

FROM REMITTANCES TO ENTERPRISE: THE EFFECT OF NEEDS-BASED FINANCIAL LITERACY TRAINING ON FINANCIAL BEHAVIOUR AND BUSINESS INITIATION AMONG INDONESIAN RETURN MIGRANTS

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Abstract

Return migrants frequently come home with savings, discipline, and global work experience, yet many fail to convert remittances into sustainable enterprises. This study examines whether a needs-based financial literacy programme improves financial knowledge, financial behaviour, business planning, and business initiation among Indonesian return migrants. The study employed a one-group pretest–posttest pre-experimental design embedded in a community engagement programme delivered by the Migrant Resource Center of Universitas Muhammadiyah Purwokerto in partnership with PT Emma Media Nusantara in Banyumas, Gombong, and Kebumen, Central Java. Training content was designed from a profiling survey and participatory focus group discussions. Hypotheses were tested with paired-sample tests, normalised gain analysis, and one-sided binomial tests. The training significantly improved financial literacy across all domains, and most participants subsequently separated business and household finances, kept routine financial records, planned remittance use, and produced business plans. However, the training did not lead most mentored participants to start or expand a business, and access to capital emerged as the decisive constraint. The study extends human capital theory by locating the point at which investment in financial knowledge ceases to translate into economic output without complementary financial capital. It also offers a replicable university–industry delivery model for post-migration reintegration.

Keywords: Financial Literacy; Financial Behaviour; Return Migration; Remittances; Business Initiation; Human Capital Theory; Indonesia

INTRODUCTION

International labour migration has become one of the most important livelihood strategies for households in developing economies. The number of international migrant workers continues to rise, and the remittances they send now exceed foreign direct investment flows to many low- and middle-income countries (ILO, 2021; McAuliffe & Oucho, 2024; Ratha et al., 2023). Remittances smooth consumption, finance education, and protect households against shocks (Yang, 2011). Yet the economic gains of migration do not automatically persist after workers return home, because a large share of remittances is absorbed by consumption, housing, and schooling rather than productive assets (Adams & Cuecuecha, 2010; Yang, 2008).

Indonesia is one of the largest migrant-sending countries in Asia, and Central Java is among its principal provinces of origin (BP2MI, 2024). The regencies of Banyumas and Kebumen have long traditions of migration to Malaysia, Taiwan, and Hong Kong. Return migrants in these areas bring home savings, work discipline, and international experience, but many struggle to convert these assets into productive enterprises. The persistently low level of national financial literacy compounds the problem (OJK, 2022). Existing empowerment programmes are dominated by short, uniform technical training that is rarely designed from systematic data on participants' needs and local economic potential.

The core difficulty facing return migrants is therefore not merely a shortage of capital but a weak capacity to manage money for business purposes. Financial literacy shapes saving, planning, and debt management (Hilgert et al., 2003; Huston, 2010; Lusardi & Mitchell, 2014; Zuhaena et al., 2025). Disciplined financial practices, such as separating business and household money and recording transactions, are the foundation of microenterprise survival (Drexler et al., 2014; Karlan & Valdivia, 2011; McKenzie & Woodruff, 2014). The ability to plan a business further determines whether remittances become productive assets (Ashraf et al., 2015; Black & Castaldo, 2009; McCormick & Wahba, 2001).

Human capital theory explains how these variables are linked. Training is an investment that adds knowledge and skills and thereby raises individual productivity (Becker, 1964; Mincer, 1974; Schultz, 1961). Greater financial knowledge encourages better financial behaviour (Fernandes et al., 2014; Kaiser et al., 2022; Kaiser & Menkhoff, 2017). Better financial behaviour, in turn, increases the likelihood that business plans and new ventures emerge (Bruhn & Zia, 2013; Démurger & Xu, 2011; Wahba & Zenou, 2012).

Prior studies nonetheless leave several gaps. The first empirical gap arises because financial education studies of migrants mostly target workers still abroad and remittance-receiving households rather than returnees starting businesses (Doi et al., 2014; Gibson et al., 2014; Seshan & Yang, 2014). The second empirical gap concerns inconsistent evidence on whether financial education changes behaviour (Fernandes et al., 2014; Kaiser et al., 2022; Kaiser & Menkhoff, 2017). The third empirical gap is the scarcity of Southeast Asian evidence, as research on returnee entrepreneurship is dominated by data from Africa, Eastern Europe, and China (Black & Castaldo, 2009; Démurger & Xu, 2011; Piracha & Vadean, 2010).

