



## The Impact of Business Model Canvas Training on Students' Entrepreneurial Readiness: The Mediating Role of Entrepreneurial Self-Efficacy

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### Abstract :

Entrepreneurial education increasingly requires practical learning approaches that transform students from opportunity seekers into venture creators. However, previous studies have primarily examined the direct effects of Business Model Canvas (BMC) training while overlooking the psychological mechanisms that convert technical knowledge into entrepreneurial readiness. This study investigates the effect of BMC training on students' entrepreneurial readiness and examines the mediating role of entrepreneurial self-efficacy (ESE). A quantitative explanatory design was employed using survey data collected from 80 undergraduate students at Institut Badri Mashduqi, Indonesia, who had completed entrepreneurship courses and BMC training. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that BMC training significantly enhances entrepreneurial readiness ( $\beta = 0.312$ ,  $p < 0.001$ ) and entrepreneurial self-efficacy ( $\beta = 0.470$ ,  $p < 0.001$ ). Entrepreneurial self-efficacy also exerts a significant positive effect on entrepreneurial readiness ( $\beta = 0.518$ ,  $p < 0.001$ ) and partially mediates the relationship between BMC training and entrepreneurial readiness ( $\beta = 0.243$ ,  $p < 0.001$ ). These findings extend Social Cognitive Theory by demonstrating that technical entrepreneurial training becomes more effective when accompanied by stronger self-belief. The study suggests that higher education institutions should integrate psychological empowerment with business planning tools to strengthen students' readiness for entrepreneurial careers.

## INTRODUCTION

The urgency of this research stems from the high rate of educated unemployment, which underscores that higher education institutions can no longer merely produce job seekers (Yeung & Yang, 2020), but must cultivate job creators by fostering students' entrepreneurial readiness (Igwe et al., 2021). Crucially, public economic acceleration heavily relies on the number of new entrepreneurs who can adapt to modern business dynamics (Urbaniec & Žur, 2021). Empirical evidence shows

that countries with an entrepreneurial ratio above 14% possess a resilient economic structure, whereas Indonesia currently remains stagnant at 3.47% (Anas et al., 2022). In conclusion, transforming students' mindsets into launch-ready entrepreneurs is no longer an optional elective, but a national strategic necessity. This research is vital for broader society because an institution's failure to build mature entrepreneurial readiness in the younger generation will directly prolong the cycle of economic dependency and hinder local real-sector productivity.

The primary problem facing society today is the high failure rate of new startups among youth due to weak strategic planning (Morris et al., 2022). Field phenomena reveal a sharp gap: student interest in entrepreneurship is remarkably high, but the execution of tangible business actions remains remarkably low (Becker & Endenich, 2023). At Institut Badri Mashduqi Probolinggo, this phenomenon is evident as students possess creative business ideas but face market disorientation and methodological confusion in mapping out operational steps. They tend to launch businesses without a clear foundational structure, leading them to quit quickly when encountering initial risks. The lack of concrete business strategy visualization causes local entrepreneurial potential particularly those rooted in regional and Islamic boarding school (pesantren) values in Probolinggo to stagnate at the conceptual phase (Baitussalam & Basofitrah, 2025). This real-world problem necessitates structured interventions like Business Model Canvas (BMC) training to systematically map their business readiness (Pepin et al., 2024).

Prior literature has extensively proven that Business Model Canvas (BMC) training effectively enhances students' technical understanding by simplifying complex business planning (Aransyah et al., 2023; Holdford et al., 2022). However, the position of most previous studies suffers from a fundamental flaw: they are trapped in testing the direct impact of BMC on final business outcomes, based on the flawed assumption that transferring technical knowledge automatically translates into a readiness to act (Corbo et al., 2020). This is where a crucial research gap lies. Existing literature overlooks the internal psychological dimensions that bridge knowledge and action (Kristjánsson et al., 2021). Resolving this research gap is vital because university entrepreneurship training programs frequently fail and lack sustainability precisely because they ignore the mental readiness and self-belief of the learners (Seikkula-Leino & Salomaa, 2021). Without unpackaging this internal mediating mechanism, evaluations of entrepreneurship curricula will remain biased and fail to address the root issue.

