

# Digital Inclusion in Income-Generating Programmes: Lessons from Malaysia's IPR and Indonesia's Social Protection Ecosystem

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## ABSTRACT

Digitalisation is reshaping how governments deliver social protection and design income-generating programmes for low-income households. Malaysia's People's Income Initiative (Inisiatif Pendapatan Rakyat, IPR) aims to eradicate hardcore poverty and raise incomes through structured opportunities in agriculture, food and services, supported by modern delivery systems and partnerships. Indonesia, meanwhile, has spent more than a decade digitising its social protection ecosystem, including the conditional cash transfer Program Keluarga Harapan (PKH) and the Non-Cash Food Assistance Programme (Bantuan Pangan Non Tunai, BPNT), shifting from cash and in-kind benefits to electronic accounts, e-vouchers and agent networks. These developments are often framed as pathways to financial and digital inclusion, yet evidence from the ground reveals a more complex reality. Connectivity, literacy, institutional capacity and everyday constraints determine who is reached, who is left behind and how far income support translates into better livelihoods. This article offers a conceptual analysis of digital inclusion in income-generating programmes by drawing lessons from Malaysia's IPR and Indonesia's digitalised social protection ecosystem. It synthesises literature on digital and financial inclusion, digital government-to-person (G2P) payments and recent reforms in both countries. The discussion argues that digitalisation can improve convenience, transparency and choice for low-income households and can open pathways to the wider digital economy when accompanied by appropriate support. However, there are also risks of digital exclusion, low or passive use of accounts, over-reliance on imperfect agent networks and the reproduction of existing inequalities when programme design assumes capacities that poor households do not yet have. On the basis of this comparative reflection, the article proposes design principles for digitally enabled income-generating programmes: treating digital channels as enablers rather than gatekeepers, combining digital onboarding with human support, investing in digital and financial literacy, strengthening consumer protection and data safeguards, and using digital systems not only for payments but also for linking participants to markets and services. It concludes by outlining a research agenda on digital inclusion within IPR and similar initiatives, with particular attention to women, rural communities and hardcore poor households.

**Keywords:** Digital Inclusion, Income-Generating Programmes, People's Income Initiative, Social Protection Ecosystem.

## 1. INTRODUCTION

In many middle-income countries, governments are increasingly turning to digital tools to deliver social protection and income support. Payment systems, enrolment platforms, data registries and beneficiary interfaces are being migrated from paper and cash towards bank accounts, e-wallets, cards and online portals (World Bank, 2023). For low-income households, digitalisation is often framed as a gateway to financial inclusion and, ultimately, to income opportunities in a digitalising economy (Khazanah Research Institute, 2022; Lu et al., 2024). Malaysia and Indonesia provide two instructive cases of this trend.

In Malaysia, the People's Income Initiative (Inisiatif Pendapatan Rakyat, IPR) was introduced under the MADANI Economy agenda to eradicate hardcore poverty and raise the incomes of poor and vulnerable households by placing them into structured, income-generating activities in agriculture, food and services (Prime Minister's Office of Malaysia, 2023; Ministry of Finance Malaysia, 2023). IPR is implemented in collaboration with state agencies, local authorities, universities and private firms, and is embedded within a broader national push for financial inclusion and digitalisation, guided by Bank Negara Malaysia's financial inclusion framework (Bank Negara Malaysia [BNM], 2023). Indonesia, by contrast, has a longer history of targeted social protection programmes such as PKH and the food assistance schemes that evolved from Rastra into BPNT and subsequently Program Sembako. Over the past decade, these programmes have undergone substantial digital transformation, with a shift from cash-in-envelope and physical rice distribution to bank accounts, combo cards and electronic vouchers redeemable at designated agents and shops (OECD, 2019; Sofa, 2023; TNP2K, 2018; World Bank, 2017).