The first methodological gap is the reliance on cross-sectional surveys that cannot observe change before and after an intervention (Démurger & Xu, 2011; McCormick & Wahba, 2001; Wahba & Zenou, 2012). The second methodological gap is that outcome measurement often stops at knowledge without tracing behaviour and enterprise formation in sequence (Fernandes et al., 2014; Huston, 2010; Lusardi & Mitchell, 2014). The third methodological gap is the use of generic curricula that are not preceded by profiling of participants and local potential (Bruhn & Zia, 2013; Karlan & Valdivia, 2011; McKenzie & Woodruff, 2014).

The first conceptual gap is that financial literacy is frequently treated as an end outcome, whereas human capital theory regards it as an investment that should yield productive behaviour (Becker, 1964; Huston, 2010; Schultz, 1961). The second conceptual gap is the limited attention given to the family as the decision-making unit of migrant finances (Ashraf et al., 2015; Doi et al., 2014; Seshan & Yang, 2014). The third conceptual gap is that capital constraints are rarely modelled as the barrier between plans and realised enterprises (Banerjee et al., 2015; Berge et al., 2015; de Mel et al., 2008).

This study extends the work of Doi et al. (2014) and Kaiser et al. (2022). The former demonstrated the value of financial education for Indonesian migrant households, while the latter confirmed its effect on downstream behaviour. The extension shifts the focus to return migrants, involves families, and traces the full pathway from knowledge to enterprise. The objective is to test the effect of needs-based financial literacy training on financial literacy, financial behaviour, business planning, and business initiation among return migrants in Banyumas, Gombong, and Kebumen. The programme was implemented throughout 2025 as an output of the partnership between the Migrant Resource Center of Universitas Muhammadiyah Purwokerto and PT Emma Media Nusantara.

The novelty of the study lies in an intervention designed from regional profiling and in the staged testing of outcomes from knowledge to actual enterprise. Its theoretical contribution is an extension of human capital theory that identifies where knowledge investment stops generating economic returns. Its practical contribution is a replicable university–industry collaboration model for migrant protection agencies.

THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

Human Capital Theory

Human capital theory views knowledge, skills, and abilities as forms of capital that can be increased through investment in education and training (Becker, 1964; Schultz, 1961). Such investment yields returns in the form of productivity, earnings, and better economic decisions (Becker, 1964; Mincer, 1974). Training is regarded as the most direct form of investment because it targets capabilities that are immediately applied in economic activity (Becker, 1964). Financial literacy is a specific form of human capital. Huston (2010) defines it as financial knowledge combined with the ability to apply that knowledge. Lusardi and Mitchell (2014) model financial literacy as the outcome of an investment decision that shapes saving, planning, and investment behaviour. Financial education therefore functions as a means of adding to the stock of financial human capital (Kaiser et al., 2022).

Migration experience also builds human capital. Return migrants bring home savings, discipline, and skills that can be deployed for self-employment (Dustmann & Kirchkamp, 2002; McCormick & Wahba, 2001). These resources, however, acquire economic value only when complemented by the ability to manage business finances (Black & Castaldo, 2009; Démurger & Xu, 2011).

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The theory underpins this study because it explains the chain being tested: training adds knowledge, knowledge changes behaviour, and behaviour opens the way to enterprise. The same theory acknowledges that returns to knowledge depend on the availability of complementary factors of production, including financial capital (Becker, 1964; de Mel et al., 2008).

Hypothesis Development

Financial literacy training and financial literacy

Financial education is designed to improve individuals' understanding of financial concepts, products, and management (Atkinson & Messy, 2012; Huston, 2010). Groups with lower education and irregular incomes tend to have the lowest financial literacy and therefore stand to gain the most from training (Lusardi & Mitchell, 2014; Xu & Zia, 2012). National survey evidence shows that financial literacy in Indonesia remains uneven, particularly outside urban centres (OJK, 2022). Simple, contextual, and practice-based content is absorbed more readily by participants with basic schooling than formal accounting instruction (Drexler et al., 2014; Karlan & Valdivia, 2011). Content that is tailored to the life circumstances of the target group also improves engagement and retention (Fernandes et al., 2014; Kaiser & Menkhoff, 2017).

Human capital theory explains that training is an investment that directly enlarges an individual's stock of knowledge (Becker, 1964; Schultz, 1961). The theory predicts that the marginal return to training is highest where the initial stock of knowledge is lowest (Becker, 1964; Lusardi & Mitchell, 2014). Return migrants who left school early and spent years in routine jobs abroad fit this description (McCormick & Wahba, 2001; Wahba, 2015).

Consistent with this reasoning, meta-analyses of randomised experiments show that financial education significantly raises financial knowledge (Kaiser et al., 2022; Kaiser & Menkhoff, 2017). Large-scale evaluations in emerging economies report similar gains (Bruhn et al., 2016; Cole et al., 2011). Studies of migrant workers and their families also document improvements in financial knowledge after training (Doi et al., 2014; Gibson et al., 2014; Zuhaena et al., 2025). Taken together, these arguments suggest that a programme built from the actual needs of return migrants should raise their financial literacy. The first hypothesis is therefore stated as follows.

