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# Impact of Experiential Learning and Entrepreneurial Orientation on Student Start-up Business Performance with Social Network Moderation

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## Abstract

Entrepreneurship has become a key driver of economic growth and innovation. Universities play an important role in developing students' entrepreneurial competencies, but the factors influencing the success of students' start-up businesses must be better understood. This study aims to investigate the influence of experiential learning and entrepreneurial orientation on college students' start-up business performance and examine the moderating role of social networks. Using a quantitative research design, data were collected from a sample of 150 entrepreneurial students at an Indonesian university through a questionnaire. The data was analyzed using the Structural Equation Modeling (SEM) technique with SmartPLS. Results showed that experiential learning ($\beta = 0.352$, $p < 0.001$) and entrepreneurial orientation ($\beta = 0.417$, $p < 0.001$) positively and significantly influenced students' start-up business performance. The social network was found to moderate the relationship between entrepreneurial orientation and business performance ($\beta = 0.183$, $p < 0.05$). This study concludes that combining experiential learning, entrepreneurial mindset development, and social capital fostering is essential to nurturing successful young entrepreneurs. The findings provide valuable insights for universities in designing effective entrepreneurship education programs.

## How to Cite

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## INTRODUCTION

Entrepreneurship has long been recognized as an engine of economic growth and job creation (Ehrlich et al., 2017). In today's knowledge-based economy, the role of entrepreneurship is increasingly crucial in driving innovation, competitiveness, and sustainable development (Sánchez-García et al., 2022).. Universities, as centers of knowledge creation and dissemination, have an important responsibility in developing entrepreneurial competencies among students (Isac et al., 2023). Entrepreneurship education in higher education not only aims to produce graduates who are capable of creating jobs, but also equips them with the skills, mindset, and networks needed to succeed in a dynamic economy (Lin et al., 2023).

The increasing phenomenon of student-run start-ups reflects the growing entrepreneurial spirit among the younger generation (Santana Vega et al., 2016). This phenomenon is particularly evident in Indonesia, where university students are increasingly establishing technology-based start-ups, social enterprises, and innovative businesses across various sectors (Tambunan, 2007). Recent data shows that student start-ups in Indonesia have demonstrated varying levels of performance, with some achieving significant growth while others struggle to sustain their operations beyond the initial phase (Feria & Amado, 2019). This disparity in performance outcomes highlights the critical need to understand what factors contribute to successful student entrepreneurship ventures (Landier et al., 2009; Safitri et al., 2023).

The performance of student start-up businesses is influenced by multiple interconnected factors that extend beyond traditional business metrics (Dana et al., 2022). While some student entrepreneurs achieve remarkable success in terms of revenue generation, market penetration, and scalability, others face challenges in translating their innovative ideas into viable business models (Widoyoko et al., 2023). This variation in performance outcomes creates an urgent need to identify and understand the key determinants that drive entrepreneurial success among university students (Yang & Yu, 2022).

Students are increasingly interested in exploring business opportunities, applying their academic knowledge, and creating a positive impact through innovative start-ups (Wit et al., 2021). Nonetheless, starting and running a start-up business is not free from challenges, especially for university students who may still have limited experience and resources (Wit et al., 2021). Therefore, it is important to understand the factors contributing to student start-up success, design effective entrepreneurship education programs, and provide appropriate support.

Experiential learning has emerged as a promising approach to entrepreneurship education (Pais Zozimo et al., 2023). In contrast to traditional learning methods that focus on knowledge transfer, experiential learning emphasizes the active involvement of learners in the learning process through hands-on experiences (Pérez-Rivas et al., 2023). In the context of entrepreneurship, experiential learning can include various activities, such as business simulations, field projects, internships, or start-up creation (Yan et al., 2023). Previous research shows that experiential learning can enhance entrepreneurial competencies, such as the ability to recognize opportunities, think creatively, and take risks (Isac et al., 2023; Pais Zozimo et al., 2023).