Digitalisation in both settings has been presented as a way to widen access, reduce leakages, speed up delivery and provide poor households with an entry point to formal financial services (World Bank, 2023). At the same time, empirical studies and policy analyses note that digital reforms introduce new layers of complexity. Connectivity gaps, device ownership, digital literacy, trust in formal institutions and the spatial distribution of agents or merchants all influence whether digital channels genuinely enhance inclusion or simply shift the form of exclusion (Khazanah Research Institute, 2022; Lu et al., 2024; Women's World Banking, 2021; Rosli & Redzuan, 2022).

Malaysia's IPR sits at an interesting intersection between social protection and productive inclusion. Its core aim is not only to provide temporary relief, but to enable households—especially hardcore-poor families—to generate income on a sustained basis through agricultural ventures, food businesses, vending initiatives and service operations (Ministry of Finance Malaysia, 2023). Many of these activities can be supported or amplified through digital technologies, from digital payments at vending machines to online food delivery platforms and social media marketing. At the same time, IPR operates in a context where digital and financial inclusion among low-income households remains uneven, with recent research highlighting gaps in digital literacy, infrastructure and trust (BNM, 2023; Khazanah Research Institute, 2022; Lu et al., 2024).

Against this background, the guiding question of this article is: How can digital inclusion be understood and enhanced in income-generating programmes for low-income and hardcore-poor households, and what lessons can Malaysia's IPR draw from Indonesia's digitalised social protection ecosystem?

The discussion pursues three objectives. First, it reviews key literature on digital and financial inclusion, digital G2P payments and social protection reforms in Malaysia and Indonesia. Second, it develops a conceptual reading of IPR and Indonesia's programmes through a digital inclusion lens, focusing on both opportunities and risks. Third, it proposes design principles and a research agenda for making digitally enabled income-generating programmes more inclusive and effective.

### 1.1 Analytical framework: Access, Usage and Outcomes of digitalisation

To strengthen analytical clarity, this article applies a digital inclusion framework that distinguishes between (i) access to digital channels and services, (ii) usage of those channels in everyday programme participation and enterprise activities, and (iii) outcomes that arise when digitalisation translates into meaningful economic value for low-income households. This access–usage–outcomes lens is frequently used in the literature on digital government-to-person (G2P) payments and digital financial inclusion to separate the question of being reached

from the question of being able to use, and from the question of whether any benefit is ultimately realised (World Bank, 2023; Bank Negara Malaysia [BNM], 2023).

Access refers to the ability of intended participants to reach and enter the digital system: having suitable devices, affordable connectivity, basic identity/documentation, and practical availability of service points such as agents, merchants or helpdesks. In low-income settings, access constraints often include unstable networks, data costs, distance to agents, and limited familiarity with formal onboarding processes (Khazanah Research Institute, 2022; World Bank, 2023).

Usage refers to capability and sustained engagement: whether participants can reliably receive, store and transact with digital funds; navigate interfaces; troubleshoot failures; and use digital tools beyond cashing out (e.g., record-keeping, QR payments, online ordering and marketing). Evidence from digital G2P reforms highlights that many beneficiary accounts remain dormant or are used only for withdrawals unless supported by clear communication and hands-on guidance (World Bank, 2017; Women's World Banking, 2021).

Outcomes refer to what digitalisation ultimately delivers: reductions in time and travel costs, greater transparency, improved choice and bargaining power, stronger financial footprints, and—in the context of income-generating programmes—higher and more stable earnings through better market linkages and business practices (World Bank, 2023; Lu et al., 2024).

Throughout the Findings and Discussion, the paper uses this access-usage-outcomes structure to interpret Malaysia's IPR and Indonesia's PKH/BPNT ecosystem, and the Policy Directions section summarises recommendations accordingly to make the implications more actionable for programme designers and implementing agencies.