H1: Needs-based financial literacy training increases the financial literacy of return migrants.

Financial literacy training and financial behaviour

Financial knowledge is a precondition for disciplined financial behaviour, such as recording transactions and preparing budgets (Hilgert et al., 2003; Huston, 2010). Simple rules of thumb on separating business and household cash have been shown to change the financial practices of microentrepreneurs (Drexler et al., 2014).

Decisions on remittance use also change when migrants and their families receive information and encouragement to save (Ashraf et al., 2015; Seshan & Yang, 2014). Debt literacy and financial experience shape whether households avoid costly borrowing (Lusardi & Tufano, 2015). Behaviour change is most likely when the practices taught are concrete, low-cost, and repeatable (Drexler et al., 2014; Fernandes et al., 2014).

Human capital theory holds that knowledge investment yields returns only when it is applied in everyday economic decisions (Becker, 1964; Lusardi & Mitchell, 2014). Financial knowledge that is never translated into practice represents an unrealised return on investment (Huston, 2010; Kaiser et al., 2022). Involving family members strengthens application because household finances in migrant families are managed jointly (Doi et al., 2014).

Empirical evidence shows that financial education changes saving, record-keeping, and planning behaviour (Fernandes et al., 2014; Kaiser et al., 2022). Training migrants together with their families in Indonesia produced stronger savings outcomes than training either party alone (Doi et al., 2014). Motivational financial workshops similarly altered savings decisions in transnational households (Seshan & Yang, 2014), and savings interventions among El Salvadoran migrants increased accumulation when migrants gained control over accounts (Ashraf et al., 2015).

In light of this evidence, the training is expected to lead most participants to adopt the financial practices taught. Accordingly, the second hypothesis is:

H2: Needs-based financial literacy training leads most return migrants to adopt disciplined financial behaviour.

Financial literacy training and business planning

A business plan requires the ability to estimate costs, revenues, and capital needs (Bruhn & Zia, 2013; Karlan & Valdivia, 2011). Return migrants often have strong entrepreneurial aspirations but lack the capacity to design ventures realistically (Black & Castaldo, 2009; Piracha & Vadean, 2010). Individual mentoring after training helps participants translate knowledge into planning documents (McKenzie & Woodruff, 2014). Planning skills also improve when training is combined with follow-up support rather than delivered as a single event (Fairlie et al., 2015; McKenzie & Woodruff, 2014; Zuhaena et al., 2025).

Human capital theory treats the capacity to plan as a direct output of training investment (Becker, 1964; Schultz, 1961). Planning ability is a form of managerial capital that raises the expected return of subsequent business decisions (Bruhn & Zia, 2013). Return migrants who acquire this capacity are better positioned to deploy their savings productively (Dustmann & Kirchkamp, 2002; Mesnard, 2004).

Studies of entrepreneurship training across developing countries report improvements in planning and management practices after intervention (Bruhn & Zia, 2013; Drexler et al., 2014; Karlan & Valdivia, 2011; McKenzie & Woodruff, 2014). Training programmes that combine instruction and mentoring yield more concrete business plans than instruction alone (Fairlie et al., 2015).

Building on these findings, training accompanied by mentoring is expected to enable most participants to produce a business plan. The third hypothesis proposed is:

H3: Financial literacy training accompanied by mentoring leads most return migrants to prepare a business plan.

Financial literacy training and business initiation

Return migrants are more likely than non-migrants to become entrepreneurs because they possess savings and work experience (Démurger & Xu, 2011; Dustmann & Kirchkamp, 2002; McCormick & Wahba, 2001). Networks and skills acquired during migration further raise this likelihood (Wahba & Zenou, 2012; Woodruff & Zenteno, 2007). Adequate financial knowledge helps prospective entrepreneurs convert savings into productive assets (Ashraf et al., 2015; Yang, 2008). Return migrants who accumulate savings abroad can partly overcome credit market imperfections at home (Ilahi, 1999; Mesnard, 2004).

Human capital theory predicts that a larger stock of knowledge increases productive decisions, including the decision to start a business (Becker, 1964; Schultz, 1961). The theory also implies that knowledge raises the expected profitability of a venture and thus the incentive to launch it (Becker, 1964; Mincer, 1974). Several studies report that business training increases new business formation (Bruhn & Zia, 2013; Démurger & Xu, 2011; Piracha & Vadean, 2010). Programmes that combine skills with start-up support have generated substantial self-employment in poor regions (Blattman et al., 2014). Experimental evidence further indicates that business training increases the probability of business ownership among aspiring entrepreneurs (Fairlie et al., 2015).

