

Advancing Financial Inclusion for Persons With Disabilities in Indonesia: Evidence From Yogyakarta Special Region

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Abstract

This study analyses the factors that support or hinder financial inclusion for persons with disabilities (PWD), using the Yogyakarta Special Region as a case study. This study uses a qualitative approach, with semi-structured interviews grounded in the framework of facilitators and barriers, to explore financial inclusion for PWD in the Yogyakarta Special Region. Snowball sampling was used to recruit four informants, comprising two people who were blind or partially sighted and two people with physical disabilities. Data collection involved interviews with informants, banking representatives, and disability experts. Facilitators include cooperatives offering door-to-door services, accessible banking facilities such as ramps and trained staff, and digital innovations like mobile banking, which reduce physical barriers. However, barriers persist, including stigma, misperceptions, and inadequate physical and digital infrastructure. Many banks lack accessible ATMs or audio-guided mobile platforms, hindering the usability of services for blind and partially sighted people. Additionally, distance to branches and insufficient accommodations exacerbate exclusion. To address these challenges, the study proposes strategies such as strengthening disability-focused financial literacy, expanding accessible banking infrastructure, and fostering collaboration between banks and cooperatives. Indicators of financial inclusion for PWD—account ownership, credit access, digital banking usage, and customer satisfaction—are highlighted as tools for assessing progress and identifying areas for improvement.

Keywords

Banking; financial inclusion; persons with disabilities; Yogyakarta Special Region

Introduction

Financial inclusion has received increasing attention since the global economic crisis of 2008, which originated in the United States with the collapse of the subprime mortgage market and subsequently triggered a worldwide recession. The crisis disproportionately affected those at the bottom of the economic pyramid (Barajas et al., 2020; Goswami et al., 2025) by reducing access to credit, employment, and essential financial services (Demirgüç-Kunt, 2015). This group includes low- and irregular-income earners, residents in remote areas, persons with disabilities (PWD), workers without legal identities, and marginalised communities who typically lack access to financial institutions—a situation prevalent outside developed areas (Allen et al., 2016; International Finance Corporation, 2023). The financial inclusion program aligns well with the 2030 Sustainable Development Goals (SDGs) agenda, particularly its “leave no one behind” tagline, which underscores a global commitment to ensure that all individuals—especially the poorest, most vulnerable, and marginalized—benefit from development efforts and are not excluded from progress (United Nations Development Programme, 2018).

One marginalized group whose rights need to be ensured, especially regarding access to financial institutions, is PWD. This group constitutes about 16% of the global population, or 1.3 billion people (World Health Organization, 2023). In developing countries like Indonesia, PWD make up approximately 5% of the total population, or 22.5 million people, in 2020 (Kementrian Sosial Republik Indonesia, 2020). However, 73.76% of PWD in Indonesia did not have a bank account as of 2020 (Kementerian PPN/Bappenas, 2021).

In the regional context, Yogyakarta Special Region [Daerah Istimewa Yogyakarta] recorded the highest prevalence of PWD in Indonesia, with 2.05% or approximately 26,371 individuals (BPS-Statistics Indonesia, 2024; Dinas Sosial DIY, 2024). However, specific data on bank account ownership among PWD in Yogyakarta are not yet available. Given that the province has the highest disability prevalence in Indonesia, it is reasonable to assume that the proportion of account ownership among PWD in Yogyakarta reflects the national trend, which shows relatively low levels of financial inclusion.

Despite government efforts to promote financial inclusion through the National Financial Inclusion Strategy (Strategi Nasional Keuangan Inklusif, SNKI) since 2012 and the issuance of Presidential Regulation No. 114 on SNKI in 2020, targeting PWD as one of the key groups, significant gaps remain. Persons with disabilities are particularly vulnerable to multidimensional poverty (Banks et al., 2021; Pinilla-Roncancio & Alkire, 2021). Although the national employment rate for PWD is 56.98%, 71.4% of them work in the informal sector, primarily in agriculture, forestry, and fisheries, leading to unstable income and a lack of employment guarantees and other securities (Kementerian PPN/Bappenas, 2021).

