

# Financial Inclusion and COVID-19 Effects on Financial Well-Being of Amanah Ikhtiar Malaysia's Micro-Entrepreneurs

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## Abstract

The COVID-19 pandemic increased the vulnerability of low-income micro-entrepreneurs, particularly women who rely on microfinance as a pathway to financial inclusion and improved financial well-being. This study examined the effects of financial inclusion and Amanah Ikhtiar Malaysia (AIM) micro financing adoption on financial well-being among women micro-entrepreneurs, as well as the mediating role of micro financing adoption and the moderating role of COVID-19 consequences. A cross-sectional survey was conducted among 278 women micro-entrepreneurs who were active AIM borrowers from the Tapah and Tanjong Malim branches in Perak, Malaysia. Data were collected using self-administered questionnaires and analysed using descriptive statistics and the PROCESS macro in SPSS. The results showed that financial inclusion had a strong and significant positive effect on AIM micro financing adoption. Both financial inclusion and micro financing adoption significantly improved financial well-being. Further analysis revealed that AIM micro financing adoption partially mediated the relationship between financial inclusion and financial well-being, indicating that financial inclusion enhanced financial well-being both directly and through increased use of micro financing. However, COVID-19 consequences did not significantly moderate the relationship between micro financing adoption and financial well-being. These findings highlight the important role of financial inclusion and microfinance in improving the financial well-being of low-income women micro-entrepreneurs, even during periods of economic disruption.

**Keywords:** Financial Inclusion, Financial Well-Being, COVID-19, Micro-Entrepreneurs, Amanah Ikhtiar Malaysia (AIM)

## Introduction

Financial inclusion has become a central policy instrument in the global agenda to reduce poverty, promote inclusive growth, and enhance financial well-being, especially among low-income and vulnerable groups. Access to and usage of formal financial services enable

individuals to smooth consumption, invest in productive activities, manage risks, and build resilience against shocks (Demirgüç-Kunt et al., 2018; The World Bank, 2022). For women micro-entrepreneurs, microfinance programmes have been widely promoted as practical mechanisms to enhance financial inclusion and socio-economic empowerment (Ahmad et al., 2020; Mader, 2018).

In Malaysia, financial inclusion has long been embedded in national development strategies and central bank policies (Bank Negara Malaysia, 2015). Amanah Ikhtiar Malaysia (AIM), established in 1987, is among the earliest and largest microfinance institutions dedicated to poverty alleviation and empowerment of low-income households, particularly women, through Shariah-compliant micro financing schemes. AIM's programmes offer small loans, group-based mechanisms, and complementary support services to catalyse entrepreneurship and income generation among the poor.

The outbreak of COVID-19 and associated containment measures severely affected micro-enterprises worldwide through reduced demand, disruptions to operations, and heightened uncertainty (Ozili, 2020b; Sumner et al., 2020). In Malaysia, small and micro-businesses were disproportionately impacted, with many experiencing income losses and temporary or permanent closure. For micro-entrepreneurs who rely heavily on self-employment income and microfinance repayment cycles, such shocks can directly undermine their financial well-being and jeopardise their financial inclusion trajectory (Malik et al., 2020; Ngong et al., 2021).

Financial well-being in this study draws on the Consumer Financial Protection Bureau's (CFPB) definition as a subjective, multi-dimensional state whereby individuals feel in control of day-to-day finances, can absorb financial shocks, are on track to meet financial goals, and have financial freedom to make life choices (CFPB, 2017; Brüggem et al., 2017). This approach reflects a shift from purely objective measures (e.g., income or asset levels) to perceptions of security and freedom, consistent with broader well-being literature (Van Praag et al., 2001).

Existing empirical studies suggest that access to formal financial services and financial inclusion positively influence financial well-being and life satisfaction, including among micro-entrepreneurs (Mahdzan et al., 2020; Mukong and Amadhila, 2021; Nanda & Banerjee, 2021). However, three important gaps remain. First, many studies focus on objective indicators (income, consumption) with limited attention to subjective financial well-being, especially using the CFPB framework. Second, there is relatively little evidence on how microfinance adoption mediates the link between financial inclusion and financial well-being among low-income women micro-entrepreneurs in the Malaysian context. Third, the moderating impact of crisis-related shocks, specifically COVID-19 on the relationship between microfinance usage and financial well-being remains under-explored.

This study addresses these gaps by focusing on AIM's women micro-entrepreneurs in Perak, Malaysia. Integrating Ozili's financial inclusion theory for vulnerable groups and the CFPB financial well-being model, we propose that financial inclusion enhances financial well-being directly and indirectly via micro financing adoption, while COVID-19 consequences may weaken the benefit of microfinance for financial well-being.