Entrepreneurial orientation, which includes the dimensions of innovativeness, proactiveness, and risk-taking, has been identified as a key factor influencing business performance (Benazzouz, 2019; Doni & Fiameni, 2024).. Companies with a strong entrepreneurial orientation tend to be more adaptive, explorative, and courageous in the face of market uncertainty (Setiawan et al., 2024). In the context of start-ups, entrepreneurial orientation can help founders identify and capitalize on new opportunities, create innovative products or services, and outperform competitors (Date, 2018). Several empirical studies

have found a positive relationship between entrepreneurial orientation and start-up performance, both in terms of sales growth, profitability, and survival (Aliedan et al., 2022; Yin et al., 2021).

Social networks also play an important role in entrepreneurship (Jasmine, 2014; Obi-Anike et al., 2022). Social networks refer to a person's interpersonal relationships, which can provide access to valuable information, resources, and support (Thomas & Srebrenka, 2023). For start-up founders, social networks can provide advice, feedback, recommendations, or potential customers (Lizzeth & Mendoza, 2024). Previous research shows that a strong and diverse social network can increase the chances of recognizing business opportunities, accessing capital, and accelerating start-up growth (Chen et al., 2023; Simmou et al., 2023).

Despite the growing body of literature on entrepreneurship education and student ventures, significant research gaps remain that this study aims to address. First, while previous studies have examined experiential learning and entrepreneurial orientation as separate factors influencing business performance, limited research has investigated their combined effect on student start-up performance within a comprehensive theoretical framework. Most existing studies focus on experiential learning or entrepreneurial orientation in isolation, missing the synergistic effects that may emerge when these factors work together.

Second, the moderating role of social networks in the relationship between experiential learning, entrepreneurial orientation, and start-up performance has been largely unexplored, particularly in the context of university students. While social network theory has been applied to general entrepreneurship research, its specific application as a moderating variable in student entrepreneurship remains underdeveloped. This represents a significant theoretical and empirical gap that limits our understanding of how social capital influences the effectiveness of experiential learning and entrepreneurial orientation in driving start-up success.

Third, most entrepreneurship research has been conducted in developed countries with established entrepreneurial ecosystems. There is a notable lack of empirical studies examining these relationships in emerging economies like Indonesia, where the entrepreneurial landscape, cultural context, and institutional support systems differ significantly from Western contexts. This geographical and cultural gap limits the generalizability of existing findings to developing countries where student entrepreneurship is rapidly growing.

This study provides an original contribution by developing and testing an integrated theoretical model that examines the simultaneous effects of experiential learning and entrepreneurial orientation on student start-up business performance, while investigating the moderating role of social networks. The study introduces a novel three-way interaction framework that has not been previously explored in student entrepreneurship literature.

This integrated approach is necessary because entrepreneurial success is a complex phenomenon that cannot be fully understood through single-factor analysis. By examining these variables together, this study provides a more comprehensive understanding of the entrepreneurial ecosystem that surrounds student ventures. The moderating effect of social networks is significant to investigate because it helps explain why some students with similar levels of experiential learning and entrepreneurial orientation achieve different performance outcomes. Understanding these moderating effects can inform more effective entrepreneurship education programs and support systems for student entrepreneurs.

However, not many studies have explored how social networks can moderate the relationship between experiential learning, entrepreneurial orientation, and start-up business performance in the context of university students.

Based on the description above, this study aims to provide a more comprehensive understanding of the factors that influence the

performance of student start-up businesses. Specifically, the objectives of this study are: (1) Examine the effect of experiential learning on college students' start-up business performance; (2) Analyze the effect of entrepreneurial orientation on college students' start-up business performance; and (3) Investigate the moderating role of social networks in the relationship between experiential learning, entrepreneurial orientation, and college students' start-up business performance.

By investigating the relationship between these variables, this study is expected to provide valuable insights for universities in designing effective entrepreneurship education programs and for students who want to start and grow their start-ups. The findings of this study may also contribute to the development of entrepreneurship theory, particularly in the context of university students and early-stage start-ups.