On the basis of this line of argument, training is presumed to lead most mentored participants to realise a business. The fourth hypothesis is stated as follows.

H4: Financial literacy training accompanied by mentoring leads most return migrants to start or expand a business.

METHOD

The study adopted a quantitative approach with a one-group pretest–posttest pre-experimental design (Shadish et al., 2002). It was conducted from February to December 2025 in Banyumas, Gombong, and Kebumen as an output of the partnership between the Migrant Resource Center of Universitas Muhammadiyah Purwokerto and PT Emma Media Nusantara. The industry partner recruited participants, supported field logistics, and connected participants with business networks.

The population comprised return migrants interested in starting or developing a business. Participants were selected purposively through partner community networks and village officials. A profiling survey of 74 return migrants and three participatory focus group discussions informed the design of the training module. The training was attended by 86 participants in three cohorts from May to June 2025. The module contained five units: introduction to business finance, simple record-keeping, business planning based on local potential, productive use of remittances, and access to finance. Structured follow-up interviews were held with 45 participants one month after training, and 38 participants received business mentoring from June to August 2025.

Table 1. Operational definitions and measurement of variables

Variable	Operational definition	Indicators	Scale and data source
Financial literacy	Participants' knowledge and understanding of business financial management	Business finance concepts; separating business and household finances; simple record-keeping; remittance planning; investment and financing; simple business plan	0–100 score; pretest and posttest (n = 86)
Financial behaviour	Application of the financial practices taught after training	Separating business and household finances; routine record-keeping; structured remittance-use plan	Dichotomous; follow-up interview (n = 45)
Business plan	Completion of a specific and realistic business plan	Business plan document produced during mentoring	Dichotomous; mentoring records (n = 38)
Business initiation	Start of a new business or expansion of an existing one	Business operating or expanded during mentoring	Dichotomous; mentoring records (n = 38)

The first hypothesis was tested with a paired-sample t-test and a Wilcoxon signed-rank test on the mean scores of the six literacy domains. The magnitude of improvement was assessed with the normalised gain (Hake, 1998), the ratio of the actual gain to the maximum possible gain, classified as low (< 0.3), medium ($0.3–0.7$), or high (> 0.7). The second to fourth hypotheses were tested with one-sided binomial tests against a proportion of 0.50, consistent with the formulation “most participants”. The significance level was set at 0.05.

RESULTS

Respondent Profile

Respondents were predominantly women of prime working age who had worked in Malaysia and Taiwan (Table 2). More than half had no business at the time of profiling, and fewer than one in five ran a business older than one year.

Table 2. Profile of return migrants (n = 74)

Characteristic	Category	%
Gender	Female	68
	Male	32
Age	25–35 years	31
	36–45 years	44
	46–55 years	25
Destination country	Malaysia	42
	Taiwan	28
	Hong Kong	18
	Other	12
Years worked abroad	< 2	19
	2–5	48
	> 5	33
Business status	No business	54
	Start-up (< 1 year)	28
	Established (> 1 year)	18

The focus group discussions revealed distinct regional opportunity profiles. Participants in Banyumas were most interested in food processing and care services, those in Gombong in automotive repair and construction, and those in Kebumen in small-scale manufacturing and digital services. Across regions, interest was greatest in food businesses based on local products (34%), followed by modern agriculture (22%), trade and e-commerce (19%), crafts (15%), and services (10%). Limited capital was named as the main barrier in all three areas.

Test of the First Hypothesis

Average attendance reached 91% (Banyumas 94%, Gombong 89%, Kebumen 90%). Financial literacy scores rose in every domain, from a mean of 40.2 to 72.4 (Table 3). All domains achieved a medium normalised gain. The largest absolute gain occurred in business planning, while investment and financing recorded the lowest normalised gain and remained the weakest domain after training.

Table 3. Financial literacy scores before and after training (n = 86)

Literacy domain	Pretest	Posttest	Gain	N-gain	Category
Preparing a simple business plan	29.4	68.5	39.1	0.55	Medium
Simple record-keeping	38.5	71.9	33.4	0.54	Medium
Separating business and household finances	41.8	74.2	32.4	0.56	Medium
Investment and financing	33.2	64.8	31.6	0.47	Medium
Planning remittance use	45.7	76.3	30.6	0.56	Medium
Basic business finance concepts	52.3	78.6	26.3	0.55	Medium
Mean	40.2	72.4	32.2	0.54	Medium

The paired-sample t-test showed a significant increase, $t(5) = 18.95$, $p < 0.001$, with a mean domain gain of 32.2 points (SD = 4.17). The Wilcoxon signed-rank test produced a consistent result, $W = 21$, $p = 0.016$, as every domain improved. The first hypothesis is supported.