## Research Objectives and Hypotheses

The study aimed to:

1. Examine the effect of financial inclusion on AIM micro financing adoption.
2. Examine the effects of financial inclusion and AIM micro financing adoption on financial well-being of AIM's micro-entrepreneurs.
3. Investigate the mediating role of AIM micro financing adoption in the relationship between financial inclusion and financial well-being.
4. Examine the moderating role of COVID-19 consequences on the relationship between AIM micro financing adoption and financial well-being.

Accordingly, the following hypotheses were proposed:

- **H1:** Financial inclusion significantly affects AIM micro financing adoption.
- **H2:** Financial inclusion and AIM micro financing adoption significantly affect financial well-being of AIM's micro-entrepreneurs.
- **H3:** AIM micro financing adoption significantly mediates the relationship between financial inclusion and financial well-being of AIM's micro-entrepreneurs.
- **H4:** COVID-19 consequences significantly moderate the relationship between AIM micro financing adoption and financial well-being of AIM's micro-entrepreneurs.

## Materials and Methods

### *Research Design and Sample*

This study employed a quantitative, cross-sectional survey design. A self-administered questionnaire was used to collect data from AIM borrowers who are active micro-entrepreneurs. The population comprised women borrowers in AIM Tapah and Tanjung Malim branches in Perak. Purposive sampling was applied to select borrowers who had been involved in AIM's micro financing programmes and operated micro-enterprises.

A total of 300 questionnaires were distributed through AIM staff during weekly central meetings. Of these, 289 questionnaires were returned, representing a high initial response. After data screening for missing values, outliers, and other quality checks, 278 valid responses were retained for final analysis (response rate = 92.67%).

### *Measures*

All constructs were measured using multi-item Likert-type scales adapted from established instruments and prior studies. Items were translated and contextually adapted where necessary to reflect AIM's programmes and the Malaysian micro-entrepreneurial setting.

### *Financial Inclusion*

Financial inclusion (FI) captured respondents' access to and usage of a range of formal financial services (e.g., savings, credit, insurance, payment services) and their perceived ease, convenience, and suitability. The scale was developed by synthesising indicators from the global financial inclusion literature and policy frameworks (Demirgüç-Kunt et al., 2018; Mialou et al., 2017; The World Bank, 2013) and tailored to reflect AIM clients' context. Items were rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), with higher scores indicating higher perceived financial inclusion.

### *AIM Micro Financing Adoption*

AIM micro financing adoption (MFA) refers to the extent and intensity with which borrowers engage with AIM's financing schemes. Following prior microfinance research (Ahmad et al., 2020; Haque et al., 2019; Omar, 2010), MFA was measured by items capturing duration of participation, frequency of loan cycles, loan size sufficiency, and perceived usefulness of the financing for business operations and household welfare. Responses were recorded on a 5-point Likert scale, with higher scores signalling greater adoption.

### *COVID-19 Consequences*

COVID-19 consequences (COV) represent the perceived adverse impacts of the pandemic on micro-entrepreneurs' businesses and financial situation. Items assessed reductions in sales, restricted operating hours, difficulties in loan repayment, and forced business closure during the pandemic. Respondents rated the degree to which they experienced each consequence on a 5-point scale (1 = not at all to 5 = to a very great extent). Higher scores indicate more severe COVID-19-related disruptions.

### *Financial Well-Being*

Financial well-being (FWB) was measured using a subjective scale adapted from the CFPB Financial Well-Being Scale, which conceptualises financial well-being through four elements: (1) control over day-to-day, month-to-month finances; (2) capacity to absorb financial shocks; (3) progress toward financial goals; and (4) financial freedom to make choices (CFPB, 2017; Brügggen et al., 2017). Items were adapted to the Malaysian micro-entrepreneur context and rated on a 5-point Likert scale, where higher scores indicate better financial well-being.

### *Data Collection Procedures*

Following instrument refinement and pilot testing, the final questionnaire was printed and prepared for distribution. The researcher obtained formal permission from AIM headquarters and coordinated with branch staff at Tapah and Tanjung Malim to administer the questionnaires. AIM staff distributed questionnaires during weekly central meetings over several sessions, and completed questionnaires were then collected by the researcher for analysis.

### *Ethical Considerations*

Ethical principles were observed throughout the data collection process, including voluntary participation, anonymity, confidentiality, and disclosure (Bhattacharjee, 2012). Participation was strictly voluntary, and respondents could decline or withdraw without any adverse consequences. Anonymity was maintained by not collecting personally identifiable information, while confidentiality was ensured by limiting data access to the researcher and using data solely for academic purposes. The study protocol was reviewed and approved by the institutional research ethics procedures, and participants were informed of the study's purpose before providing consent.