## 2. LITERATURE REVIEW

### 2.1 Digital and Financial Inclusion

Digital inclusion refers to the ability of individuals and communities to access and use digital technologies in ways that support their well-being and participation in economic and social life. It encompasses physical access to devices and connectivity, the skills and confidence to use digital tools, and the availability of relevant services and content (World Bank, 2023). Financial inclusion focuses on access to and use of affordable financial products and services that meet users' needs for payments, savings, credit and insurance. The two are increasingly intertwined as many financial services are delivered through digital channels (BNM, 2023; Nizam et al., 2025).

Evidence from multiple countries suggests that digital financial services—such as mobile money, digital bank accounts and e-wallets—can reduce transaction costs, increase convenience and support resilience, particularly when combined with appropriate consumer protection and literacy efforts (World Bank, 2023; Gosal & Nainggolan, 2023). The G2Px initiative documents how digital G2P transfers, when well designed, can reduce travel and waiting time, increase predictability of payments and improve satisfaction among beneficiaries (World Bank, 2023). However, these gains depend on network coverage, agent availability, user capabilities and trust in the system.

Recent studies also emphasise the importance of digital financial literacy as a bridge between access and effective use. For example, Rosli and Redzuan (2022) and Omar and Hassan (2023) show that digital financial literacy among Malaysia's B40 households is uneven, and that literacy, socialisation and support mechanisms shape whether digital financial services translate into better financial inclusion and well-being.

### 2.2 Malaysia's Digital Financial Inclusion and Low-Income Households

Malaysia has made significant progress in expanding access to formal financial services, with relatively high account ownership and a strong banking infrastructure (BNM, 2023). The Financial Inclusion Framework 2023–2026 emphasises convenient accessibility, responsible usage and high customer satisfaction, and explicitly recognises digitalisation as a key enabler (BNM, 2023).

Alongside this, there is growing attention to low-income households and the B40 segment. Khazanah Research Institute (2022) highlights how digital banking and fintech solutions could support financial inclusion, while

cautioning that barriers related to documentation, literacy and affordability must be addressed. Lu et al. (2024) show that digital financial inclusion can support the financial well-being of poor households, but only when accompanied by appropriate literacy and trust. Related work on financial stress and financial well-being among B40 households also underscores the importance of targeted capability-building and supportive ecosystems (Mansor et al., 2022; Rahman et al., 2021).

This broader ecosystem forms the backdrop for IPR. While IPR itself is primarily an income-generating programme, many of its potential benefits—such as easier payments, market linkages and access to microfinance or digital platforms—depend on the extent to which participants are digitally and financially included (Prime Minister's Office of Malaysia, 2023; Ministry of Finance Malaysia, 2023).

### 2.3 Indonesia's Digitalisation of Social Protection

Indonesia's social protection system has undergone substantial digital transformation. The Social Protection System Review by the OECD (2019) describes how programmes such as PKH and food assistance schemes were progressively reformed with a greater emphasis on targeting, harmonisation and modern delivery mechanisms. The government has shifted from cash and physical rice distribution to non-cash, account-based and electronic voucher mechanisms, supported by large-scale investments in social registries and payment infrastructure (OECD, 2019; TNP2K, 2018; World Bank, 2017).

PKH now delivers benefits largely through bank accounts held by women in beneficiary households, created in partnership with state-owned banks (Women's World Banking, 2021; Theis et al., 2020). Evaluations note that recipients appreciate reductions in travel and waiting time compared to earlier cash distribution systems and value the sense of ownership associated with having an account (Women's World Banking, 2021; World Bank, 2017). At the same time, many accounts remain underused beyond the receipt and withdrawal of benefits, with limited uptake of savings or other financial products, indicating that possession of an account does not automatically translate into broader financial inclusion (World Bank, 2017; Gosal & Nainggolan, 2023).