## METHODS

This study adopted a quantitative approach with a survey research design. The quantitative approach was chosen because it is suitable for testing the relationship between clearly defined variables and measuring the effect of one variable on another (Di Minin et al., 2022). The survey design allows standardized data collection from a large sample to generalize the findings to a broader population. (Benedetti et al., 2022). This design is also appropriate for testing research hypotheses involving the relationships between experiential learning, entrepreneurial orientation, social networks, and student start-up business performance.

Structural Equation Modelling (SEM) with the Partial Least Squares (PLS) approach is justified for several methodological reasons. Although the conceptual model appears relatively simple with two direct relationships, SEM is appropriate for this study because: (1) The research involves latent constructs (experiential learning, entrepreneurial orientation, social networks, and start-up performance) that cannot be directly observed and require multiple indicators for measurement; (2) The study examines both direct effects and moderating effects simultaneously within a comprehensive theoretical framework; (3) SEM allows for the assessment of measurement model quality (convergent validity, discriminant validity, and reliability) before testing structural relationships; and (4) The moderating analysis requires interaction terms that are better handled through SEM's ability to model complex relationships.

Alternative analysis techniques, such as multiple regression, would be inadequate because they cannot correctly handle latent constructs with measurement error or assess the quality of construct measurement. Furthermore, traditional regression approaches would require separate analyses for main and moderating effects, potentially leading to fragmented findings.

The moderating effect of social networks was specifically tested using the product indicator approach within the PLS-SEM framework (Fatema et al., 2022). This technique creates interaction terms between the predictor variables (experiential learning and entrepreneurial orientation) and the moderating variable (social networks). The product indicator approach is particularly suitable for PLS-SEM because it can handle non-normal data distributions and complex interaction effects without requiring the large sample sizes for covariance-based SEM.

The research population comprises students in educational technology courses at the PGRI Mpu Sindok University. Participant selection criteria include students who actively use technology in their learning and are willing to participate in the research survey. One hundred ninety-seven students from various study programs enrolled in the educational technology course participated in the study. Demographic data of participants included age, gender, and study program. Participants were asked to complete a questionnaire distributed via an online platform, with instructions to fill out the questionnaire honestly and promptly.

The target population in this study was PGRI Mpu Sindok University students involved in start-up businesses. Inclusion criteria for participants included: (1) registered as active students at Universitas PGRI Mpu Sindok; (2) currently running a start-up business; and (3) willing to participate in this study. No exclusion criteria were applied. Using the purposive sampling technique, 150 students who met the criteria were selected as the research sample. Purposive sampling allows the selection of participants who are information-rich and relevant to the research objectives (Ames et al., 2019). This sample size is considered adequate for Structural Equation Modeling (SEM) analysis using a rule of thumb of 10 times the most significant number of structural paths leading to any latent variable in the model (Zagaria et al., 2023).

Data were collected using a structured questionnaire consisting of four sections: experiential learning, entrepreneurial orientation, social network, and start-up business performance. The questionnaire was developed based on an extensive literature review and adapted to the context of this study. All items were measured using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

The content validity of the questionnaire was enhanced through expert review by a panel of experts consisting of academics and entrepreneurship practitioners. Pilot testing was conducted on 30 students to assess the

**Table 1.** Operational Definitions and Measurement Dimension

| Variable/ Construct | Operational Definition | Dimensions | Number of Items | Source | Scale |
|---|---|---|---|---|---|
| Experiential Learning (X1) | Learning through hands-on experiences, reflection, and active experimentation in entrepreneurial contexts | Concreteness, Active Experimentation, Reflection | 12 items | Adapted from (Watkins et al., 2012) | 5-point Likert |
| Entrepreneurial Orientation (X2) | Firm-level strategic orientation is characterized by innovativeness, proactiveness, and risk-taking behaviour | Innovation, Proactivity, Risk-taking | 15 items | Adapted from (Yuan et al., 2023) | 5-point Likert |
| Social Network (Z) | Interpersonal relationships that provide access to information, resources, and support for entrepreneurial activities | Network Strength, Network Diversity | 10 items | Adapted from (Fomin et al., 2024) | 5-point Likert |
| Start-up Business Performance (Y) | Outcome measures of start-up success, including financial and non-financial indicators | Sales Growth, Profitability, Viability | 9 items | Adapted from Altmann & (Altmann & Correio, 2020; Prapanca & Kumalasari, 2023) | 5-point Likert |

questionnaire items' clarity, relevance, and comprehension. Based on the feedback received, some minor revisions were made to improve the quality of the instrument. The reliability of the questionnaire was evaluated using Cronbach's alpha, with an acceptable threshold value of 0.70 (Willems et al., 2023).