### *Data Screening and Analysis*

Preliminary analyses were carried out to check data entry accuracy, missing values, normality, outliers, and multicollinearity. Data entry was examined to ensure that no values fell outside the allowed coding ranges (Pallant, 2013). Missing values were inspected and managed at an early stage. Normality was assessed using skewness and kurtosis values with  $\pm 2$  as the rule-

of-thumb cut-off (Garson, 2012), while univariate outliers were detected via standardized z-scores ( $\pm 4$ ) and multivariate outliers via Mahalanobis distance with significance levels of 0.001 or 0.005 (Coakes & Steed, 2003; Tabachnick & Fidell, 2007; Hair et al., 2010). Multicollinearity was evaluated using tolerance ( $>0.20$ ) and variance inflation factor ( $VIF < 5$ ) criteria.

Descriptive statistics were used to summarise demographic characteristics and key study variables. Hypotheses were tested using the PROCESS macro (version 4.2) in SPSS, which implements ordinary least squares regression and bootstrapping techniques for mediation and moderation analysis (Hayes, 2012). Direct effects (H1 and H2) were assessed via linear regression models, the mediation effect (H3) via indirect effect estimation with bootstrapped confidence intervals, and the moderation effect (H4) via interaction terms between COVID-19 consequences and micro financing adoption. A 95% bias-corrected bootstrapped confidence interval that excluded zero was taken as evidence of a significant indirect effect.

## **Results**

### *Respondent Profile*

The respondents were predominantly women micro-entrepreneurs in their late 30s to late 40s. Most were aged between 38 and 47 years (33.8%), followed by those aged 48–57 years (30.6%). The majority were married (82%), with almost half (49.3%) living with one to three dependents. A large majority were Malay (92.8%), and 71.2% had completed secondary education.

In terms of enterprise characteristics, 43.9% operated food and beverage businesses, and 83.8% reported that business income was their main source of household income. Micro financing adoption characteristics indicate that 37.4% had participated in AIM's financing scheme for more than 11 years, with 33.1% having taken more than 11 rounds of financing. The decision to adopt AIM micro financing was largely driven by the intention to start a business (48.6%) or expand an existing business (47.5%). Most respondents lived within 5 km of an AIM branch and were introduced to AIM financing primarily through relatives and friends (83.1%).

Regarding financing sufficiency and outcomes, 88.5% reported that AIM financing amounts were sufficient to run their enterprises, although some supplemented with savings, family support, or Islamic pawnbroking (*ar-Rahnu*). Notably, 97.5% observed an increase in income after utilising AIM micro financing: 79.4% initially earned less than RM 2,000 per month, but after joining AIM, 80.6% reported monthly incomes between RM 1,000 and RM 4,000, and 13% earned above RM 4,000.

During the COVID-19 pandemic, 45.3% of respondents experienced decreased sales, 36.7% faced limited business operating hours, and 12.2% reported difficulty making loan repayments. These issues forced more than half of the respondents to temporarily close their businesses at some point during the pandemic.

## Hypothesis Testing

### *H1: Effect of Financial Inclusion on Micro Financing Adoption*

Simple linear regression analysis revealed that financial inclusion had a strong, positive, and significant effect on AIM micro financing adoption. The model explained 61.28% of the variance in micro financing adoption ( $R^2 = 0.6128$ ,  $F(1, 276) = 436.88$ ,  $p < 0.001$ ). The regression coefficient for financial inclusion was  $\beta = 0.8485$  ( $SE = 0.0406$ ,  $t = 20.90$ ,  $p < 0.001$ ), with 95% confidence intervals [0.7686, 0.9284] that did not include zero. This indicates that higher perceived financial inclusion is associated with greater adoption of AIM micro financing, thus supporting H1.

### *H2: Effects of Financial Inclusion and Micro Financing Adoption on Financial Well-Being*

A multiple regression model was estimated with financial inclusion and micro financing adoption as predictors of financial well-being. The model accounted for 54.52% of the variance in financial well-being ( $R^2 = 0.5452$ ,  $F(4, 273) = 81.82$ ,  $p < 0.001$ ). Financial inclusion had a significant positive effect on financial well-being ( $\beta = 0.2475$ ,  $SE = 0.0727$ ,  $t = 3.41$ ,  $p = 0.0008$ , 95% CI [0.1044, 0.3906]). AIM micro financing adoption also had a significant positive effect on financial well-being ( $\beta = 0.5189$ ,  $SE = 0.0675$ ,  $t = 7.69$ ,  $p < 0.001$ , 95% CI [0.3860, 0.6517]).

