
Capacity Building in Risk Prevention and Mitigation for Micro and Small Enterprises: Evidence from a Community Engagement Program

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Abstract

Micro and small enterprises (MSEs) play a critical role in Indonesia's economic resilience, yet they remain highly vulnerable to operational, financial, and market uncertainties due to limited risk management capabilities. This study reports the results of a community service-based training program conducted at the Cordova Entrepreneurship School, Tangerang, which aimed to strengthen participants' capacity to identify, analyze, and mitigate business risks through preventive strategies and the Bow Tie risk management method. The program involved ten student participants (five male and five female) and employed a pretest-posttest design using structured questionnaires administered via Google Forms. The training materials covered fundamental concepts of uncertainty, types of business risks, the risk management process, preventive measures, and practical application of the Bow Tie method. Quantitative analysis of pre-test and post-test scores indicates a consistent improvement in participants' understanding of risk management concepts, reflecting the effectiveness of experiential and structured risk-based learning. The findings align with prior studies emphasize the positive relationship between enterprise risk management practices and microbusiness performance, adaptability, and sustainability. Beyond individual learning outcomes, the program contributed to institutional objectives by integrating community engagement with teaching and student development under the Merdeka Belajar Kampus Merdeka (MBKM) framework. Overall, this study demonstrates that targeted, context-sensitive risk management training can significantly enhance risk awareness and managerial readiness among aspiring micro-entrepreneurs, thereby supporting long-term business resilience and community empowerment.

Keywords: *Bow Tie, Risk Management, Entrepreneurship, Risk Mitigation, Management.*

INTRODUCTION

In a developing country like Indonesia, Micro and Small Enterprises (MSEs) play a strategic role in economic development by generating employment, supporting local livelihoods, and strengthening economic resilience. Despite their importance, many MSEs remain highly vulnerable to uncertainty due to limited managerial capacity, weak financial systems, and the absence of structured risk management practices (Hanggraeni et al., 2019). Empirical evidence shows that unmanaged risks, ranging from operational disruptions to market volatility, significantly affect business continuity and performance (Aziz et al., 2024). In practice, risk-related failures among MSEs often stem not only from external shocks, but from insufficient preparedness and low risk awareness. Therefore, strengthening risk management capabilities among early-stage entrepreneurs has become an urgent developmental priority.

Risk management is widely understood as a systematic process involving risk identification, analysis, evaluation, and mitigation to reduce potential losses and enhance organizational resilience. Studies across different contexts consistently demonstrate that effective risk management practices positively influence business performance, sales growth, and operational stability among micro and small firms (Gata & Ayodele, 2025). Furthermore,

international frameworks such as ISO 31000 emphasize that risk management should be embedded into daily decision-making processes rather than treated as a reactive response. However, prior research also highlights that many small business owners lack practical tools and applied knowledge to translate risk concepts into actionable strategies (Afrioz & Devi, 2025). This gap between theoretical understanding and practical implementation underscores the need for context-based training interventions.

In addition to technical limitations, psychological preparedness and entrepreneurial mindset play a critical role in how business actors perceive and respond to risk. According to Frese (2024), entrepreneurial preparedness, particularly action-oriented knowledge and personal initiative, enhances an entrepreneur's ability to anticipate uncertainty and respond adaptively to challenges. Training programs that integrate experiential learning and applied risk analysis have been shown to significantly improve decision quality and business outcomes, even among novice or youth entrepreneurs. This finding is particularly relevant for educational-based entrepreneurship programs, where students are transitioning from theoretical learning to real-world business practice. Therefore, embedding risk management education within entrepreneurial training environments offers both pedagogical and economic value.