Data collected through the online survey was checked for completeness and consistency. Incomplete or inconsistent responses were excluded from further analysis. The primary data analysis technique used in this study was Structural Equation Modelling (SEM) with a Partial Least Squares (PLS) approach using SmartPLS 3.0 software (Sakaria et al., 2023). PLS-SEM was chosen because of its ability to handle complex models with many latent variables and indicators, as well as its resistance to data normality problems (Mohammed et al., 2022).

Data analysis was conducted following the two-step approach recommended by (de Morais Almeida et al., 2022). The first step involved evaluating the measurement model to assess convergent validity, discriminant validity, and construct reliability. Convergent validity was assessed by examining the outer loading (>0.70) and Average Variance Extracted (AVE >0.50). Discriminant validity was evaluated using the Fornell-Larcker criteria and the Heterotrait-Monotrait Ratio (HTMT < 0.90). Construct reliability was measured by Composite Reliability (CR > 0.70) (Hair et al., 2019).

The second step involves evaluating the structural model to test the research hypotheses. The significance of the structural paths was assessed using a bootstrapping procedure with 5,000 subsamples (Nguyen et al., 2019).. The coefficient of determination ($R^2$), effect size ($f^2$), and relevance prediction ($Q^2$) were also examined to assess the predictive power of the model. The moderating effect of social networks was tested with the product indicator approach (Fatema et al., 2022).. Missing data were handled using a listwise deletion technique, while outliers were identified using Mahalanobis distance values and excluded from the analysis (Heymans & Twisk, 2022).

This study has obtained ethical approval from the Research Ethics Committee of Universitas PGRI Mpu Sindok. All participants gave written consent before participating in this study. Confidentiality and anonymity of respondents were strictly maintained throughout the research process.

## RESULT AND DISCUSSION

Data analysis revealed some important findings regarding the influence of experiential learning (X1 ) and entrepreneurial orientation (X2 ) on student start-up business performance (Y), as well as the moderating role of social networks (Z) in the relationship.

Before testing the research hypothesis, a measurement model evaluation was conducted to assess construct validity and reliability. The analysis results show that all indicators have an outer loading above 0.70, indicating adequate convergent validity (Zhang et al., 2020). All constructs' Average Variance Extracted (AVE) values were above 0.50, ranging from 0.672 to 0.805, supporting convergent validity (Table 1). Discriminant validity was assessed using the Fornell-Larcker criterion and the Heterotrait-Monotrait ratio (HTMT). The square root of the AVE of each construct was higher than the correlations with other constructs, and all HTMT values were below the 0.90 threshold, confirming discriminant validity (Ford, 2020). Composite Reliability (CR) for all constructs exceeded 0.70, indicating satisfactory reliability (Table 2).

**Table 2.** Convergent Validity and Construct Reliability

| Construct | AVE | CR |
|---|---|---|
| X1 (Experiential Learning) | 0.735 | 0.917 |
| X2 (Entrepreneurial Orientation) | 0.672 | 0.859 |
| Y (Start-up Business Performance) | 0.769 | 0.930 |

Source: Processed primary data (2024)

**Table 3.** Outer Loading Factors

| Item | X1 | X2 | Y | Z |
|---|---|---|---|---|
| EL1 | 0.834 | | | |
| EL2 | 0.876 | | | |
| EL3 | 0.852 | | | |
| EO1 | | 0.789 | | |
| EO2 | | 0.834 | | |
| EO3 | | 0.845 | | |
| SBP1 | | | 0.891 | |
| SBP2 | | | 0.876 | |
| SBP3 | | | 0.862 | |
| SN1 | | | | 0.845 |
| SN2 | | | | 0.853 |
| SN3 | | | | 0.848 |