Tests of the Second to Fourth Hypotheses

Table 4. Binomial tests of financial behaviour and business outcomes

Hypothesis	Indicator	Count	Proportion	p (one-sided, > 0.50)	Decision
H2	Separating business and household finances	35 of 45	0.78	< 0.001	Supported
H2	Routine record-keeping	29 of 45	0.64	0.036	Supported
H2	Structured remittance-use plan	32 of 45	0.71	0.003	Supported
H3	Business plan prepared	28 of 38	0.74	0.003	Supported
H4	Business started or expanded	8 of 38	0.21	0.999	Not supported

All three behavioural indicators were adopted by a significant majority of participants, so the second hypothesis is supported. Most mentored participants also produced a business plan, supporting the third hypothesis. In contrast, the proportion of participants who had started or expanded a business was significantly below one half (one-sided test < 0.50 , $p < 0.001$), so the fourth hypothesis is not supported. A further 12 participants (32%) were still

preparing to launch. Supporting evidence reinforces these results. Eighty-one percent of participants reported that family members had become more involved in household economic decisions after the family sessions, which engaged 61 family members across three regions. Mentoring records indicate that participants with access to capital from remittance savings or family loans realised their businesses faster than those without. Twenty-nine participants were linked to business networks and market information facilitated by PT Emma Media Nusantara. Satisfaction was high, with the strongest ratings given to facilitator quality and the programme's usefulness for business development.

The pattern of results describes a funnel. Knowledge improved for nearly all participants, behaviour changed for a clear majority, plans were completed by roughly three in four mentored participants, and businesses were realised by about one in five. The steepest contraction occurs between planning and realisation.

DISCUSSION

The support for the first hypothesis shows that needs-based financial literacy training substantially increases the financial knowledge of return migrants. This finding reinforces human capital theory, which regards training as a direct investment in an individual's stock of knowledge (Becker, 1964; Schultz, 1961). It is consistent with meta-analytic evidence on the effect of financial education on knowledge (Kaiser et al., 2022; Kaiser & Menkhoff, 2017) and with studies of migrant workers and their households (Doi et al., 2014; Gibson et al., 2014). The low baseline scores confirm that limited financial literacy is a genuine barrier for return migrants, mirroring findings among groups with lower education and irregular incomes (Lusardi & Mitchell, 2014; Xu & Zia, 2012).

The uniformity of improvement across domains is noteworthy. Every domain moved from a weak to a moderate level, suggesting that the profiling-led design succeeded in matching content to the starting point of participants. Generic programmes often deliver uneven gains because content is pitched above or below the audience (McKenzie & Woodruff, 2014). The present programme avoided this problem by using the profiling survey and focus groups to identify where knowledge was weakest, an approach that operationalises the principle that training returns are highest where initial stocks are lowest (Becker, 1964).

The persistence of investment and financing as the weakest domain deserves attention. Concepts such as returns, risk, interest, and credit eligibility are more abstract than separating cash or recording sales. Evidence shows that rule-based content is absorbed more easily than complex financial reasoning (Drexler et al., 2014). The finding implies that financing literacy requires more time, more practice with real credit products, or direct engagement with financial institutions. It also connects to the later failure of the fourth hypothesis: participants who understand financing less well may be less able to approach lenders with confidence.

The support for the second hypothesis indicates that knowledge was rapidly translated into behaviour. Most participants began separating business and household finances, recording transactions, and planning the use of remittances. These are precisely the simple rules of thumb that microentrepreneurs adopt most readily (Drexler et al., 2014). The finding aligns with evidence that financial education changes behaviour as well as knowledge (Fernandes et al., 2014; Kaiser et al., 2022). It also answers the empirical gap concerning inconsistent behavioural effects, by suggesting that effects are more likely when behaviours are concrete and immediately applicable.

Separating finances was the most widely adopted practice, while routine record-keeping was the least. This ordering is intuitive. Separation requires a single decision, such as opening a separate wallet or account, whereas record-keeping demands daily effort. The result is consistent with behavioural research showing that one-off changes are adopted more easily than habits requiring sustained attention (Drexler et al., 2014; Fernandes et al., 2014). Programmes should therefore pair record-keeping instruction with tools that reduce effort, such as simple ledgers or mobile applications.

Family involvement appears to have reinforced behaviour change. In migrant households, financial decisions are made jointly and remittances are frequently managed by spouses or parents. The programme's family sessions echo Doi et al. (2014), who found that training both migrants and family members produced stronger outcomes than training either alone, and Ashraf et al. (2015), who showed that control over savings shapes accumulation in transnational households. The observation that participants with engaged families showed greater commitment suggests that family inclusion should be a standard element of reintegration programmes rather than an optional addition. This addresses the conceptual gap concerning the family as the decision-making unit of migrant finances.