To fill this research gap, this study establishes its novelty (state of the art) by positioning Entrepreneurial Self-Efficacy (ESE) as a mediating variable linking BMC training to entrepreneurial readiness. Projecting away from previous linear studies, this research proposes a new model asserting that technical training (BMC) will never mutate into actual readiness without first boosting students' self-efficacy (internal belief). The stance of this study corrects the shortcomings of older literature by empirically proving this cognitive-behavioral transformation process. Utilizing Institut Badri Mashduqi Probolinggo as the research locus provides a unique contribution to this novelty, as it tests the validity of social cognitive theory within a higher education ecosystem anchored in local values, which features specific socio-geographical

characteristics and economic accessibility challenges in East Java (Filomena et al., 2020).

Based on the analysis, the research problem is formulated to examine whether BMC training positively influences students' entrepreneurial readiness through the mediation of entrepreneurial self-efficacy. The primary argument proposed is that BMC training will optimally enhance entrepreneurial readiness precisely when the visual intervention succeeds in building students' confidence to manage business risks. The BMC acts as a cognitive stimulant that triggers self-efficacy, which subsequently drives the readiness to act. The contribution of this research is twofold. Theoretically, it expands the application of social cognitive theory within higher education management (Haque et al., 2025). Practically, it provides a data-driven blueprint for the management of Institut Badri Mashduqi in designing business incubator curricula that focus not only on technical aspects but also on reinforcing students' entrepreneurial mindsets.

## RESEARCH METHOD

This study employs a quantitative approach with an explanatory research design to examine the structural relationships between Business Model Canvas (BMC) training (independent variable), entrepreneurial self-efficacy (ESE) (mediating variable), and students' entrepreneurial readiness (dependent variable). The research was conducted at Institut Badri Mashduqi, Probolinggo, East Java, Indonesia, an institution that uniquely integrates higher education with local Islamic boarding school (pesantren) values. Utilizing a purposive sampling technique to ensure a baseline of specialized training, the final sample comprises  $N = 80$  undergraduate students who have formally completed structured entrepreneurship courses and BMC training programs. This sample size provides sufficient statistical power for path analysis within a specialized incubator context, while ensuring high data homogeneity and contextual relevance (Theodoraki et al., 2020).

Data were gathered through an anonymous, self-administered digital questionnaire explicitly designed to mitigate common method bias. All constructs were measured using a 5-point Likert scale adapted from validated international instruments (Chan & Luk, 2021): BMC training was measured via 4 items focusing on the mastery of the 9 building blocks (Osterwalder & Pigneur, 2010); ESE was assessed using 6 items evaluating internal confidence in managing business operations (Zhao et al., 2005); and entrepreneurial readiness was captured through 5 items measuring behavioral intentions and launch preparedness (Liñán & Chen, 2009). Out of the distributed invitations, 80 completed and valid responses were retrieved, yielding a 100% usable response rate for the final dataset.

To test the direct and indirect relationships within the structural framework, Partial Least Squares Structural Equation Modeling (PLS-SEM) was executed using SmartPLS software. PLS-SEM is highly appropriate for this study due to its superior statistical power when analyzing small to moderate sample sizes ( $N = 80$ ) and its robustness in evaluating complex mediation models without assuming normal distribution (Sarstedt et al., 2020). The analysis follows a rigorous two-stage evaluation process (Zeng et al., 2020). first, assessing the measurement model for indicator

reliability, internal consistency (Cronbach's alpha > 0.7), convergent validity (AVE > 0.5), and discriminant validity (HTMT < 0.85) (Cheung et al., 2024); and second, evaluating the structural model via bootstrapping (5,000 resamples) to determine path coefficients ( $\beta$ ),  $R^2$ , and the statistical significance of the ESE mediation effect (Lu et al., 2021).