The impact of financial inclusion has been extensively studied, showing that it can reduce poverty and inequality by enabling individuals or households to conduct financial transactions, invest, manage financial risks, and obtain credit from financial institutions (Cicchello et al., 2021; Demirgüç-Kunt, 2017). For PWD, owning a bank account can serve as a gateway to government assistance, which is crucial for those at risk of multidimensional poverty (Kementerian PPN/Bappenas, 2021). In addition, previous studies on financial inclusion for PWD, especially in Indonesia, remain limited, underscoring the need for this research to address existing knowledge gaps. Previous research relevant to this study includes

Singh (2017), who investigated financial inclusion for PWD in India. This study broadly examines India's efforts and challenges in providing financial services to PWD, but does not offer solutions or strategies to overcome them. Imandojemu et al. (2018) conducted a study on financial inclusion and PWD in Nigeria. Their analysis revealed significant differences in financial inclusion levels among PWD across Nigeria's geopolitical zones, as evidenced by statistical comparisons. This indicates that financial inclusion among PWD is uneven and influenced by geographic and contextual factors.

Thohari and Rizky (2021) examined financial literacy among PWD and their access to financial services in Indonesia. Through focus group discussions (FGD) and surveys, their research indicated that financial literacy, as evidenced by financial planning skills, remains low among PWD. Furthermore, the infrastructure and requirements of the financial services industry are not yet sufficiently accommodating, posing barriers to access to financial institutions. Jiya et al. (2022) explored financial inclusion outcomes for PWD in Malawi, focusing on the readiness and accessibility of financial services. Their qualitative approach, involving bank interviews, concluded that inadequate financial literacy, technology usage, and high unemployment rates contribute to banks' reluctance to extend financial services to PWD.

Wann and Burke-Smalley (2023) investigated differences in financial inclusion by disability type in the United States. Using binary logistic regression, their study identified significant differences in the barriers people with different kinds of disabilities face when accessing financial services. In the United States, individuals with vision or cognitive disabilities are significantly more likely to be denied credit or rely on alternative financial services. Goundar and Sathye (2023) explored access to financial services for blind and partially sighted people in Fiji through semi-structured interviews with banks, government agencies, and associations of blind and partially sighted people. Their findings highlighted difficulties in accessing banking services through digital platforms, resulting in low access rates.

Peprah et al. (2023) conducted a study on PWD's access to financial services in Ghana. Using instrumental variable regression analysis, their results showed that disability decreases the likelihood of accessing financial institutions. Santoso (2023) examined the impact of inclusive digital financial services on economic empowerment and financial inclusion for PWD in Indonesia. Using a systematic literature review (SLR), his research identified barriers such as asymmetric information, complex banking procedures, and a lack of sensitivity towards PWD.

Muuo et al. (2025) explored financial inclusion for PWD in Kenya through qualitative reports and brief reviews. Using literature reviews, semi-structured interviews with banks, and FGD with PWD, their study identified barriers such as infrastructure and location issues, information and communication challenges, technology usage, service and system limitations, policy gaps, behavioural problems, and economic factors. They also recommended solutions, including providing supportive facilities and collecting disability status data during financial product applications. They suggested that governments, in collaboration with disability organizations, should develop regulations to enhance financial inclusion for PWD.

While previous studies have explored barriers to financial access for PWD and their impact on financial inclusion (Goundar & Sathye, 2023; Jiya et al., 2022; Muuo et al., 2025), there remains a research gap concerning the persistent underachievement in financial inclusion outcomes for this group. In Southeast Asia, Pholphirul (2019) highlighted that marginalized populations in Thailand continue to face barriers to financial inclusion. On the other hand,

regional initiatives such as the ASEAN Financial Inclusion Framework underscore policy commitments that could inform efforts to include PWD in Indonesia.

