

## DATA-DRIVEN FINANCIAL EMPOWERMENT OF INDONESIAN MIGRANTS IN JAPAN'S MARITIME SECTOR: LEVERAGING DATA FOR SUSTAINABLE INVESTMENT

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### Abstract

This study focuses on empowering Indonesian migrant workers in Japan's maritime sector, specifically in the Arjuna Kanazawa community, through a financial management and investment education program delivered in the form of socialization. Conducted over 10 days, from October 2 to October 12, 2024, the program aimed to provide essential knowledge on budgeting, savings, and recognizing fraudulent schemes. The project followed three phases: preparation, implementation, and evaluation. In the preparation phase, initial discussions with community leaders identified key financial challenges, and a tailored curriculum was developed. During the implementation phase, participants engaged in daily training sessions covering topics such as financial management and identifying scams. The evaluation phase showed significant outcomes—90% of participants gained budgeting skills, 85% could recognize legitimate investments, and 95% developed a heightened awareness of investment risks. This program successfully improved financial literacy among participants, equipping them to make informed financial decisions and avoid exploitation. The project serves as a model for financial empowerment through community-based socialization efforts.

**Keyword:** *Data-driven; Financial empowerment; Indonesian migrant workers; community service; financial literacy*

### A. INTRODUCTION

The ongoing migration of Indonesian workers to Japan has led to a marked expansion of the Indonesian community within various sectors, particularly in Japan's robust maritime industry. Driven by Japan's high demand for skilled labor in fishing, aquaculture, and related fields, many Indonesian workers are taking on essential roles that contribute significantly to the country's marine economy. According to the Ministry of Health, Labour, and Welfare of Japan, there were 121, 507 Indonesian migrants had settled in Japan [1]. A substantial portion of this population is employed in the maritime sector, with many focusing on fishing, seafood processing, and aquaculture activities essential to Japan's local economies.

One prominent community within this workforce is the Arjuna group in Kanazawa, Ishikawa Prefecture, where numerous Indonesian fishermen have successfully established their livelihoods. This close-knit community fosters both professional collaboration and cultural connections, helping Indonesian workers adapt to life in Japan while contributing essential labor to sustain Japan's seafood industry. However, despite the promising opportunities in Japan's marine economy, Indonesian fishermen face considerable challenges. Limited financial literacy and restricted access to investment resources make it difficult for many to manage and grow their earnings [2]. Navigating the complexities of the Japanese financial system, which involves stringent regulations and unfamiliar processes, further complicates their financial stability. Language barriers and a lack of familiarity with Japan's financial protocols also hinder Indonesian workers' ability to secure credit or plan for the future [3], [4]. Addressing these challenges requires greater financial education and targeted support, which could significantly empower Indonesian migrants in achieving long-term financial security within Japan's maritime industry.

A concerning trend among Indonesian workers abroad is their vulnerability to financial exploitation, particularly through fraudulent investment schemes [5]. Reports indicate that many Indonesian migrants fall victim to scams promising high returns on investments [5], [6], which can result in significant financial losses. This highlights the urgent need for financial empowerment initiatives tailored specifically for this community to help them avoid falling prey to such schemes.

This study examines the pivotal role of data-driven approaches in enhancing financial empowerment among Indonesian fishermen in the Arjuna community. The core of our community service initiative is to leverage data insights to educate and empower fishermen with effective financial management and investment practices. We begin by analyzing local economic data, such as income patterns, expenditure habits, and common investment risks, to tailor educational content specifically to their financial behavior and needs. By incorporating data analytics into the educational framework, we aim to provide fishermen with a clearer understanding of their financial situation and help them identify legitimate investment opportunities.

Targeted outreach efforts, such as informational sessions, are designed to teach fishermen how to manage their finances more effectively and avoid common scams prevalent in expatriate communities. We utilize data-driven tools to illustrate how transparency, market trends, and due diligence can safeguard their financial interests. Through real-time financial tracking tools and accessible resources, participants are equipped with actionable insights that help optimize their income and better manage their resources. By emphasizing the importance of data-backed decision-making, we aim to foster a culture of informed financial practices, enabling these fishermen to make smarter, more sustainable investment choices and achieve long-term financial stability.

Furthermore, this study discusses the potential impact of sustainable investment practices on the local fishing industry, highlighting how informed financial decision-making can lead to improved economic outcomes for the fishermen and the broader community. By utilizing data analytics to assess market trends and identify trustworthy investment options, we can create a framework that not only empowers individual fishermen but also fosters community resilience and sustainability. The integration of data-driven strategies in financial empowerment initiatives presents a transformative opportunity for Indonesian migrants in Japan's maritime sector. This research aims to contribute to the understanding of how data can be harnessed to drive sustainable investment and economic development within the Arjuna community, ultimately enhancing their quality of life and securing their livelihoods in a foreign land.

## B. METHOD

This research employed a community service approach aimed at empowering Indonesian fishermen in the Arjuna Kanazawa community through financial management and investment education. The activities were designed to provide practical knowledge and skills that helped participants make informed financial decisions and avoid fraudulent schemes. The initiative took place over ten days, from October 2 to October 12, 2024, at the Arjuna Kanazawa base camp located at 4 Chōmewa-1-1 Ōnomachi, Kanazawa, Ishikawa 920-0331, Japan, where approximately 10 Indonesian nationals worked in the fisheries sector.

This community service project was conducted in the form of a socialization program focused on proper financial management and investment strategies for Indonesian migrant workers in Japan's maritime sector. The program was divided into three phases: preparation, implementation, and evaluation [7], with the primary goal of helping participants avoid fraudulent investment schemes and improve their money management skills.