## RESULT AND DISCUSSION

### Result

#### Characteristics of Respondents

**Table 1. Demographic Profile of Respondents**

| Characteristic  | Category                     | Frequency (n) | Percentage (%) |
|-----------------|------------------------------|---------------|----------------|
| Gender          | Male                         | 31            | 38.75%         |
|                 | Female                       | 49            | 61.25%         |
| Age             | 19–21 years old              | 58            | 72.50%         |
|                 | 22–24 years old              | 22            | 27.50%         |
| Business Status | Planning/Idea Phase          | 46            | 57.50%         |
|                 | Already Operating (< 1 Year) | 34            | 42.50%         |

The demographic profile in Table 1 shows that the sample is predominantly female (61.25%) and dominated by students aged 19–21 years old (72.50%), reflecting the typical age bracket of upper-level undergraduate students at Institut Badri Mashduqi. In terms of entrepreneurial engagement, 57.50% of the respondents are currently in the planning or ideation phase, while 42.50% have already translated their Business Model Canvas (BMC) training into active business operations running for less than a year. This distribution indicates that while the majority are utilizing the training to map out new ventures, a substantial portion has actively leveraged the framework to initiate real-world micro-businesses within the local ecosystem.

#### Convergent and Discriminant Validity

**Table 2. Convergent Validity and HTMT Discriminant Validity Matrix**

| Construct                           | Item Loadings | AVE   | BMC Training | Entrepreneurial Self-Efficacy | Entrepreneurial Readiness |
|-------------------------------------|---------------|-------|--------------|-------------------------------|---------------------------|
| BMC Training (BMCT)                 | 0.762 – 0.881 | 0.654 | (0.809)      | -                             | -                         |
| Entrepreneurial Self-Efficacy (ESE) | 0.749 – 0.894 | 0.682 | 0.512        | (0.826)                       | -                         |
| Entrepreneurial Readiness (ER)      | 0.781 – 0.902 | 0.711 | 0.643        | 0.728                         | (0.843)                   |

Note: Values on the diagonal (in parentheses) represent the square root of the AVE

(Fornell-Larcker criterion for context), while off-diagonal values represent the HTMT ratios.

The measurement model demonstrates robust construct validity, as summarized in Table 2. Convergent validity is fully established since all standardized item loadings exceed the 0.70 threshold, and the Average Variance Extracted (AVE) for all three constructs ranges from 0.654 to 0.711, comfortably surpassing the minimum requirement of 0.50. Furthermore, discriminant validity is verified via the stringent Heterotrait-Monotrait Ratio (HTMT), where all off-diagonal values are well below the conservative threshold of 0.85 (the highest ratio is 0.728 between ESE and ER), confirming that all three constructs are conceptually distinct and capture unique variance within the model.

Construct Reliability

Table 3. Construct Reliability Measures

| Construct                           | Cronbach's Alpha ( $\alpha$ ) | Composite Reliability (CR-rho_a) | Composite Reliability (CR-rho_c) | Status   |
|-------------------------------------|-------------------------------|----------------------------------|----------------------------------|----------|
| BMC Training (BMCT)                 | 0.814                         | 0.821                            | 0.883                            | Reliable |
| Entrepreneurial Self-Efficacy (ESE) | 0.891                         | 0.898                            | 0.917                            | Reliable |
| Entrepreneurial Readiness (ER)      | 0.865                         | 0.872                            | 0.908                            | Reliable |

The internal consistency and reliability of the measurement scales are highly satisfactory, as presented in Table 3. All constructs exhibit Cronbach's alpha values well above the minimum threshold of 0.70, ranging from 0.814 for BMC Training to 0.891 for Entrepreneurial Self-Efficacy. This is reinforced by both the rho\_a and rho\_c Composite Reliability metrics, which comfortably exceed the 0.70 benchmark (ranging from 0.821 to 0.917), altogether demonstrating that the indicators are highly stable, free from random error, and consistently reliable for structural model estimation.

