this method is expected to provide richer and more comprehensive insights that better reflect the real conditions of Gen Z entrepreneurship in the university ecosystem.

Furthermore, practitioners are expected to design entrepreneurship programs focused on structured mentoring, effective learning, and real business responsibilities for all student team members to ensure equitable experience. More exposure to external business networks, inter-business collaboration, training of team leadership skills, and superior platforms to encourage student business development must be further enhanced to strengthen each student's decision-making and strategic thinking skills. Future educational program designs should focus on promoting student motivation, facilitating long-term incubation, and implementing reward systems. Universities should also consider conducting regular evaluations of students' BP as part of the learning process so that students can reflect on their progress and make improvements to their strategies. With these efforts, universities can create a more supportive entrepreneurial environment for Gen Z entrepreneurs.

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