According to Koistinen et al. (2022), PWD are more likely to be excluded from formal financial services due to structural barriers, limited accessibility, and discriminatory practices, resulting in significantly lower rates of account ownership and credit access than in the general population. The capability approach further emphasizes that financial inclusion is not merely about access but about the substantive freedom individuals can exercise, which, for PWD, often remains constrained by social and institutional factors (Sen, 1999). Building on these theoretical and empirical foundations, this study seeks to analyse the factors that support and hinder PWD's access to financial services and to propose solutions and strategies to enhance their financial inclusion.

Moreover, there is still a need for research that goes beyond identifying barriers and supporting factors to emphasize actionable solutions and strategies. In the context of the Industrial Revolution 5.0, where technology and human-centered approaches converge, this study proposes strategies to increase financial inclusion for PWD. Expert interviews highlighted the urgency of digital-based solutions, such as developing mobile banking applications and ATMs with greater accessibility features—particularly voice-enabled functions for the visually impaired. In addition, experts emphasized the importance of leveraging Corporate Social Responsibility (CSR) funds to enhance disability-friendly banking facilities, positioning banks not only as financial service providers but also as pioneers of inclusive innovation.

This study selects the Yogyakarta Special Region as the case study because all districts and municipalities within the province have enacted local regulations on disabilities (Kementerian PPN/Bappenas, 2021). This reflects that the Yogyakarta Special Region not only possesses an adequate regulatory framework but also demonstrates a high level of awareness and participation in addressing disability issues (Izzah & Atmojo, 2025). Moreover, Yogyakarta has been recognized as one of the most progressive regions in Indonesia in mainstreaming disability issues into its development agenda.

According to Izzah and Atmojo (2025), the province has integrated disability rights into local development planning, promoted inclusive education and employment, and advanced social protection schemes tailored explicitly to PWD. These initiatives also extend to the financial sector, where local governments encourage accessible financial services and promote partnerships with microfinance institutions and cooperatives to enhance the economic participation of PWD. Therefore, the Yogyakarta Special Region is a relevant setting for assessing not only the regulatory framework but also the practical implementation of disability-inclusive policies that support financial inclusion. Yogyakarta has reinforced this commitment through Regional Regulation No. 5 of 2022 on the rights of PWD, making the province a strategic setting to assess opportunities and challenges in financial inclusion for PWD.

The findings are expected to provide valuable insights for improving banking policies and practices beyond Yogyakarta, highlighting concrete lessons and best practices that can be adapted to other regional contexts. While this study is limited to one province, Yogyakarta is considered a pioneer in disability-inclusive policies in Indonesia (Izzah & Atmojo, 2025), making it a relevant model for other regions seeking to enhance equitable access to financial services for PWD. Rather than offering a universal generalization, the results of this study are

intended to serve as a reference point and comparative framework for policymakers in different provinces to contextualize and refine their own financial inclusion strategies.

Methods

Study design

This study adopts a qualitative approach that emphasizes inclusive and ethical engagement with participants with disabilities. In line with Shakespeare (1996), who called for sensitivity to power dynamics in disability research, and Barnes and Mercer (1997), who emphasized participatory and emancipatory practices, the research design prioritized the voices of PWD throughout data collection. Specifically, we adopt the research methods employed by Hartarto et al. (2024) using semi-structured interviews based on the facilitators and barriers framework.

Semi-structured interviews are a qualitative data collection method that combines predetermined open-ended questions with the flexibility to explore emerging themes in more depth. This approach allows researchers to maintain consistency across interviews while still adapting to participants' responses, making it particularly effective for capturing nuanced experiences from informants. The facilitators and barriers framework aims to analyse PWD's perceptions of financial services, along with the supporting and hindering factors, to develop solutions and strategies to improve their economic inclusion. Informants were selected using the snowball sampling technique, which can be repeated several times, as new informants identified by previous informants play the same role in the sampling process (Audemard, 2020).