The support for the third hypothesis shows that combining training with mentoring produces realistic business plans. Planning capacity is a direct output of human capital investment (Becker, 1964) and a component of managerial capital (Bruhn & Zia, 2013). The result is consistent with entrepreneurship training studies that report improved planning practices (Karlan & Valdivia, 2011; McKenzie & Woodruff, 2014) and with evidence that mentoring strengthens the concreteness of plans (Fairlie et al., 2015). Regional opportunity mapping helped participants design plans that matched local markets and the skills they had acquired abroad, such as cooking and care work in Banyumas or technical trades in Gombong and Kebumen.

The rejection of the fourth hypothesis is the most important finding of the study. Improved knowledge, behaviour, and plans were not sufficient to lead most participants to start a business within the programme period. Participants with access to capital realised their ventures faster, while those without access remained at the planning stage. This mirrors the wider literature, which finds that business training improves practices but has limited effects on

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business creation when capital constraints remain binding (de Mel et al., 2008; McKenzie & Woodruff, 2014). Field experiments that combined training with grants found that the two inputs are complements: training alone or capital alone produces smaller effects than both together (Berge et al., 2015; Blattman et al., 2014).

This result extends human capital theory in a specific way. The theory predicts that knowledge raises the expected return of a venture, but it also implies that realising that return requires complementary factors of production (Becker, 1964). The evidence here locates the precise point in the pathway where the absence of financial capital interrupts the conversion of human capital into economic output. It addresses the conceptual gap concerning capital constraints as the barrier between plans and enterprises (Banerjee et al., 2015; de Mel et al., 2008). Return migrants are often assumed to be capital-rich because of their savings, yet many had already spent remittances on housing, education, and consumption before receiving training (Adams & Cuecuecha, 2010; Yang, 2008). Capital that was not preserved before return cannot be invested afterwards.

The findings also speak to the timing of interventions. If remittances are largely committed before return, financial education delivered only after return arrives too late to protect investable savings. Evidence from transnational households suggests that interventions during migration can shift savings behaviour (Ashraf et al., 2015; Seshan & Yang, 2014). A continuum of support beginning before departure, continuing during work abroad, and extending after return would allow knowledge to be applied while savings still exist.

A related implication concerns the sequencing of support within reintegration programmes. The results suggest that financial literacy training is most valuable as the first stage of a longer pathway rather than as a stand-alone intervention. Once participants have learned to separate finances, record transactions, and prepare plans, they become more credible borrowers and more efficient users of grants or loans (Berge et al., 2015; Cole et al., 2011). Training therefore increases the expected return on subsequent capital support, while capital support increases the return on training. Programmes that deliver both in sequence are likely to produce more enterprises per unit of funding than programmes that deliver either alone.

The partnership model contributed to the programme's reach and follow-through. The university designed the curriculum, instruments, and mentoring, while the industry partner provided access to returnee communities, logistics, and market connections. This division of roles enabled the programme to exceed its recruitment targets and to link participants to business networks. Universities and private partners in migrant-sending regions can thus jointly deliver reintegration services that neither could provide alone, a pattern consistent with calls for multi-actor reintegration support (Cassarino, 2004).

Taken together, the results describe a funnel in which each stage narrows the population that progresses to the next. Knowledge interventions reach almost everyone, behaviour change reaches most, planning reaches many, but enterprise reaches only those who also have capital.

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Programmes and policies should be judged by whether they widen the narrowest part of this funnel.

CONCLUSION

This study concludes that needs-based financial literacy training delivered by the Migrant Resource Center of Universitas Muhammadiyah Purwokerto and PT Emma Media Nusantara significantly increases the financial literacy of return migrants across all domains. The training also leads most participants to adopt disciplined financial behaviour and to prepare business plans. However, it does not lead most participants to start or expand a business, because access to capital remains limited. The findings confirm that investment in human capital effectively changes knowledge and behaviour but requires complementary financial capital to produce real enterprises. Theoretically, the study extends human capital theory by identifying the stage at which knowledge investment ceases to yield economic output without financial capital. Practically, migrant protection agencies, local governments, financial institutions, and industry partners should integrate needs-based profiling, financial education, family involvement, mentoring, and access to finance and markets within a single programme. Linking trained returnees to microfinance institutions, rural banks, cooperatives, and government credit schemes, and recognising migration records in credit assessment, would help convert plans into businesses. Financial education should also begin before departure so that savings are protected while they still exist.

The study has several limitations. The single-group design without a comparison group does not permit strict causal inference, as improvements may partly reflect maturation or testing effects. The analysis of financial literacy relied on domain-level means because individual scores were not available, which limits the precision of inferential tests. Behaviour change was self-reported, measured over a short period, and observed only among a subset of participants. The knowledge test was developed specifically for the programme, and its validity and reliability were not formally assessed. Business initiation was recorded during a relatively short mentoring period, which may underestimate later business formation.