Responding to these challenges, this study reports a community engagement program conducted at Sekolah Kewirausahaan Bina Amanah Cordova, Tangerang, targeting their students who are learning entrepreneurship at an early stage. The program focused on training participants to identify risks, design preventive actions, and apply mitigation strategies using the Bow Tie Method as a practical risk-mapping tool. By integrating structured risk management concepts with hands-on learning, the program aimed to enhance students' awareness, analytical skills, and business resilience. This article contributes to the literature by demonstrating how community-based risk management training can strengthen entrepreneurial capacity at the micro level. Moreover, it provides empirical insights into the effectiveness of preventive and mitigation-focused training for future entrepreneurs within an educational ecosystem.

RESEARCH METHODS

The usage of community-based training and evaluation design is conducted to examine the effectiveness of preventive and risk mitigation training for micro and small enterprise actors in this study. The subjects of the study consisted of ten participants involved in a community service program conducted at Sekolah Cordova, comprising five male and five female participants. The intervention focused on enhancing participants' understanding of risk management concepts, including risk identification, analysis, evaluation, and mitigation, with a particular emphasis on the Bow Tie method. The materials delivered included structured training modules, presentation slides, and practical exercises tailored to the context of micro and small enterprises. This approach aligns with prior studies emphasizing the role of structured risk management training in improving MSME performance and sustainability (Hanggraeni et al., 2019; Hopkin, 2018).

The data collection was conducted using a pre-test and post-test design to measure changes in participants' knowledge and understanding before and after the training. The research instrument consisted of a structured questionnaire, ensuring accessibility and consistency of responses. The variables measured included participants' comprehension of basic risk concepts, types of business risks (operational, financial, market, and legal),

preventive actions, and mitigation strategies using the Bow Tie method. The pre-test was administered prior to the training session, while the post-test was conducted immediately after the completion of the training activities. This evaluation technique is commonly used in training-based community service research to assess short-term learning outcomes (Burns, 2016; Hull, 2021).

The data analysis technique applied in this study was descriptive quantitative analysis, focusing on the comparison of pre-test and post-test scores to identify learning improvements among participants. The analysis emphasized changes in individual and aggregate scores rather than complex statistical modeling, in accordance with the exploratory and applied nature of community service research. Mean score comparisons were used as the primary indicator of training effectiveness, supported by qualitative observations during discussions and question-and-answer sessions. The use of a pre–post evaluation framework provides a practical and reliable measure of training impact in small-sample educational interventions (Thompson & Hopkin, 2020).

RESULTS AND DISCUSSION

The participants involved in this community engagement program consisted of ten students from Sekolah Kewirausahaan Bina Amanah Cordova, Tangerang, who were actively learning basic entrepreneurship. The gender composition was balanced, with five female and five male participants, allowing for a neutral representation in learning outcomes. All participants were categorized as novice entrepreneurs or prospective micro and small business actors with limited prior exposure to formal risk management concepts. This profile reflects the typical characteristics of early-stage entrepreneurs who often rely on intuition rather than structured managerial tools. Therefore, the selected participants were considered appropriate for evaluating the effectiveness of basic risk management training.

The training was delivered through interactive lectures, guided discussions, and practical illustrations focusing on risk identification, preventive actions, and mitigation strategies. Particular emphasis was placed on introducing the Bow Tie method as a simple yet systematic tool for visualizing risks, causes, and consequences. Participants demonstrated increasing engagement throughout the sessions, especially during case-based discussions related to operational and financial risks. The learning process encouraged participants to connect theoretical concepts with real situations they might encounter in small-scale business activities. This indicates that the training design successfully facilitated experiential understanding rather than passive knowledge transfer.



Figure1 *Introducing Bow Tie Method*
Source: Documentation 2025

To measure learning outcomes, a pre-test and post-test evaluation was administered. The pre-test scores ranged from 4 to 6, indicating limited initial understanding of risk management concepts among participants. After the training, post-test scores increased significantly, ranging from 7 to 10. This improvement reflects a consistent positive shift in participants' comprehension of risk identification, preventive measures, and mitigation strategies. The comparison between pre-test and post-test results suggests that the training intervention effectively enhanced participants' cognitive understanding.