A total of four informants were interviewed, and data saturation was considered reached at this point. Recent systematic reviews emphasize that in qualitative research, saturation is not determined by a fixed number of interviews but rather by the study's scope, the homogeneity of participants, and the depth of inquiry (Hennink & Kaiser, 2022). The choice of four rather than an odd number has no methodological implications, as the purpose was not statistical representativeness but obtaining depth of information.

The informants included two blind and partially sighted people and two people with physical disability. These two categories were purposively selected because they represent groups that often face the most direct and significant barriers in accessing financial services. Persons with visual impairments frequently encounter obstacles in obtaining financial information because printed or digital materials are not readily accessible. In contrast, persons with mobility impairments experience difficulties in physically accessing bank branches and other financial institutions. The selection of informants with these disabilities was based on self-identification and confirmation through membership in disability communities and organizations in Yogyakarta, as well as on the Washington Group Short Set (WG-SS) questions, which identify functional limitations in vision and mobility.

Other disability categories, such as hearing or communication impairments, were not included in this study because they would have required different methodological adaptations, such as the involvement of sign language interpreters or alternative communication tools, which were beyond the scope and resources of this research.

Consequently, this selection constitutes a limitation of the study, as the findings cannot fully capture the perspectives of all disability groups, but should be understood as an exploratory step toward highlighting key challenges in financial inclusion for PWD.

To ensure inclusivity, the research design incorporated accessibility measures tailored to the needs of informants who are blind or partially sighted and those with physical disabilities. The interview protocols were developed in clear, straightforward language, with probing questions tailored to each informant's communication needs. For blind and partially sighted informants, the interviews were conducted verbally. For people with physical disability, interviews were arranged in accessible locations or conducted remotely via user-friendly online platforms. Informed consent was obtained through accessible formats, and participants were informed that they could skip any questions they were uncomfortable answering. These steps aimed to create an inclusive and respectful research environment that enabled full participation regardless of disability status.

To enhance the accuracy of the research findings, the data instrument was tested using the triangulation method. This method allows researchers to compare and cross-check results, thereby reducing potential bias by using multiple data sources, procedures, or methods (Fusch et al., 2018). In this study, triangulation involved in-depth semi-structured interviews with parties involved in PWD financial inclusion, including banking representatives and disability experts. These interviews help improve research accuracy by comparing information from related parties.

Two banking representatives, one from a conventional bank and one from an Islamic bank, were interviewed in this study, both from divisions directly involved in customer service. These representatives were selected because they are frontline staff who interact most frequently with customers, including PWD, and are therefore well-positioned to provide detailed insights into the practical challenges and barriers encountered in daily banking transactions. Nevertheless, the perspectives of managerial or policy-level representatives were not included, which constitutes a limitation of this study. Future research could extend this inquiry by involving bank managers or decision-makers to capture the policy dimension of financial inclusion for PWD. This comparison allows researchers to assess the services provided to PWD.

Additionally, three experts in the disability field were interviewed, all senior academics (one male and two females) from prominent universities in the Yogyakarta Special Region. Two of them have physical disability. These experts were selected through purposive sampling based on their expertise in disabilities and financial inclusion, as well as their active involvement in disability empowerment programs. This sampling strategy enables researchers to set relevant informant criteria aligned with the study's objectives, considering the available time and resources (Palinkas et al., 2015).

Setting and participants

We recruited four adult informants (aged 18 and above) with disabilities, consisting of two blind and partially sighted people and two people with physical disability, for semi-structured interviews. The inclusion criteria for selecting participants were: (1) being a person with a recognized disability, (2) residing in Yogyakarta City or the surrounding districts of Sleman and Bantul, and (3) having prior experience in accessing or attempting to access formal

financial services. These criteria ensured that informants could meaningfully reflect on their interactions with banking institutions.