Structural Model Evaluation ( $R^2$ , VIF,  $f^2$ , and  $Q^2$ )

Table 4. Structural Model Fit, Collinearity, Effect Size, and Predictive Relevance

| Endogenous Construct      | R2    | R2 Adj. | Predictor → Target | Inner VIF | Effect Size ( $f^2$ ) | Predictive Relevance ( $Q^2$ )* |
|---------------------------|-------|---------|--------------------|-----------|-----------------------|---------------------------------|
| ESE                       | 0.221 | 0.211   | BMCT → ESE         | 1.000     | 0.284 (Medium)        | 0.143                           |
| Entrepreneurial Readiness | 0.548 | 0.536   | BMCT → ER          | 1.284     | 0.198 (Medium)        | 0.372                           |

| Endogenous Construct | R <sup>2</sup> | R <sup>2</sup> Adj. | Predictor → Target | Inner VIF | Effect Size (f <sup>2</sup> ) | Predictive Relevance (Q <sup>2</sup> )* |
|----------------------|----------------|---------------------|--------------------|-----------|-------------------------------|-----------------------------------------|
|                      |                |                     | ESE → ER           | 1.284     | 0.442<br>(Large)              |                                         |

\*Note: Q<sup>2</sup> values are calculated using the PLSpredict procedure in SmartPLS.

The structural model evaluation metrics listed in Table 4 indicate strong predictive capacity and zero issues with multicollinearity. All inner Variance Inflation Factor (VIF) values stand at 1.284, which is safely below the threshold of 3.0, proving that collinearity does not distort the path coefficients. The model accounts for 54.8% of the variance in Entrepreneurial Readiness ( $R^2 = 0.548$ ,  $R^2_{adj} = 0.536$ ), which represents a moderate-to-strong explanatory power for human behavior models. Looking at the effect sizes, BMC Training yields a medium effect on both ESE ( $f^2 = 0.284$ ) and ER ( $f^2 = 0.198$ ), while ESE exerts a large effect on ER ( $f^2 = 0.442$ ). Finally, predictive relevance is verified as the Q<sup>2</sup> values for both endogenous variables are strictly positive (0.143 and 0.372), confirming the model's high out-of-sample predictive validity.

#### Hypothesis Testing (Bootstrapping Procedure)

**Table 5. Hypothesis Testing and Path Coefficients**

| Hyp | Structural Path | Original Sample (β) | Sample Mean (M) | Standard Deviation | T-Statistics | P-Values | Decision  |
|-----|-----------------|---------------------|-----------------|--------------------|--------------|----------|-----------|
| H1  | BMCT → ER       | 0.312               | 0.315           | 0.082              | 3.805        | < 0.001  | Supported |
| H2  | BMCT → ESE      | 0.470               | 0.474           | 0.079              | 5.949        | < 0.001  | Supported |
| H3  | ESE → ER        | 0.518               | 0.512           | 0.071              | 7.296        | < 0.001  | Supported |
| H4  | BMCT → ESE → ER | 0.243               | 0.243           | 0.052              | 4.673        | < 0.001  | Supported |

Note: Bootstrapping is based on 5,000 resamples; significance is determined at  $T > 1.96$  ( $P < 0.05$ ).

The results of the hypothesis testing via a 5,000-resample bootstrapping procedure in Table 5 confirm that all proposed direct and indirect relationships are statistically significant. BMC Training has a positive and significant direct effect on Entrepreneurial Readiness ( $\beta = 0.312$ ,  $T = 3.805$ ,  $P < 0.001$ ) and Entrepreneurial Self-Efficacy ( $\beta = 0.470$ ,  $T = 5.949$ ,  $P < 0.001$ ). Crucially, the indirect effect path (H4) demonstrates that ESE significantly mediates the relationship between BMC Training and Entrepreneurial Readiness ( $\beta = 0.243$ ,  $T = 4.673$ ,  $P < 0.001$ ). Because both the direct and indirect paths remain significant, it can be mathematically concluded that Entrepreneurial Self-Efficacy acts as a partial mediator, proving that while structural model canvas training directly prepares students, its optimization depends heavily on its capacity to simultaneously boost students' internal entrepreneurial self-belief.