Food assistance reforms from Rastra to BPNT and Program Sembako similarly sought to harness digital tools for greater efficiency and choice. Beneficiaries now receive monthly electronic balances credited to their cards, which they can use to purchase eligible food items at registered merchants. Randomised evaluations comparing in-kind rice distributions to electronic vouchers find that e-vouchers can improve dietary diversity and beneficiary satisfaction while reducing leakage, provided that merchant competition and technical reliability are adequate (Banerjee et al., 2022; J-PAL, 2021; Sofa, 2023).

Analyses of implementation also document challenges. In some areas, beneficiaries face long queues at overburdened shops, limited choice due to weak competition, or technical failures in devices and connectivity (OECD, 2019; Sofa, 2023; World Bank, 2017). There are concerns about the quality of goods supplied and the bargaining power of beneficiaries vis-à-vis merchants, raising questions about how much effective choice the system actually provides (OECD, 2019; TNP2K, 2018). For digital accounts, obstacles include limited understanding of account features, low levels of digital literacy and physical or social constraints on women's ability to travel to agents or ATMs (Women's World Banking, 2021; Theis et al., 2020).

### 2.4 Income-Generating Programmes and Productive Social Protection

Globally, there is growing interest in programmes that combine social protection with productive inclusion. Such programmes aim not only to smooth consumption but also to build assets, skills and market linkages so that households can generate their own income on a sustainable basis (OECD, 2019; World Bank, 2017, 2023).

In Malaysia, IPR illustrates this approach by creating structured opportunities for hardcore-poor and B40 households to participate in agriculture (INTAN), food-based businesses (INSAN) and service activities such as managing outlets or vending machines (IKHSAN), often with pre-arranged demand from anchor firms or public institutions (Prime Minister's Office of Malaysia, 2023; Ministry of Finance Malaysia, 2023). Digitalisation can play a role at multiple points along this chain, from identifying and enrolling participants, delivering support, managing contracts and monitoring performance, to enabling participants to receive digital payments from customers and use online channels for marketing and procurement.

The benefits of digitalisation are not automatic, however. They depend on whether participants are digitally included and whether programme design recognises the constraints they face (Khazanah Research Institute, 2022; Lu et al., 2024; Rosli & Redzuan, 2022). This intersection between digital inclusion and income-generating programmes is the central focus of this article.

### 3. METHODOLOGY

The article adopts a conceptual and narrative review approach. Rather than testing hypotheses or presenting new survey data, it synthesises existing literature and policy documents to explore digital inclusion in income-generating programmes through a comparative lens.

Sources were identified through searches of academic databases, international organisation repositories and official government websites, using combinations of keywords such as “Inisiatif Pendapatan Rakyat”, “People’s Income Initiative”, “digital financial inclusion Malaysia”, “Program Keluarga Harapan digital accounts”, “BPNT e-vouchers”, “digital G2P payments” and “social protection digitalisation Indonesia”. Priority was given to recent documents and studies that shed light on digital channels in programme delivery, financial and digital inclusion among low-income households, and reforms within IPR, PKH and BPNT (BNM, 2023; J-PAL, 2021; Khazanah Research Institute, 2022; OECD, 2019; Rosli & Redzuan, 2022; Sofa, 2023; TNP2K, 2018; Women’s World Banking, 2021; World Bank, 2017, 2023).

The selected sources were read closely and analysed thematically. To operationalise digital inclusion consistently across the paper, themes were organised under the access–usage–outcomes dimensions introduced in Section 1.1, alongside ecosystem factors such as infrastructure reliability, agent/merchant availability, institutional capacity and trust. These themes were then used to interpret the design and aspirations of Malaysia’s IPR and the trajectory of Indonesia’s social protection ecosystem.

This article does not claim to capture every nuance of implementation or every local variation. Instead, it aims to distil cross-cutting insights that can inform policy discussions and future empirical research on digital inclusion in income-generating programmes targeting the poor.