Future research should employ quasi-experimental designs with comparison or wait-list groups, retain individual-level data for stronger statistical testing, and follow participants over longer periods to assess business survival and income. Studies should also test whether combining financial literacy training with access to credit or start-up grants produces higher rates of business initiation than training alone. Comparative research across migrant-sending regions and destination corridors would clarify how local opportunity structures shape the conversion of knowledge into enterprise. Finally, research on interventions delivered before departure and during migration could reveal whether earlier financial education preserves more capital for investment after return.

Acknowledgements

The authors thank PT Emma Media Nusantara for its partnership in participant outreach, field implementation, and business network facilitation, and the return migrants and their families in Banyumas, Gombong, and Kebumen who participated in the programme.

REFERENCES

- Adams, R. H., & Cuecuecha, A. (2010). Remittances, household expenditure and investment in Guatemala. *World Development*, 38(11), 1626–1641.
- Ashraf, N., Aycinena, D., Martínez A., C., & Yang, D. (2015). Savings in transnational households: A field experiment among migrants from El Salvador. *Review of Economics and Statistics*, 97(2), 332–351.
- Atkinson, A., & Messy, F.-A. (2012). Measuring financial literacy: Results of the OECD/INFE pilot study (OECD Working Papers on Finance, Insurance and Private Pensions No. 15). OECD Publishing.
- Banerjee, A., Duflo, E., Glennerster, R., & Kinnan, C. (2015). The miracle of microfinance? Evidence from a randomized evaluation. *American Economic Journal: Applied Economics*, 7(1), 22–53.
- Becker, G. S. (1964). Human capital: A theoretical and empirical analysis, with special reference to education. Columbia University Press.
- Berge, L. I. O., Bjorvatn, K., & Tungodden, B. (2015). Human and financial capital for microenterprise development: Evidence from a field and lab experiment. *Management Science*, 61(4), 707–722.
- Black, R., & Castaldo, A. (2009). Return migration and entrepreneurship in Ghana and Côte d'Ivoire: The role of capital transfers. *Tijdschrift voor Economische en Sociale Geografie*, 100(1), 44–58.
- Blattman, C., Fiala, N., & Martinez, S. (2014). Generating skilled self-employment in developing countries: Experimental evidence from Uganda. *Quarterly Journal of Economics*, 129(2), 697–752.
- BP2MI. (2024). Data penempatan dan perlindungan pekerja migran Indonesia tahun 2023 [Placement and protection data of Indonesian migrant workers 2023]. Badan Pelindungan Pekerja Migran Indonesia.
- Bruhn, M., de Souza Leão, L., Legovini, A., Marchetti, R., & Zia, B. (2016). The impact of high school financial education: Evidence from a large-scale evaluation in Brazil. *American Economic Journal: Applied Economics*, 8(4), 256–295.
- Bruhn, M., & Zia, B. (2013). Stimulating managerial capital in emerging markets: The impact of business training for young entrepreneurs. *Journal of Development Effectiveness*, 5(2), 232–266.

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- Cassarino, J.-P. (2004). Theorising return migration: The conceptual approach to return migrants revisited. *International Journal on Multicultural Societies*, 6(2), 253–279.
- Cole, S., Sampson, T., & Zia, B. (2011). Prices or knowledge? What drives demand for financial services in emerging markets? *The Journal of Finance*, 66(6), 1933–1967.
- de Mel, S., McKenzie, D., & Woodruff, C. (2008). Returns to capital in microenterprises: Evidence from a field experiment. *Quarterly Journal of Economics*, 123(4), 1329–1372.
- Démurger, S., & Xu, H. (2011). Return migrants: The rise of new entrepreneurs in rural China. *World Development*, 39(10), 1847–1861.
- Doi, Y., McKenzie, D., & Zia, B. (2014). Who you train matters: Identifying combined effects of financial education on migrant households. *Journal of Development Economics*, 109, 39–55.
- Drexler, A., Fischer, G., & Schoar, A. (2014). Keeping it simple: Financial literacy and rules of thumb. *American Economic Journal: Applied Economics*, 6(2), 1–31.
- Dustmann, C., & Kirchkamp, O. (2002). The optimal migration duration and activity choice after re-migration. *Journal of Development Economics*, 67(2), 351–372.
- Fairlie, R. W., Karlan, D., & Zinman, J. (2015). Behind the GATE experiment: Evidence on effects of and rationales for subsidized entrepreneurship training. *American Economic Journal: Economic Policy*, 7(2), 125–161.
- Fernandes, D., Lynch, J. G., & Netemeyer, R. G. (2014). Financial literacy, financial education, and downstream financial behaviors. *Management Science*, 60(8), 1861–1883.
- Gibson, J., McKenzie, D., & Zia, B. (2014). The impact of financial literacy training for migrants. *The World Bank Economic Review*, 28(1), 130–161.
- Hake, R. R. (1998). Interactive-engagement versus traditional methods: A six-thousand-student survey of mechanics test data for introductory physics courses. *American Journal of Physics*, 66(1), 64–74.
- Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. (2003). Household financial management: The connection between knowledge and behavior. *Federal Reserve Bulletin*, 89, 309–322.
- Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs*, 44(2), 296–316.
- ILO. (2021). ILO global estimates on international migrant workers: Results and methodology (3rd ed.). International Labour Office.
- Ilahi, N. (1999). Return migration and occupational change. *Review of Development Economics*, 3(2), 170–186.
- Kaiser, T., Lusardi, A., Menkhoff, L., & Urban, C. (2022). Financial education affects financial knowledge and downstream behaviors. *Journal of Financial Economics*, 145(2), 255–272.