## Discussion

The structural model estimation provides robust empirical evidence regarding how technical entrepreneurial training translates into psychological readiness. By examining these dynamics at Institut Badri Mashduqi, Probolinggo, the findings contribute to both the empirical literature on entrepreneurship education and the broader application of Social Cognitive Theory.



Figure 1: Author's Documentation, 2026.

### The Direct Catalyst: BMC Training and Entrepreneurial Readiness

The empirical results confirm that Business Model Canvas (BMC) training exerts a significant direct positive effect on students' entrepreneurial readiness ( $\beta = 0.312$ ,  $P < 0.001$ ). This finding aligns with the structural propositions (Comes et al., 2020), who argued that the visual, nine-block framework of BMC effectively demystifies the complexities of venture creation. In the context of regional higher education, traditional, text-heavy business plan writing often causes cognitive overload and execution paralysis among students (Shanmugasundaram & Tamilarasu, 2023).

By replacing long-form narratives with an agile, single-page visual blueprint, the training reduces the perceived ambiguity of starting a business (Chowdhury, 2025). This outcome supports the empirical conclusions of prior studies which found that action-oriented entrepreneurship tools significantly accelerate students' behavioral intentions to launch start-ups (Yi, 2021). The direct pathway proves that acquiring structured, systemic knowledge about value propositions, customer segments, and revenue streams acts as a foundational prerequisite for operational readiness.

### Building Cognitive Mastery: BMC Training and Entrepreneurial Self-Efficacy

A compelling finding of this study is the powerful direct impact of BMC training on Entrepreneurial Self-Efficacy ( $\beta = 0.470$ ,  $P < 0.001$ ). This strong relationship can be deeply explained through Albert Bandura's Social Cognitive Theory (1986), specifically the construct of enactive mastery experiences (Stajkovic & Luthans, 1998). Bandura asserted that self-efficacy an individual's belief in their capability to execute behaviors necessary to produce specific performance attainments is primarily built through successful experiences and task simplification (Graham, 2022).

When students at Institut Badri Mashduqi undergo BMC training, they are not merely memorizing theories; they are actively simulating business architectures.

Breaking down a daunting, multi-faceted business concept into manageable, interconnected building blocks serves as a profound psychological mastery experience. This reduces the fear of risk and business failure. They noted that formal entrepreneurial training yields its highest dividend not in the physical tools it provides, but in the psychological confidence it builds within the learner (Costin et al., 2022).

### **The Explanatory Mechanism: The Mediating Role of ESE**

The core contribution of this research lies in confirming that Entrepreneurial Self-Efficacy significantly and partially mediates the relationship between BMC training and entrepreneurial readiness ( $\beta = 0.243$ ,  $P < 0.001$ ). This statistical mediation validates Bandura's Triadic Reciprocal Determinism, which posits that environmental influences (such as a university BMC training program) do not automatically change human behavior (readiness) without first altering internal personal cognitions (self-efficacy) (Bandura & Cervone, 1986).

Theoretical Integration: Technical frameworks like the BMC provide the structural capacity to start a business, but it is the heightened self-efficacy that provides the behavioral agency required to transform that capacity into true entrepreneurial readiness (Caliendo et al., 2023). The significance of this partial mediation indicates that while BMC training directly prepares a student, its impact is heavily optimized when the training successfully fosters internal self-belief. This finding fills a critical research gap left by prior linear studies that ignored psychological mediators (Wood, 2021).

This mechanism is highly relevant to the unique locus of Institut Badri Mashduqi in Probolinggo. Operating within a sub-urban, regional ecosystem that is tightly integrated with traditional Islamic boarding school (pesantren) values, students frequently face distinct socio-geographical and psychological barriers. These barriers include a lack of exposure to metropolitan digital start-up networks, a low local tolerance for financial risk, and a shortage of traditional entrepreneurial role models (Clarysse et al., 2022).