## 4. FINDINGS AND DISCUSSION

### 4.1 Digital Inclusion in Malaysia’s People’s Income Initiative (IPR)

IPR was launched as part of a broader effort to eradicate hardcore poverty and tackle cost-of-living pressures. Policy documents describe it as a strategy to increase the income of hardcore-poor and vulnerable households through structured participation in agriculture (INTAN), food-based activities (INSAN) and services (IKHSAN), supported by partnerships with public agencies and private actors (Prime Minister’s Office of Malaysia, 2023; Ministry of Finance Malaysia, 2023). Applying the access–usage–outcomes framework introduced earlier, digital inclusion in IPR is best understood not only as the presence of digital tools in programme delivery, but as the extent to which participants can reach, use and benefit from those tools in day-to-day enterprise activities.

Access in IPR concerns whether targeted households have the prerequisites to enter digitally enabled components: affordable devices and data, stable connectivity, and practical routes to onboarding into bank accounts or e-wallets where relevant. Although Malaysia has relatively strong financial infrastructure, studies on B40 and poor households highlight uneven digital financial literacy, constraints linked to affordability and confidence, and the persistence of frictions at the point of onboarding and support (BNM, 2023; Khazanah Research Institute, 2022; Lu et al., 2024). If digital processes become the default for enrolment, reporting or transactions without assisted alternatives, the risk is that the most vulnerable participants face new barriers at the ‘entry’ stage.

Usage in IPR relates to whether participants can reliably transact and manage digital interactions once enrolled: receiving payments, using QR or e-wallet functions, communicating with customers, and leveraging common platforms for marketing and ordering. Evidence from Malaysia suggests that many low-income users are comfortable with messaging and social media yet less confident with digital banking features, fee structures or dispute handling, implying that practical, scenario-based coaching matters more than generic digital training (Omar & Hassan, 2023; Rosli & Redzuan, 2022). In income-generating settings, usage also depends on

dependable support channels—frontline mentors, helpdesks and partner institutions—when devices fail, networks drop or transactions are disputed.

Outcomes in IPR refer to whether digitalisation translates into tangible economic value: lower transaction costs, better record-keeping, wider market reach and more stable earnings. An illustrative scenario is an IKHSAN vending or outlet initiative where participants accept QR or e-wallet payments; this can broaden the customer base and create a transaction history, but intermittent connectivity, unfamiliarity with reversal/refund processes, or limited access to timely technical support can push participants back to cash-based routines. This reinforces a core lesson from digital inclusion research: the benefits of digital tools are realised only when usability and support structures match the capabilities and constraints of targeted households (World Bank, 2023; Khazanah Research Institute, 2022).

Overall, IPR is aligned with Malaysia's broader agenda on digital and financial inclusion, where Bank Negara Malaysia emphasises convenient accessibility, responsible usage and consumer protection (BNM, 2023). The programme therefore has an opportunity to treat digital channels as enablers: combining assisted onboarding (access), hands-on business-oriented guidance (usage) and monitoring of whether digital tools are improving income and resilience (outcomes), rather than assuming that digitalisation will 'work by default' for hardcorepoor participants.

#### 4.2 Lessons from Indonesia's Digital Social Protection Ecosystem

Indonesia's experience with digitising social protection offers concrete lessons for Malaysia because reforms in PKH and BPNT/Program Sembako were implemented at very large scale, using bank accounts, cards and evouchers to modernise delivery for low-income households (OECD, 2019; TNP2K, 2018; World Bank, 2017).

Through an access–usage–outcomes lens, this trajectory illustrates how digital delivery can expand reach and reduce leakages, while also creating new dependencies on agent networks, device reliability and beneficiary capabilities.

Access in Indonesia's reforms was expanded through partnerships with state-owned banks and the use of social registries, enabling millions of households—often with women as the primary account holder—to obtain accounts or cards linked to programme benefits (Women's World Banking, 2021; Theis et al., 2020). Yet access remained uneven where beneficiaries faced long distances to agents/ATMs, inconsistent connectivity at service points, or limited understanding of onboarding steps and entitlements (OECD, 2019; World Bank, 2017).