Source: Processed primary data (2024)

**Table 4.** Fornell-Larcker Criterion

| Construct | X1 | X2 | Y | Z |
|---|---|---|---|---|
| X1 | 0.857 | | | |
| X2 | 0.621 | 0.820 | | |
| Y | 0.654 | 0.687 | 0.877 | |
| Z | 0.543 | 0.598 | 0.612 | 0.849 |

Source: Processed primary data (2024)

**Table 5.** Heterotait-Monotrait Ratio (HTMT)

| Construct | X1 | X2 | Y | Z |
|---|---|---|---|---|
| X1 | | | | |
| X2 | 0.734 | | | |
| Y | 0.742 | 0.798 | | |
| Z | 0.651 | 0.712 | 0.723 | |

Source: Processed primary data (2024)

Structural Model Evaluation The structural model was evaluated to test the research hypotheses. The results of path analysis show that experiential learning (X1) has a positive and significant effect on start-up business performance (Y) ($\beta = 0.352$, $t = 4.927$, $p < 0.001$). Entrepreneurial orientation (X2) was also found to have a positive and significant influence on start-up business performance (Y) ($\beta = 0.417$, $t = 5.583$, $p < 0.001$). These findings support Hypotheses 1 and 2.

The introduction of social networks as a moderating variable in this study is grounded in several theoretical frameworks and empirical evidence. Social Capital Theory suggests that interpersonal relationships and networks provide access to resources, information, and opportunities that can enhance individual and organizational performance (Coleman, 1988). In the entrepreneurial context, social networks serve as conduits for knowledge transfer, resource acquisition, and opportunity recognition (Richardson, 2007).

The moderating role of social networks is theoretically justified because networks can amplify or diminish the effectiveness of individual characteristics and learning experiences. Strong social networks can enhance the benefits of experiential learning by providing additional feedback, mentoring, and real-world application opportunities. Similarly, social networks can strengthen entrepreneurial orientation by offering platforms for innovation validation, risk-sharing, and proactive market engagement.

Previous research has demonstrated that social networks significantly influence entrepreneurial outcomes, but their moderating effects have been less explored. Aldrich & Zimmer (1986) argued that entrepreneurship is embedded in networks of continuing social relations, suggesting that the effectiveness of individual entrepreneurial attributes depends on the social context. More recent studies by Hoang & Yi (2015) network characteristics can moderate the relationship between entrepreneurial orientation and firm performance.

In the specific context of student entrepreneurship, networks become even more critical because students typically have limited resources, experience, and credibility. Social networks can compensate for these limitations by providing access to mentors, investors, customers, and partners. Therefore, the strength

and diversity of a student's social network can significantly influence how effectively their experiential learning and entrepreneurial orientation translate into business performance.

The moderating role of social network (Z) in the relationship between entrepreneurial orientation ($X_2$) and start-up business performance (Y) was found to be significant ($\beta = 0.183$, $t = 2.461$, $p < 0.05$). However, the moderating effect of social network (Z) on the relationship between experiential learning ($X_1$) and start-up business performance (Y) was not significant ($\beta = 0.072$, $t = 1.019$, $p > 0.05$). Thus, Hypothesis 3 is partially supported.

The research model explained most of the variance in start-up business performance, with an $R^2$ value of 0.672. The $Q^2$ value obtained through the blindfolding procedure was 0.493, indicating satisfactory predictive relevance (Booth et al., 2017). Effect sizes ($f^2$) for the structural paths ranged from 0.058 to 0.237, indicating medium to significant effects (Garamszegi, 2006).

The findings of this study highlight the importance of experiential learning and entrepreneurial orientation in driving students' start-up business performance. Results show that the higher the level of experiential learning experienced by university students, the better their start-up business performance. This positive relationship is consistent with previous research that emphasizes the important role of experiential learning in developing entrepreneurial competencies (Chander et al., 2020; Pais Zozimo et al., 2023). Students' active involvement in real entrepreneurial activities, such as running a business project or interning at a start-up, allows them to hone their skills, acquire practical knowledge, and learn from both success and failure (Isac et al., 2023).