- Kaiser, T., & Menkhoff, L. (2017). Does financial education impact financial literacy and financial behavior, and if so, when? *The World Bank Economic Review*, 31(3), 611–630.
- Karlan, D., & Valdivia, M. (2011). Teaching entrepreneurship: Impact of business training on microfinance clients and institutions. *Review of Economics and Statistics*, 93(2), 510–527.
- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44.
- Lusardi, A., & Tufano, P. (2015). Debt literacy, financial experiences, and overindebtedness. *Journal of Pension Economics and Finance*, 14(4), 332–368.
- McAuliffe, M., & Oucho, L. A. (Eds.). (2024). *World migration report 2024*. International Organization for Migration.
- McCormick, B., & Wahba, J. (2001). Overseas work experience, savings and entrepreneurship amongst return migrants to LDCs. *Scottish Journal of Political Economy*, 48(2), 164–178.
- McKenzie, D., & Woodruff, C. (2014). What are we learning from business training and entrepreneurship evaluations around the developing world? *The World Bank Research Observer*, 29(1), 48–82.
- Mesnard, A. (2004). Temporary migration and capital market imperfections. *Oxford Economic Papers*, 56(2), 242–262.
- Mincer, J. (1974). Schooling, experience, and earnings. National Bureau of Economic Research.
- OJK. (2022). *Survei nasional literasi dan inklusi keuangan 2022 [National survey of financial literacy and inclusion 2022]*. Otoritas Jasa Keuangan.
- Piracha, M., & Vadean, F. (2010). Return migration and occupational choice: Evidence from Albania. *World Development*, 38(8), 1141–1155.
- Ratha, D., Chandra, V., Kim, E. J., Plaza, S., & Shaw, W. (2023). Migration and development brief 39: Leveraging diaspora finances for private capital mobilization. KNOMAD–World Bank.
- Schultz, T. W. (1961). Investment in human capital. *American Economic Review*, 51(1), 1–17.
- Seshan, G., & Yang, D. (2014). Motivating migrants: A field experiment on financial decision-making in transnational households. *Journal of Development Economics*, 108, 119–127.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Houghton Mifflin.
- Wahba, J. (2015). Selection, selection, selection: The impact of return migration. *Journal of Population Economics*, 28(3), 535–563.
- Wahba, J., & Zenou, Y. (2012). Out of sight, out of mind: Migration, entrepreneurship and social capital. *Regional Science and Urban Economics*, 42(5), 890–903.

- Woodruff, C., & Zenteno, R. (2007). Migration networks and microenterprises in Mexico. *Journal of Development Economics*, 82(2), 509–528.
- Xu, L., & Zia, B. (2012). Financial literacy around the world: An overview of the evidence with practical suggestions for the way forward (Policy Research Working Paper No. 6107). World Bank.
- Yang, D. (2008). International migration, remittances and household investment: Evidence from Philippine migrants' exchange rate shocks. *The Economic Journal*, 118(528), 591–630.
- Yang, D. (2011). Migrant remittances. *Journal of Economic Perspectives*, 25(3), 129–152.
- Zuhaena, F., Cahyo, H., Balafif, A. G. S., Rahmawati, A. S., & Tiyas, A. S. (2025). Hybrid community empowerment for Indonesian migrant workers: Strengthening financial and entrepreneurial capacity in Malaysia and Thailand. *CITAKARYA Jurnal Pengabdian Masyarakat*, 3(04), 107–118.
- Zuhaena, F., Masita, T. E., Araujo, J. F. D. S., Safitri, D., & Febriana, A. (2026). Sustainable entrepreneurial empowerment for Indonesian migrant workers in Thailand: A hybrid community mentoring approach. *CITAKARYA Jurnal Pengabdian Masyarakat*, 4(02).