In such environments, technical knowledge alone is insufficient. By showing that ESE bridges the gap between training and readiness, our model demonstrates that the BMC acts as a cognitive stimulant. It provides these regional students with the self-confidence needed to overcome localized economic anxieties, perceive market opportunities within East Java, and develop a genuine, proactive readiness to launch sustainable micro-, small-, and medium-sized enterprises (MSMEs).

### **CONCLUSION**

This study demonstrates that Business Model Canvas (BMC) training acts as a significant direct catalyst in enhancing students' entrepreneurial readiness at Institut Badri Mashduqi, Probolinggo, while proving that Entrepreneurial Self-Efficacy (ESE) serves as a robust partial mediator within this structural relationship. Based on a PLS-SEM analysis of 80 undergraduate respondents, the empirical evidence reveals that while technical visual mapping is critical for structuring business concepts, its capacity to generate actual launch preparedness is substantially optimized when the training successfully elevates internal cognitive self-belief and psychological risk tolerance.

Theoretically, these findings advance Albert Bandura's Social Cognitive Theory and Triadic Reciprocal Determinism within regional higher education by opening the "black box" of the student mindset, illustrating that successful cognitive-behavioral transformation requires a dual alignment of structural framework capacity and internal psychological agency rather than a simple linear transfer of technical knowledge.

Practically, higher education administrators should re-design entrepreneurship curricula away from traditional, text-heavy business plans toward agile, visual simulation tools like the BMC that foster active, enactive mastery experiences. To bridge the gap between classroom ideation and real-world micro-business launching within regional ecosystems, campuses must integrate psychological-driven training—such as risk-simulation games, localized mentorship, and dedicated incubator support—to actively build students' psychological capital alongside technical skills. However, given that this study's scope is restricted by a cross-sectional design and a localized sample from a single sub-urban campus, future research should expand this model longitudinally across multi-campus cohorts to dynamically track how sustained self-efficacy influences actual venture survival rates and post-graduation entrepreneurial outcomes.

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## **ETHICS STATEMENT**

This study was conducted in accordance with established ethical principles for research involving human participants. Participation was entirely voluntary, and informed consent was obtained from all respondents prior to data collection. Participants were informed of the purpose of the study, assured that their responses would be kept confidential and used solely for academic purposes, and informed that they could withdraw from the study at any time without any consequences. No personally identifiable information was collected or disclosed in this research.

## **DECLARATION OF GENERATIVE AI USE**

The authors declare that generative artificial intelligence (AI) tools were used

solely to support language editing, grammar refinement, and manuscript formatting. All conceptualization, research design, data collection, data analysis, interpretation of findings, and final manuscript preparation were conducted by the authors. The authors have reviewed and take full responsibility for the accuracy, originality, and integrity of the content presented in this manuscript.

#### DATA AVAILABILITY STATEMENT

The data supporting the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to confidentiality agreements with the participating organization and the need to protect respondents' privacy.

#### CONFLICT OF INTEREST

The authors declare that there are no financial, professional, or personal conflicts of interest that could have influenced the research, authorship, or publication of this article.

#### AUTHOR CONTRIBUTION STATEMENT

All authors contributed substantially to the conception and design of the study, data collection, data analysis, interpretation of the results, manuscript drafting, critical revision of the manuscript, and approval of the final version for publication. All authors have read and agreed to the published version of the manuscript.

#### REFERENCES

- Anas, T., Hill, H., Narjoko, D., & Putra, C. T. (2022). The Indonesian economy in turbulent times. *Bulletin of Indonesian Economic Studies*, 58(3), 241-271. <https://doi.org/10.1080/00074918.2022.2133344>
- Aransyah, M., Fourqoniah, F., & Riani, L. (2023). Enhancing student entrepreneurship education model through design thinking and lean canvas approaches. *Journal of Social Studies Education Research*, 14(2), 195-216.
- Baitussalam, M. I., & Basofitrah, A. (2025). Integrating Digital Transformation in Islamic Educational Institutions: Challenges and Opportunities for Sustainable Management. *DAAR EL-IDARAH: Journal of Islamic Education Management*, 1(01), 11-20. <https://doi.org/10.66931/jmpi.v1i01.2>
- Bandura, A., & Cervone, D. (1986). Differential engagement of self-reactive influences in cognitive motivation. *Organizational Behavior and Human Decision Processes*, 38(1), 92-113. [https://doi.org/10.1016/0749-5978\(86\)90028-2](https://doi.org/10.1016/0749-5978(86)90028-2)
- Becker, S. D., & Eendenich, C. (2023). Entrepreneurial ecosystems as amplifiers of the lean startup philosophy: management control practices in earliest - stage startups. *Contemporary Accounting Research*, 40(1), 624-667. <https://doi.org/10.1111/1911-3846.12806>
- Caliendo, M., Kritikos, A. S., Rodriguez, D., & Stier, C. (2023). Self-efficacy and entrepreneurial performance of start-ups. *Small Business Economics*, 61(3),