In addition, a strong entrepreneurial orientation was shown to improve the performance of students' start-up businesses. Students with a strong propensity to innovate, be proactive, and take risks tend to achieve better results in their start-up businesses. This finding is in line with previous research that links entrepreneurial orientation with various measures of business performance (Müller et al., 2023; Peng et al., 2020). Start-ups that are driven by innovation, responsive to market opportunities, and take measurable risks tend to excel in a dynamic business environment (Atwine et al., 2023).

This study also investigates the moderating role of social networks in the relationship between experiential learning, entrepreneurial orientation, and start-up business performance. The findings suggest that social networks strengthen the positive influence of entrepreneurial orientation on start-up business performance. Students with strong and diverse social networks can utilize their connections to access valuable resources, information, and support, thereby enhancing the impact of entrepreneurial orientation on business success (Chen et al., 2023). However, the moderating effect of social networks on the relationship between experiential learning and start-up business performance was insignificant. This finding suggests that experiential learning may strongly influence business performance, regardless of the strength of students' social networks.

**Table 6.** Hypothesis Testing Result

| Hypothesis | Path | β | t-value | p-value | Decision |
|---|---|---|---|---|---|
| H1 | X1 → Y | 0.352 | 4.927 | < 0.001 | Supported |
| H2 | X2 → Y | 0.417 | 5.583 | < 0.001 | Supported |
| H3a | X1 × Z → Y | 0.072 | 1.019 | > 0.05 | Not Supported |
| H3b | X2 × Z → Y | 0.183 | 2.461 | < 0.05 | Supported |

Source: Processed primary data (2024)

Overall, the results of this study provide empirical evidence of the key factors that drive student start-up business performance. The findings emphasize the importance of combining experiential learning and entrepreneurial orientation in entrepreneurship education to nurture the competencies and mindsets necessary for entrepreneurial success. In addition, building strong social networks can also enhance the impact of entrepreneurial orientation on start-up business performance.

The results of this study have important implications for entrepreneurship education in higher education. Higher education institutions should design entrepreneurship programs and curricula emphasizing experiential learning, such as applied entrepreneurship projects, internships, and business incubators. (Isac et al., 2023). Facilitating interactions with entrepreneurs, investors, and mentors can also help students develop valuable social networks (Kaandorp et al., 2020). In addition, fostering an entrepreneurial culture that encourages innovation, risk-taking, and proactivity can increase entrepreneurial orientation among college students (Pinto et al., 2024).

While providing valuable insights, this study is not free from limitations. First, the research sample was limited to students from one university in Indonesia, which may limit the generalizability of the findings to other contexts. Future research could expand the scope to include students from different institutions and countries. Second, the cross-sectional research design limits the ability to draw cause-and-effect conclusions. Longitudinal studies can better understand the dynamics over time in the relationship between experiential learning, entrepreneurial orientation, social networks, and start-up business performance.

The findings of this study highlight the importance of experiential learning and entrepreneurial orientation in driving students' start-up business performance. The results of path analysis show that experiential learning (X1) has a positive and significant influence on start-up business performance (Y) with a path coefficient of 0.352 ($t = 4.927$, $p < 0.001$). This finding indicates that the higher the level of experiential learning experienced by university students, the better their start-up business performance. This positive relationship is consistent with previous research that emphasizes the important role of experiential learning in developing entrepreneurial competencies (Chander et al., 2020; Pais Zozimo et al., 2023). Students' active involvement in real entrepreneurial activities, such as running business projects or internships in start-ups, allows them to hone their skills, acquire practical knowledge, and learn from both successes and failures (Isac et al., 2023). These hands-on experiences provide valuable insights that cannot be fully gained through traditional classroom learning.