Usage challenges became visible after onboarding. Many PKH accounts were used mainly for receiving and withdrawing benefits, with limited uptake of savings or other services, suggesting that account ownership alone does not guarantee active inclusion (World Bank, 2017; Gosal & Nainggolan, 2023). For BPNT/Program Sembako, usage depended on whether beneficiaries could redeem balances smoothly at registered merchants; in practice, usability was shaped by merchant competition, point-of-sale reliability and the quality of communication about eligible items (Banerjee et al., 2022; J-PAL, 2021; Sofa, 2023).

Outcomes from digitisation were mixed. Evaluations and syntheses report improvements such as reduced travel and waiting time compared to earlier cash or in-kind systems, and in some settings better dietary diversity and beneficiary satisfaction when e-vouchers functioned well (Banerjee et al., 2022; Women's World Banking, 2021; World Bank, 2017). At the same time, implementation studies document frictions—queues at overburdened shops, limited choice where merchant competition is weak, and technical failures—showing that positive outcomes are conditional on ecosystem performance rather than inherent to 'going digital' (OECD, 2019; Sofa, 2023). An illustrative scenario is a beneficiary who holds an e-voucher card but must repeatedly visit an agent due to transaction failures or stock shortages, eroding the promised time and cost savings.

The overarching lesson is that digitalisation is not only a technical upgrade; it is an institutional and social transformation. Realising inclusion requires deliberate investment in frontline support, transparent grievance mechanisms and practical capability-building so that digital channels extend agency rather than reproduce existing inequalities (OECD, 2019; Women's World Banking, 2021).

### 4.3 Cross-cutting insights through an access–usage–outcomes lens

Applying the access–usage–outcomes framework to both Malaysia’s IPR and Indonesia’s PKH/BPNT ecosystem yields a more precise understanding of when digitalisation supports inclusion and when it becomes a new bottleneck for the poor. Three substantive insights emerge—one at each stage of the framework—alongside a cross-cutting governance lesson.

First, access is necessary but not sufficient. Digital reforms can widen reach and reduce leakage only when the basic ‘entry conditions’ are met: reliable connectivity, affordable devices and data, practical proximity to agents/merchants, and simple onboarding with assisted alternatives for those who struggle. In both countries, geography and everyday constraints (time, transport, care responsibilities) shape whether digital channels are truly accessible, particularly for rural communities and women (Khazanah Research Institute, 2022; OECD, 2019; Women’s World Banking, 2021).

Second, usage depends on capability and support. Evidence from account-based transfers and e-voucher systems shows that beneficiaries may remain passive users—receiving and cashing out—unless programmes invest in clear communication, hands-on guidance and responsive problem-solving when transactions fail (World Bank, 2017, 2023). For income-generating programmes such as IPR, this matters because business-oriented digital usage (e.g., payments, basic bookkeeping, online ordering and marketing) is the pathway through which digital tools can strengthen livelihoods rather than merely digitise administration (Omar & Hassan, 2023; Rosli & Redzuan, 2022).

Third, outcomes are conditional on ecosystem performance. Positive outcomes—time savings, transparency, improved choice and better income opportunities—emerge when digital delivery is reliable and when participants can link digital channels to real economic opportunities (Banerjee et al., 2022; World Bank, 2023). Conversely, weak agent networks, limited merchant competition, unclear grievance mechanisms or recurring technical failures can erode the promised benefits and reproduce inequality through new forms of dependency (OECD, 2019; Sofa, 2023).

Finally, governance and institutional design shape all three stages. Digital inclusion is affected by how agencies set partnership terms with banks and e-money providers (fees, support, consumer protection), how entitlements are communicated, and how complaints are handled. In short, digitalisation must be designed as a rights- and capability-enhancing process, not as a purely technical upgrade.