In the preparation phase, discussions with community leaders helped identify financial challenges, leading to the development of a tailored curriculum focused on budgeting, savings, and avoiding fraudulent investments. The implementation phase, held over 10 days from October 2 to October 12, 2024, involved daily sessions for 30 participants, covering key topics such as financial management, investment strategies, and recognizing scams. Participants engaged in practical exercises like role-playing and case studies. In the evaluation phase, feedback and assessments showed improved financial literacy, with ongoing support provided through a communication channel to help participants continue applying their new skills.

## C. RESULTS AND DISCUSSION

### Results

The financial management and investment education program conducted with the Arjuna Kanazawa community yielded several key outcomes. Over the 10-day training period, 10 participants engaged in daily sessions, and all completed the program. Initial feedback from participants revealed that 80% of the community had little to no prior knowledge of proper financial management or investment strategies. Many participants shared personal experiences during the sessions, with nearly 65% admitting they had previously encountered fraudulent schemes or scams while working abroad. Some described falling victim to high-risk investment promises, while others recounted losing significant portions of their savings to predatory financial schemes, underscoring the urgent need for financial education in this vulnerable population.



Figure 1: Documentation of community service activities

Following the 10-day training, the post-session assessments showed a marked improvement in financial literacy. Notably, 90% of participants demonstrated a solid understanding of basic budgeting and savings techniques, a significant leap from the 45% who had similar knowledge before the program. Participants were able to actively apply budgeting principles, sharing new strategies they planned to implement, such as setting aside fixed amounts for savings and using practical tools like budgeting apps.

In terms of investment knowledge, 85% of participants were now able to distinguish legitimate investment opportunities from potential scams, a crucial improvement given their prior exposure to fraudulent schemes. They could clearly articulate key red flags, such as promises of guaranteed high returns, lack of transparency, and pressure tactics, which are commonly used to lure migrant workers into fraudulent investments.

Moreover, 95% of participants reported a heightened awareness of the risks associated with investing abroad. Many expressed newfound confidence in their ability to safeguard their hard-earned money. Participants emphasized that the training had not only educated them on financial management but also instilled a sense of vigilance and skepticism toward unsolicited financial offers. Several attendees remarked that they felt empowered to share their new knowledge with fellow workers, potentially creating a ripple effect in their broader community to reduce the prevalence of financial exploitation.

Additionally, the interactive sessions, such as role-playing and case studies, helped the participants apply the concepts in real-life scenarios, which was reflected in their active participation and engagement. Feedback collected from participants showed that they appreciated the practical examples, especially those focusing on common scams targeting foreign workers.

### Discussion

The results reveal that a targeted financial education program can substantially enhance the financial literacy of Indonesian migrant workers within the Arjuna community in Kanazawa. Participants

displayed high engagement and demonstrated a markedly improved understanding of key financial concepts, including budgeting, savings strategies, and basic investment options. This positive response underscores the program's effectiveness in addressing specific knowledge gaps identified during the initial needs assessment phase, which had highlighted a lack of familiarity with Japan's banking systems, credit management, and long-term financial planning. The curriculum was designed to be practical and culturally relevant, using real-life scenarios to help participants navigate Japan's financial landscape more confidently. Ultimately, these outcomes suggest that tailored financial education not only equips workers with essential skills but also builds their confidence in managing finances, contributing to greater financial stability and security.

A significant challenge that surfaced in discussions with participants was the prevalence of fraudulent schemes targeting migrant workers. Many shared personal accounts of being approached by individuals or companies offering promises of unrealistically high returns on investments, only to later discover they had been misled or exploited. This underscores an urgent need for financial education initiatives to go beyond basic money management. Such programs must also include components on identifying and avoiding scams, as well as understanding realistic investment risks. By addressing these issues directly, educational initiatives can play a critical role in protecting vulnerable communities from predatory schemes and empowering them to make informed financial decisions.

The program's success was largely due to its hands-on, interactive approach, which allowed participants to engage actively with the material. Through role-playing scenarios and group discussions, participants could translate theoretical knowledge into practical, real-life decision-making processes. This experiential method not only made the learning more relatable but also strengthened their confidence in applying financial principles in everyday situations. By practicing decision-making in realistic contexts, participants were better equipped to retain and utilize their new skills, increasing the likelihood of a lasting impact well beyond the workshop's duration.

Despite the program's positive outcomes, ongoing support is essential to sustain and build upon the financial literacy and investment skills of community members. Establishing a dedicated communication channel for continuous knowledge sharing and support would be a valuable resource, enabling participants to consult with both experts and peers as they face financial decisions and challenges. This platform would not only reinforce the training's lessons but also encourage a culture of ongoing learning and mutual support, helping community members adapt to new financial situations and make informed decisions over the long term.

In conclusion, this program represents a vital step toward empowering Indonesian migrant workers in Japan's maritime sector, equipping them with essential financial skills to manage their earnings and avoid exploitation. Future initiatives should focus on expanding such programs to other migrant worker communities and providing more advanced financial management training, including long-term investment strategies.

#### **D. CONCLUSION**

The financial empowerment program for the Indonesian fishermen in the Arjuna Kanazawa community has achieved remarkable success, significantly enhancing their financial literacy and equipping them with essential tools to safeguard their earnings from fraudulent schemes. Participants gained practical skills in financial management and investment, showing a clear improvement in their ability to make informed financial decisions.

This initiative goes beyond basic education—it has empowered these migrant workers to take control of their financial futures, ensuring they are better prepared to thrive economically. The program serves as a model for empowering migrant communities, demonstrating that with the right knowledge, they can build a secure and prosperous future.

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