In addition to experiential learning, entrepreneurial orientation is also proven to influence students' start-up business performance strongly. The analysis results show that entrepreneurial orientation (X2) positively and significantly influences start-up business performance (Y) with a path coefficient of 0.417 ($t = 5.583$, $p < 0.001$). This finding highlights that university students with a strong propensity to innovate, be proactive, and take risks will likely achieve better results in their start-up businesses. This positive relationship between entrepreneurial orientation and business performance is in line with previous research (Dana et al., 2022; Yang & Yu, 2022). Start-ups that are driven by innovation, responsive to market opportunities, and take measurable risks tend to excel in a dynamic business environment (Farkas, 2022). A strong entrepreneurial orientation enables students to better identify and capitalize on business opportunities and adapt to market changes.

This study also investigates the moderating role of social networks in the relationship between experiential learning, entrepreneurial orientation, and start-up business performance. The analysis results show that social networks (Z) significantly moderate the effect of entrepreneurial orientation (X2) on start-up business performance (Y) with a path coefficient of 0.183 ($t = 2.461$, $p < 0.05$). This fin-

ding indicates that social networks strengthen the positive impact of entrepreneurial orientation on start-up business performance. Students with strong and diverse social networks can utilize their connections to access valuable resources, information, and support, thereby enhancing the impact of entrepreneurial orientation on business success (Chen et al., 2023). Extensive social networks enable university students to overcome resource barriers and gain a competitive advantage through collaboration and partnerships.

However, the moderating effect of social network (Z) on the relationship between experiential learning (X1) and start-up business performance (Y) was not significant with a path coefficient of 0.072 ($t = 1.019$, $p > 0.05$). This finding suggests that experiential learning may strongly influence business performance, regardless of the strength of students' social networks. Although social networks did not significantly moderate this relationship, it does not mean social networks are unimportant. Rather, it may indicate that experiential learning greatly benefits start-up business performance, even when students' social networks are not fully developed.

Overall, the model explained most of the variance in students' start-up business performance, with an $R^2$ value of 0.672. This figure indicates that 67.2% of the variance in start-up business performance can be explained by experiential learning, entrepreneurial orientation, and the moderating effect of social networks. This substantial $R^2$ value emphasizes the relevance and explanatory power of the factors examined in this study. In addition, the $Q^2$ value of 0.493 obtained through the blindfolding procedure indicates that the model has satisfactory predictive relevance. (Dabagh & Sheikhbeiglou, 2021). In other words, the model can explain the relationship between variables well and predict endogenous variables' values with sufficient accuracy.

The effect size ($f^2$) for the structural paths in this model ranged from 0.058 to 0.237. According to the guidelines suggested by (Fulton et al., 2023), $f^2$ values of 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively. In this study, experiential learning (X1) has a medium effect size on start-up business performance (Y) with an $f^2$ value of 0.168. Meanwhile, entrepreneurial orientation (X2) showed an effect size close to large with an $f^2$ value of 0.237. These findings further emphasize the importance of experiential learning and entrepreneurial orientation in explaining students' start-up business performance.

The results of this study provide empirical evidence on the key factors that drive student start-up business performance, namely experiential learning, entrepreneurial orientation, and social networks. The findings emphasize the need to incorporate experiential learning and entrepreneurial orientation development in entrepreneurship education to foster the competencies and mindset necessary for entrepreneurial success. Universities can design entrepreneurship programs and curricula that provide opportunities for students to engage in real-world entrepreneurial activities, such as applied entrepreneurship projects, internships, and business incubators. (Wang, C., Zhang, Y., Ding, H., 2023). These hands-on experiences allow students to develop practical skills, learn from failure, and build confidence in pursuing business opportunities.

In addition, universities should seek to foster entrepreneurial orientation among students by creating an environment that encourages innovation, risk-taking, and proactivity. This can be achieved through courses, workshops, and extracurricular activities designed to develop an entrepreneurial mindset and skills. (Isac et al., 2023). Exposure to entrepreneurial success stories, real business case studies, and business plan competitions can inspire and motivate students to pursue entrepreneurship. Creating a culture that embraces failure as a learning opportunity is also important to encourage risk-taking and innovation.