Beyond numerical improvements, participants also demonstrated qualitative progress in articulating risk-related issues during discussions. They were able to identify potential risks more systematically and propose basic preventive actions aligned with their business contexts. The ability to map risks using the Bow Tie framework showed that participants had internalized the logic of cause–impact relationships. These outcomes indicate that the program achieved its immediate educational objectives. Overall, the results confirm that structured risk management training can significantly improve entrepreneurial preparedness at an early stage.

The observed improvement in participants' understanding aligns with the argument that risk awareness is a foundational element of entrepreneurial competence. According to Thompson and Hopkin (2022), effective risk management begins with the ability to recognize uncertainty and anticipate potential disruptions. The findings of this study demonstrate that even short-term training can elevate risk awareness among novice entrepreneurs. This supports the view that structured learning interventions are essential for strengthening managerial capacity in micro and small enterprises. Consequently, risk education should be integrated early in entrepreneurship development programs.

The application of the Bow Tie method proved particularly effective in helping participants visualize complex risk relationships. As emphasized by Hopkin (2024), visual risk mapping tools enhance comprehension by simplifying abstract concepts into practical frameworks. Participants were able to identify threats, preventive barriers, and mitigation responses more coherently after being introduced to this method. This finding is consistent with previous studies that highlight the suitability of the Bow Tie approach for small organizations with limited analytical resources. Therefore, the Bow Tie method can be considered a practical tool for risk management education in micro and small business contexts.

Improved risk management capability is closely associated with business resilience and sustainability. Burns (2023) argues that small business survival largely depends on the owner's ability to anticipate and respond to uncertainty. The increased post-test scores indicate that participants gained foundational skills that could support more resilient decision-making in future business activities. This suggests that risk management training contributes not only to knowledge acquisition but also to long-term entrepreneurial sustainability. Thus, capacity-building initiatives such as this program play a strategic role in strengthening the micro-enterprise ecosystem.



Figure2 Discussion with Participant
Source: Documentation 2025

From a broader perspective, the findings reinforce the role of universities in delivering impactful community engagement programs. The integration of students, academic facilitators, and local entrepreneurial communities reflects the principles of experiential learning and social responsibility. Previous literature highlights that community-based training enhances both participant outcomes and institutional relevance (Hull, 2022). The success of this program demonstrates that higher education institutions can effectively bridge theory and practice through structured community engagement. Accordingly, similar initiatives should be expanded to maximize societal and educational impact.



Figure3 Introducing Bow Tie Method
Source: Documentation 2025

CONCLUSION

This study concludes that preventive and risk mitigation training provides a meaningful contribution to strengthening risk awareness and managerial capacity among micro and small enterprise participants. The implementation of structured risk management concepts, particularly through the Bow Tie method, enabled participants to systematically identify potential threats, analyze causal relationships, and formulate appropriate preventive and mitigation strategies. Empirical evidence from the pre-test and post-test evaluation demonstrates a consistent improvement in participants' understanding of risk management principles, indicating that the training intervention was effective in achieving its educational objectives. These findings affirm that risk management literacy is not only relevant but essential for early-stage entrepreneurs operating in uncertain and resource-constrained environments. Consequently, integrating practical risk management tools into community-based entrepreneurship programs can enhance business resilience and sustainability.

Furthermore, the results highlight the strategic role of higher education institutions in bridging theoretical knowledge and practical application through community service activities. The involvement of students and lecturers from the Management Study Program of the Faculty of Economics and Business at Universitas Trisakti reinforced the implementation of the Tri Dharma of Higher Education, particularly in generating direct societal impact. The training model adopted in this study demonstrates that participatory learning, contextual case discussion, and simple analytical frameworks are effective for non-academic audiences, including student-entrepreneurs. This approach also strengthens the alignment between community service, teaching, and research, creating a mutually reinforcing academic ecosystem. As such, the program serves as a replicable model for similar institutions aiming to enhance entrepreneurial capacity through risk-based learning interventions.

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