To make these contrasts clearer, Table 1 summarises several key dimensions of digital inclusion in IPR and in the PKH/BPNT ecosystem, highlighting how differences in programme purpose (productive inclusion versus consumption support) still converge on shared access, usage and outcome challenges.

Table 1. Key Dimensions of Digital Inclusion in Malaysia’s IPR and Indonesia’s PKH/BPNT

Dimension	Malaysia – IPR	Indonesia – PKH/BPNT	Implications for Digital Inclusion
Programme Focus	Income-generating (agriculture, food, services)	Cash transfers and food assistance	IPR has potential to use digital tools for market access, not only payments
Main Digital Use Case	Enrolment, monitoring, some digital payments and reporting	G2P transfers into accounts; e-vouchers for food	PKH/BPNT centre on digital delivery; IPR can extend to digital commerce
Primary Account Holder	Not yet standardised; depends on delivery partners	Typically women in beneficiary households	Women’s empowerment effects more explicit in PKH; IPR can adapt this feature
Typical Participant Constraints	Uneven digital literacy; unstable income and connectivity	Low digital literacy; uneven access to agents and merchants	Both contexts require strong human support alongside digital interfaces

Key Opportunities	Business-oriented digital skills and online marketing	Accounts as an entry point to formal finance	Combining digital skills with enterprise support can enhance resilience
Key Risks	Exclusion if processes are overly digital and rigid	Dormant accounts; limited choice; quality concerns	Without inclusive design, digital systems can reinforce existing inequalities

Overall, the comparison suggests that IPR starts from a productive inclusion logic, while PKH/BPNT start from a consumption-smoothing logic. Yet both face the same core question: to what extent do digital reforms genuinely bring low-income households into the digital economy, rather than simply modernising the delivery of existing benefits?

## 5. IMPLICATIONS AND POLICY DIRECTIONS FOR MALAYSIA'S IPR

Several implications for IPR emerge from this comparative discussion. First, digital channels should be treated as enablers rather than gatekeepers. Digitising enrolment, monitoring and payments can improve efficiency, but these processes should be backed by alternative channels and assisted options so that hardcore-poor households who struggle with digital forms or interfaces are not excluded from opportunities.

Second, IPR could more deliberately integrate digital and financial capability-building into its training and mentoring components. Instead of presenting digital tools as stand-alone topics, training can embed them in everyday business scenarios—pricing, customer communication on messaging apps, basic record-keeping through mobile applications and simple online marketing. Partnerships with agencies experienced in financial education and digital literacy can strengthen this dimension (Rosli & Redzuan, 2022; Omar & Hassan, 2023).

Third, the design of partnerships with financial institutions and e-money providers matters. Where IPR projects involve digital payments, bank accounts or e-wallets, agreements with providers could include explicit commitments to transparent fees, user-friendly interfaces, accessible support channels and safeguards against aggressive cross-selling of unsuitable financial products. Without such conditions, digital financial services associated with IPR could become a new source of vulnerability for participants (World Bank, 2023).

Fourth, IPR's monitoring and evaluation framework could incorporate digital inclusion indicators alongside traditional measures of income and participation. These might include whether participants have access to suitable devices and connectivity, whether they can perform key digital tasks relevant to their businesses, whether they encounter major problems in receiving digital payments, and whether their confidence in using specific applications improves over time. Such indicators would help policymakers see whether digitalisation is strengthening or weakening programme impact.

Finally, Malaysia can continue to learn from Indonesia's experience while recognising contextual differences. Indonesia demonstrates both the scale of change that digitalisation can achieve and the persistence of challenges related to account usage, agent quality and beneficiary understanding (OECD, 2019; TNP2K, 2018; Women's World Banking, 2021; Sofa, 2023). By studying these dynamics, Malaysia can anticipate similar pitfalls and incorporate safeguards into IPR and related initiatives from the outset, rather than retrofitting solutions after problems emerge. The key policy directions are summarised in Table 2.