The decision to focus on individuals with physical and visual impairments is based not only on their ability to comprehend the interview questions and articulate their experiences but also on their active engagement with banking services. All selected informants reported experience accessing financial services, including account management, digital payments, and interactions with bank staff, ensuring their insights are relevant and aligned with the objectives of this study. However, it is acknowledged that the frequency and extent of use may vary among individuals, and this variability is considered a natural limitation in qualitative research exploring personal experiences. The informants in this study were drawn from Yogyakarta City and two surrounding districts, namely Sleman and Bantul. This geographic scope was chosen purposively to capture urban and peri-urban contexts with relatively higher access to banking services, while also reflecting the province's diverse settings. Although the study does not include all districts in the Yogyakarta Special Region, the selected locations provide sufficient variation to identify key challenges and opportunities related to financial inclusion for PWD. This limitation is acknowledged, opening the door to further studies with broader geographic coverage.

Data collection

In this study, we collaborated with experts with in-depth knowledge of disability issues to recruit potential informants from among PWD. The recruitment process used a snowball sampling technique, in which initial informants recommended other relevant individuals who met the study criteria. This approach allowed us to reach informants who might have been difficult to identify through conventional methods, particularly due to access limitations and the sensitivity surrounding disability-related issues.

Three trained field researchers were actively involved in the interview process. Their responsibilities included conducting interviews with informants who had provided consent to participate and ensuring that each interview was comprehensive and adhered to ethical research principles. All interviews were conducted using a semi-structured format, allowing for flexibility in exploring the informants' experiences and perspectives in depth while maintaining focus on the study's central themes. This approach aimed to gather rich and relevant data that accurately reflects the challenges and opportunities in accessing banking services for PWD.

Additionally, open-ended questions were employed in an exploratory manner, enabling informants to express their perceptions and viewpoints freely during the interviews. To ensure alignment with the research objectives, the open-ended questions were structured around the facilitators-and-barriers framework and guided by a predesigned interview protocol. This approach maintained consistency with the study's focus on financial inclusion while allowing participants to share their experiences in their own words, thereby enriching and validating the collected data.

Each interview session lasted approximately 30 minutes and was audio-recorded. Interviews concluded when data saturation was achieved, indicating that no new information emerged. The recorded interviews were carefully transcribed and analysed using inductive and reflective methods to identify emerging themes. The inductive technique helps ensure that research findings are grounded in informants' experiences and perspectives. In contrast,

the reflective technique involves the researcher's self-awareness that their experiences, assumptions, and perspectives may influence the interpretation of research results (Braun & Clarke, 2019). The use of both techniques serves for data analysis by allowing themes to emerge naturally from the data. It also enhances analytical rigour, ensuring that the findings are more authentic and accurately reflect the informants' experiences. The research team then discussed these themes to reach consensus on the final list. Illustrative quotes in English are included in the results section to support the identified themes.

Data analysis

This study employs qualitative data analysis using a thematic approach to identify patterns and meanings emerging from the interviews. As explained by Hartarto and Wibowo (2023), the thematic approach involves several systematic stages. The initial stage begins with identifying frequently occurring keywords and phrases in the interview transcripts, which are then transformed into codes. Each code represents a specific idea or concept relevant to the research focus.

These codes were inductively generated and determined by the researchers through a careful reading of the transcripts. At the same time, their interpretation and categorization were cross-checked through peer discussions to enhance credibility. The codes were subsequently organized and grouped into several categories based on similarities or connections in meaning, leading to the development of key themes. These themes capture essential aspects of the informants' experiences and perceptions regarding the accessibility of banking services. To provide a deeper, more contextual understanding, the data are presented through a narrative approach, with each key theme elaborated in detail and supported by quotes from the informants as illustrative examples.

To ensure the validity of the interview results, several strategies were applied, including member checking—confirming interpretations with selected informants—triangulation of data sources to compare perspectives across participants, and peer discussions to reduce potential researcher bias. These procedures enhanced the credibility and trustworthiness of the findings. This approach not only helps uncover existing challenges and opportunities but also offers practical insights for improving financial inclusion for PWD.