These findings confirm that both higher financial inclusion and greater adoption of AIM micro financing are associated with higher subjective financial well-being among AIM's micro-entrepreneurs, thereby supporting H2.

### *H3: Mediating Role of Micro Financing Adoption*

The mediation model specified financial inclusion as the independent variable, financial well-being as the dependent variable, and AIM micro financing adoption as the mediator. The direct effect of financial inclusion on financial well-being remained significant in the presence of the mediator ( $\beta = 0.2475$ ,  $p = 0.0008$ ). The indirect effect of financial inclusion on financial well-being via micro financing adoption was  $\beta = 0.4402$ , with a bootstrapped standard error of 0.0741 and 95% bias-corrected confidence interval [0.2880, 0.5825], which did not include zero.

These results indicate that AIM micro financing adoption partially mediates the relationship between financial inclusion and financial well-being: financial inclusion improves financial well-being both directly and indirectly by enhancing micro financing adoption. H3 is therefore supported.

### *H4: Moderating Role of COVID-19 Consequences*

To test H4, an interaction term between AIM micro financing adoption and COVID-19 consequences was included in the regression model predicting financial well-being. The moderation analysis showed that the interaction effect was not significant ( $\beta = 0.0972$ ,  $SE = 0.0771$ ,  $t = 1.26$ ,  $p = 0.2084$ ). The 95% confidence interval [-0.0545, 0.2489] included zero, indicating that COVID-19 consequences do not significantly moderate the relationship between micro financing adoption and financial well-being.

Thus, H4 is not supported. Although respondents experienced notable pandemic-related disruptions, these did not statistically alter the positive association between micro financing adoption and financial well-being.

## **Discussion**

This study investigated the roles of financial inclusion, micro financing adoption, and COVID-19 consequences in shaping the financial well-being of AIM's women micro-entrepreneurs in Malaysia. Overall, the findings provide strong empirical support for the importance of financial inclusion and microfinance in enhancing financial well-being, while revealing that pandemic-related shocks did not significantly moderate the microfinance and well-being relationship within this sample.

### *Financial Inclusion and Micro Financing Adoption*

The strong positive effect of financial inclusion on AIM micro financing adoption aligns with the notion that when low-income individuals have better access to formal financial services such as savings, payment facilities, and credit they are more likely to engage with microfinance institutions (Demirgüç-Kunt et al., 2018; Mialou et al., 2017). In the context of AIM, borrowers who perceive higher financial inclusion may find it easier to navigate financial procedures, understand loan products, and meet eligibility requirements, thereby encouraging sustained participation in micro financing schemes (Ahmad et al., 2020; Haque et al., 2019).

These findings corroborate prior research showing that inclusive financial ecosystems increase uptake of microcredit and related services among the poor and women (Mahdzan et al., 2020; Arunachalam & Crentsil, 2020). In practical terms, strengthening financial inclusion through simplified documentation, improved financial literacy, and accessible delivery channels that can further increase responsible microfinance usage among vulnerable clients.

### *Financial Inclusion, Micro Financing Adoption, and Financial Well-Being*

The positive effects of financial inclusion and micro financing adoption on financial well-being support theoretical arguments that financial services can enhance financial security, stability, and perceived control (Brüggen et al., 2017; CFPB, 2017). For AIM's micro-entrepreneurs, participation in micro financing appears to translate into higher incomes, improved capacity to manage daily expenses, and greater ability to pursue financial goals elements that underpin subjective financial well-being.

The significant partial mediation result further clarifies that financial inclusion benefits financial well-being not only through direct channels (e.g., better access to savings, payments, risk-management products) but also indirectly via increased adoption of micro financing. In other words, being financially included facilitates engagement with AIM financing, which in turn strengthens financial well-being. This is consistent with Ozili's financial inclusion theory for vulnerable groups, which posits that inclusive financial systems can empower low-income households by enabling productive investment and risk-sharing mechanisms (Ozili, 2020b).

From a policy perspective, these results emphasise the need to view financial inclusion and microfinance not as separate agendas but as complementary pillars of an integrated strategy to enhance financial well-being among low-income women. Tailored microfinance

products, supported by broader financial inclusion policies, can jointly create a supportive environment for sustainable micro-entrepreneurship and well-being.