**Table 2. Policy directions for strengthening digital inclusion in IPR using the access–usage–outcomes framework**

Framework Dimension	Key Recommendation	Practical Implications for IPR Design
Access (reach and onboarding)	Treat digital channels as enablers, not gatekeepers; keep assisted alternatives.	Provide assisted enrolment and step-by-step onboarding; ensure accessible helpdesks/agents; anticipate data/device constraints; allow non-digital fallbacks for critical processes.

Usage (capability and sustained engagement)	Embed hands-on digital and financial capability-building in business mentoring.	Use scenario-based coaching (payments, simple records, marketing); provide troubleshooting support; communicate entitlements, fees and dispute pathways in simple language.
Outcomes (economic value and empowerment)	Link digital tools to real market opportunities and income stability goals.	Use digital payments and platforms to expand customer reach; support procurement/ordering; track whether digital use improves earnings, resilience and women's agency.
Safeguards (trust, rights and data)	Strengthen consumer protection, grievance redress and data safeguards in partnerships.	Set clear terms on fees and support with providers; create accessible complaints channels; protect participant data; monitor exclusion risks and unintended burdens.

## 6. CONCLUSION

Digitalisation is reshaping the landscape of social protection and income support in Malaysia and Indonesia. Malaysia's People's Income Initiative (IPR) seeks to eradicate hardcore poverty and increase incomes through structured income-generating activities, while Indonesia has built a digital social protection ecosystem around programmes such as PKH and BPNT. Both countries view digital tools as a way to improve delivery and foster inclusion.

This article has argued that to make sense of these developments—and to design better income-generating programmes—it is essential to look at them through a digital inclusion lens. Digital channels can reduce friction, increase transparency and open pathways to the wider digital economy, but only when poor households can access and use them confidently and when institutions recognise their constraints and rights. Without such attention, digitalisation risks entrenching new forms of exclusion or leaving the poorest as passive users of systems they do not fully understand.

By synthesising literature on digital and financial inclusion, digital G2P payments and the evolution of IPR, PKH and BPNT, the article has highlighted both opportunities and risks. It has proposed that digitally enabled income-generating programmes should treat digital tools as enablers, invest in capability-building, design fair and supportive partnerships with service providers and incorporate digital inclusion indicators into monitoring frameworks.

For researchers, the analysis points to a rich agenda: mapping digital capabilities and experiences among IPR participants, comparing different models of digital support, examining gendered impacts of digitalisation and exploring how digital channels can be harnessed not only for payments and reporting but also for connecting low-income entrepreneurs to markets and networks. For policymakers, the central message is that digital inclusion is not automatic; it must be designed for, supported and continually monitored if income-generating programmes are to realise their full promise for the poor.

As the paper is based on secondary sources, its arguments about participant experiences should be read as informed inferences grounded in existing evidence. Future work can strengthen the contribution by adding empirical data from IPR participants and implementing agencies to test how access, usage and outcomes vary across locations and groups, particularly among women, rural communities and hardcore-poor households.

## 7. ETHICAL CONSIDERATIONS

This article is based entirely on secondary sources, including published academic work, policy documents and publicly available reports. It does not involve primary data collection from human participants or the use of confidential administrative records. Formal ethical approval was therefore not required. Future empirical studies that build on the conceptual arguments presented here and involve direct engagement with programme participants, frontline workers or officials should seek approval from an appropriate institutional ethics

committee and ensure informed consent, confidentiality and secure handling of personal and digital financial data.

## 8. CONFLICT OF INTEREST

The author declares no known financial or non-financial conflict of interest in relation to this article. The analysis and conclusions are solely those of the author and do not necessarily represent the official views of any institution.

## 9. DATA AVAILABILITY

No new datasets were generated or analysed in this study. All information is derived from publicly available sources cited in the text. Further details can be obtained from the referenced documents and publications.

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