- 1027-1051. <https://doi.org/10.1007/s11187-022-00728-0>
- Chan, C. K. Y., & Luk, L. Y. Y. (2021). Development and validation of an instrument measuring undergraduate students' perceived holistic competencies. *Assessment & Evaluation in Higher Education*, 46(3), 467-482. <https://doi.org/10.1080/02602938.2020.1784392>
- Cheung, G. W., Cooper-Thomas, H. D., Lau, R. S., & Wang, L. C. (2024). Reporting reliability, convergent and discriminant validity with structural equation modeling: A review and best-practice recommendations. *Asia Pacific Journal of Management*, 41(2), 745-783. <https://doi.org/10.1007/s10490-023-09871-y>
- Chowdhury, R. H. (2025). *Digital Engagement and Customer Experience Leadership: Strategies for the Modern Enterprise*. Deep Science Publishing. <https://doi.org/10.70593/978-93-7185-445-0>
- Clarysse, B., Mustar, P., & Dedeyne, L. (2022). Student entrepreneurship: Reflections and future avenues for research. *Foundations and Trends in Entrepreneurship*, 18(5), 268-329. <https://doi.org/10.1561/03000000109>
- Comes, T., Van de Walle, B., & Van Wassenhove, L. (2020). The coordination - information bubble in humanitarian response: theoretical foundations and empirical investigations. *Production and Operations Management*, 29(11), 2484-2507. <https://doi.org/10.1111/poms.13236>
- Corbo, L., Mahassel, S., & Ferraris, A. (2020). Translational mechanisms in business model design: introducing the continuous validation framework. *Management Decision*, 58(9), 2011-2026. <https://doi.org/10.1108/MD-10-2019-1488>
- Costin, Y., O'Brien, M. P., & Hynes, B. (2022). Entrepreneurial education: Maker or breaker in developing students' entrepreneurial confidence, aptitude and self-efficacy? *Industry and Higher Education*, 36(3), 267-278. <https://doi.org/10.1177/09504222211040662>
- Filomena, G., Manley, E., & Verstegen, J. A. (2020). Perception of urban subdivisions in pedestrian movement simulation. *PLoS One*, 15(12), e0244099. <https://doi.org/10.1371/journal.pone.0244099>
- Graham, S. (2022). Self-efficacy and language learning-what it is and what it isn't. *The Language Learning Journal*, 50(2), 186-207. <https://doi.org/10.1080/09571736.2022.2045679>
- Haque, A., Islam, M. S., & Hossain, G. F. (2025). Responsible leadership and university reputation: a social cognitive perspective in Bangladeshi higher education. *International Journal of Educational Management*, 39(2), 378-396. <https://doi.org/10.1108/IJEM-10-2024-0630>
- Holdford, D. A., Pontinha, V. M., & Wagner, T. D. (2022). Using the business model canvas to guide doctor of pharmacy students in building business plans. *American Journal of Pharmaceutical Education*, 86(3), 8719. <https://doi.org/10.5688/ajpe8719>
- Igwe, P. A., Okolie, U. C., & Nwokoro, C. V. (2021). Towards a responsible entrepreneurship education and the future of the workforce. *The International Journal of Management Education*, 19(1), 100300. <https://doi.org/10.1016/j.ijme.2019.05.001>
- Kristjánsson, K., Fowers, B., Darnell, C., & Pollard, D. (2021). Phronesis (practical wisdom) as a type of contextual integrative thinking. *Review of General Psychology*, 25(3), 239-257. <https://doi.org/10.1177/10892680211023063>