#### *COVID-19 Consequences, the Microfinance and Well-Being Relationship*

Contrary to expectations, COVID-19 consequences did not significantly moderate the relationship between micro financing adoption and financial well-being. Several explanations are plausible. First, while respondents reported substantial business disruptions and income losses during the pandemic, the positive effects of micro financing on financial well-being may have remained robust, for example through enabling business continuity, diversification, or access to emergency liquidity. Second, government relief measures, moratoriums, and AIM's own support mechanisms during the pandemic may have buffered extreme negative impacts on borrowers, reducing variability in the moderating effect (Malik et al., 2020; Ozili, 2020b).

It is also possible that subjective financial well-being, as measured using the CFPB framework, captures longer-term perceptions of financial security and control that are less sensitive to short-term shocks. Thus, while the pandemic certainly affected business operations, the underlying sense of financial capability and resilience fostered by sustained microfinance participation may have persisted. Future studies could incorporate longitudinal designs or more granular measures of crisis exposure to better capture dynamic effects.

#### **Theoretical and Practical Implications**

Theoretically, this study extends financial inclusion research by applying the CFPB financial well-being framework in a microfinance context and demonstrating the mediating role of micro financing adoption. It also supports Ozili's view that financial inclusion for vulnerable groups should be evaluated through their capacity to manage shocks and maintain well-being, not merely access indicators.

Practically, the findings suggest several important policy and practical implications. Financial inclusion infrastructure should be strengthened for low-income women, particularly in rural areas, through more accessible financial channels, digital financial solutions, and supportive regulatory frameworks. Microfinance product design should be enhanced by ensuring adequate loan amounts, flexible repayment structures, and better integration with savings and insurance products to improve both business performance and financial well-being. In addition, financial literacy and advisory services should be embedded within microfinance programmes to promote responsible borrowing, effective budgeting, and sound risk management. Finally, crisis-responsive mechanisms such as loan moratoriums, emergency financing, and targeted grants should be developed to complement microfinance initiatives in protecting the financial well-being of vulnerable clients during systemic shocks, including pandemics.

#### **Limitations and Directions for Future Research**

Several limitations should be noted. First, the study employed a cross-sectional design with self-reported measures, limiting causal inference and raising potential common method bias risks. Second, the sample was restricted to AIM borrowers in two branches within a single state, which may constrain generalisability to other regions or microfinance institutions. Third, the measure of COVID-19 consequences, while capturing key business impacts, may not fully reflect heterogeneity in exposure or the timing of shocks.

Future research could adopt longitudinal designs to track changes in financial well-being over time, extend the analysis to multiple microfinance institutions and regions, and incorporate objective financial data (e.g., transaction records, loan histories) alongside subjective measures. Additionally, exploring other potential moderators such as financial literacy, social support, or digital financial service usage that could provide deeper insights into the conditions under which microfinance most effectively enhances financial well-being.

### **Conclusion**

This study provides empirical evidence that financial inclusion and micro financing adoption play vital roles in enhancing the financial well-being of low-income women micro-entrepreneurs served by Amanah Ikhtiar Malaysia. Financial inclusion strongly promotes micro financing adoption, and both factors significantly and positively influence financial well-being. AIM micro financing adoption partially mediates the relationship between financial inclusion and financial well-being, underscoring the importance of actual utilisation of microfinance services for achieving better financial outcomes.

Although COVID-19 consequences adversely affected micro-businesses, they did not significantly weaken the positive relationship between micro financing adoption and financial well-being in this sample. Overall, the findings suggest that strengthening financial inclusion and microfinance programmes remains a crucial policy pathway to improve financial well-being among vulnerable groups, even amid external shocks.

### **Research Contributions**

This study makes several important theoretical and contextual contributions to the literature on financial inclusion and financial well-being. From a theoretical perspective, the study extends the application of the Consumer Financial Protection Bureau (CFPB) financial well-being framework by empirically examining its relevance within a microfinance context, specifically among low-income women micro-entrepreneurs. By demonstrating that financial inclusion influences financial well-being both directly and indirectly through micro financing adoption, the study provides empirical support for the CFPB's multidimensional conceptualisation of financial well-being in a developing economy setting. In addition, the findings contribute to Ozili's vulnerable group theory of financial inclusion by highlighting the role of microfinance as a key mechanism through which financial inclusion policies translate into improved well-being outcomes for financially vulnerable women. Contextually, this study enriches the limited empirical evidence on financial inclusion and financial well-being in Malaysia by focusing on Amanah Ikhtiar Malaysia, one of the country's largest microfinance institutions. It also provides timely insights into the resilience of microfinance and financial inclusion mechanisms during systemic shocks such as the COVID-19 pandemic. Overall, the study offers valuable evidence for researchers, policymakers, and practitioners seeking to design inclusive financial systems that enhance financial well-being among vulnerable groups in emerging economies.

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