The importance of social networks in strengthening the influence of entrepreneurial orientation on student start-up business per-

formance cannot be ignored. Universities can facilitate social network building by creating opportunities for students to interact with entrepreneurs, investors, and mentors (Giannetti & Simonov, 2009). Organizing networking events, inviting guest speakers from the industry, and launching mentoring programs can help students build valuable connections. In addition, encouraging interdisciplinary collaborations and partnerships with local companies can expand students' social networks and provide access to diverse resources and expertise.

While providing valuable insights, this study is not free from limitations. First, the research sample was limited to students from one university in Indonesia, which may limit the generalizability of the findings to other contexts. Future research could broaden the scope by including students from different institutions and countries to better understand the factors influencing student start-up business performance. Second, the cross-sectional research design limits the ability to draw cause-and-effect conclusions. Longitudinal studies can better understand the dynamics over time in the relationship between experiential learning, entrepreneurial orientation, social networks, and start-up business performance. Future research could also explore other contextual factors, such as institutional support, access to funding, and individual characteristics, that may influence students' start-up business performance.

Despite these limitations, this study makes an important contribution to understanding the factors that drive entrepreneurial success among university students. The findings emphasize the need for a holistic approach in entrepreneurship education that incorporates experiential learning, entrepreneurial orientation development, and social network building. By applying the insights from this study, universities can design more effective programs and initiatives to foster entrepreneurship and support the success of student start-up businesses. Developing a generation of competent and well-networked young entrepreneurs can contribute to economic growth, job creation, and sustainable community development.

## CONCLUSION

This research provides important insights into the key factors that drive college students' start-up business performance, focusing on the role of experiential learning, entrepreneurial orientation, and social networks. The main findings of this study indicate that experiential learning and entrepreneurial orientation positively and significantly influence college students' start-up business performance. In addition, social networks are shown to moderate the relationship between entrepreneurial orientation and business performance, strengthening the positive influence of entrepreneurial orientation. These results provide empirical evidence supporting the importance of incorporating experiential learning, entrepreneurial mindset development, and social capital building in entrepreneurship education.

The theoretical implications of this study involve expanding knowledge of the factors contributing to entrepreneurial success among university students. The findings combine insights from experiential learning theory, entrepreneurial orientation literature, and social network research, highlighting the dynamic interplay between these factors in the context of student start-up businesses. Practically, this study suggests that universities can improve students' entrepreneurial outcomes by designing programs and curricula that emphasize experiential learning, foster entrepreneurial orientation, and facilitate the development of social networks. These findings can inform the development of educational policies promoting entrepreneurship and supporting university-based start-ups.

Although this study makes a valuable contribution, some limitations must be acknowledged. First, the sample of this study was limited to students from one university in Indonesia, which may limit the generalizability of the findings to other contexts. Secondly,

the cross-sectional research design limits the ability to draw definitive cause-and-effect conclusions. Future research may address these limitations by including a more diverse sample from different institutions and applying a longitudinal design to capture dynamics over time.

Based on the findings and limitations of this study, several recommendations for future research can be proposed. First, future research could investigate the role of additional contextual factors, such as institutional support, access to funding, and individual characteristics, in influencing the relationship between experiential learning, entrepreneurial orientation, social networks, and student start-up business performance. Secondly, in-depth qualitative studies can provide a richer understanding of the experiences and challenges faced by student entrepreneurs, complementing the quantitative findings of this study. Third, future research could explore the effectiveness of specific entrepreneurship education interventions and programs in developing students' entrepreneurial competencies and promoting start-up success.

In conclusion, this study highlights the importance of experiential learning, entrepreneurial orientation, and social networks in shaping college students' start-up business performance. The findings contribute to the growing understanding of college-based entrepreneurship and suggest avenues for designing more effective entrepreneurship education programs. Developing competent and interconnected young entrepreneurs is important to foster innovation, job creation, and economic growth. Therefore, universities should continuously strive to promote a culture of entrepreneurship, provide strong institutional support, and equip students with the skills, mindset, and networks they need to succeed as entrepreneurs. By doing so, universities can play a vital role in shaping the next generation of entrepreneurs who will drive positive change and contribute to the sustainable development of society.

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