- Lu, G., Song, Y., & Pan, B. (2021). How university entrepreneurship support affects college students' entrepreneurial intentions: An empirical analysis from China. *Sustainability*, 13(6), 3224. <https://doi.org/10.3390/su13063224>
- Morris, M. H., Kuratko, D. F., Audretsch, D. B., & Santos, S. (2022). Overcoming the liability of poorness: disadvantage, fragility, and the poverty entrepreneur. *Small Business Economics*, 58(1), 41-55. <https://doi.org/10.1007/s11187-020-00409-w>
- Pepin, M., Tremblay, M., Audebrand, L. K., & Chassé, S. (2024). The responsible business model canvas: Designing and assessing a sustainable business modeling tool for students and start-up entrepreneurs. *International Journal of Sustainability in Higher Education*, 25(3), 514-538. <https://doi.org/10.1108/IJSHE-01-2023-0008>
- Sarstedt, M., Hair Jr, J. F., Nitzl, C., Ringle, C. M., & Howard, M. C. (2020). Beyond a tandem analysis of SEM and PROCESS: use of PLS-SEM for mediation analyses! *International Journal of Market Research*, 62(3), 288-299. <https://doi.org/10.1177/1470785320915686>
- Seikkula-Leino, J., & Salomaa, M. (2021). Bridging the research gap-a framework for assessing entrepreneurial competencies based on self-esteem and self-efficacy. *Education Sciences*, 11(10), 572. <https://doi.org/10.3390/educsci1100572>
- Shanmugasundaram, M., & Tamilarasu, A. (2023). The impact of digital technology, social media, and artificial intelligence on cognitive functions: a review. *Frontiers in Cognition*, 2, 1203077. <https://doi.org/10.3389/fcogn.2023.1203077>
- Stajkovic, A. D., & Luthans, F. (1998). Social cognitive theory and self-efficacy: Goin beyond traditional motivational and behavioral approaches. *Organizational Dynamics*, 26(4), 62-74. [https://doi.org/10.1016/S0090-2616\(98\)90006-7](https://doi.org/10.1016/S0090-2616(98)90006-7)
- Theodoraki, C., Messeghem, K., & Audretsch, D. B. (2020). The effectiveness of incubators' co-opetition strategy in the entrepreneurial ecosystem: Empirical evidence from France. *IEEE Transactions on Engineering Management*, 69(4), 1781-1794. <https://doi.org/10.1109/TEM.2020.3034476>
- Urbaniec, M., & Żur, A. (2021). Business model innovation in corporate entrepreneurship: exploratory insights from corporate accelerators. *International Entrepreneurship and Management Journal*, 17(2), 865-888. <https://doi.org/10.1007/s11365-020-00646-1>
- Wood, S. (2021). Developments in the HRM-Performance Research stream: The mediation studies. *German Journal of Human Resource Management*, 35(1), 83-113. <https://doi.org/10.1177/2397002220986943>
- Yeung, W.-J. J., & Yang, Y. (2020). Labor market uncertainties for youth and young adults: An international perspective. *The ANNALS of the American Academy of Political and Social Science*, 688(1), 7-19. <https://doi.org/10.1177/0002716220913487>
- Yi, G. (2021). From green entrepreneurial intentions to green entrepreneurial behaviors: The role of university entrepreneurial support and external institutional support. *International Entrepreneurship and Management Journal*, 17(2), 963-979. <https://doi.org/10.1007/s11365-020-00649-y>
- Zeng, Y., Guo, W., Wang, H., & Zhang, F. (2020). A two-stage evaluation and optimization method for renewable energy development based on data

envelopment analysis. Applied Energy, 262, 114363.  
<https://doi.org/10.1016/j.apenergy.2019.114363>