Ethical consideration

This study was conducted under ethical approval number 21972/UN6.B.4.17/PT.02/2024, issued by the Head of the Doctoral Program in Economics, Faculty of Economics and Business, Universitas Padjadjaran. This ethical approval ensures that the entire research process adheres to applicable ethical protocols and standards. Before the interviews were conducted, each informant was provided with a consent form outlining the scope of the interview and informing them that the conversations would be recorded for transcription purposes. In addition, informed consent is obtained either by having the interviewer read the document aloud and the informant verbally approve proceeding, or by having the informant personally review and sign the document to confirm their complete understanding and voluntary participation.

The researchers thoroughly explained the scope of the interview questions to the informants to ensure they understood the study's context and objectives. Topics discussed included the

informants' profiles, their knowledge of banking services, the benefits of having a bank account, the challenges they face in opening and using banking services, and their expectations for current banking services. This approach aimed to ensure openness and transparency throughout the process while collecting rich and relevant data to identify the enabling and inhibiting factors affecting financial inclusion for PWD.

While none of the research team members identify as PWD, the lead author has a longstanding engagement with disability-related policy studies in Indonesia, which informed sensitivity during data collection and analysis. We acknowledge this positionality and include it here to enhance transparency. This reflexive stance also demonstrates that credibility and dependability were pursued despite the study's small, context-specific sample.

Results

Participants characteristics

In June 2024, we conducted interviews with four informants who had consented to participate, including two blind and partially sighted people and two people with physical disabilities. The two blind and partially sighted people were both female, aged 49 and 56, and worked as housewives. Meanwhile, the two people with physical disability were both male, aged 50 and 53 years, and worked as massage therapists. The selection of these informants was based on purposive and snowball sampling, with inclusion criteria including being people with disabilities (PWD), residing in Yogyakarta City or its surrounding districts, and having prior experience with formal financial services. The similarity in their ages was not predetermined but rather emerged from the availability of individuals who met the inclusion criteria and agreed to participate. The choice of A as an informant rather than B, for instance, was determined by whether the individual met these criteria and was willing to be interviewed. Although only four informants were recruited, this number was deemed sufficient to achieve data saturation, as similar patterns and themes consistently emerged across interviews, ensuring the depth and richness of the information collected.

In July 2024, we further interviewed stakeholders involved in financial inclusion for PWD, including banking representatives and disability experts, to enhance the accuracy of the research findings. On the banking side, we interviewed personnel responsible for customer services at both conventional and Islamic banks operating in Yogyakarta. Additionally, interviews were conducted with experts, including three senior academics from well-known universities in the Yogyakarta Special Region. Two of these academics had physical disabilities, while the third focused on empowering PWD in the Yogyakarta Special Region.

Facilitators for enhancing financial inclusion for PWD in Yogyakarta Special Region

Based on the interviews conducted, it was found that although the majority of PWD do not yet have bank accounts, they have been engaging with informal financial institutions such as savings and loan cooperatives. These cooperatives are perceived as more accommodating towards PWD, offering services such as door-to-door banking, which eliminates the need for individuals to visit the bank for transactions like deposits. Cooperatives can thus be a viable

solution for meeting the financial needs of PWD, potentially improving their standard of living (Peprah et al., 2023). In other words, it can be concluded that some PWD are already financially included through microfinance institutions like cooperatives.

These cooperatives serve as a bridge, providing crucial financial services in a more accessible and user-friendly manner. In the context of this study, one notable example is a savings and loan cooperative established explicitly for PWD, known as *Bank Difabel*. The positive interactions with these institutions highlight the importance of tailored financial services that address the unique needs of PWD. The ability to conduct financial transactions from their homes or other convenient locations significantly reduces the barriers they face, fostering a sense of economic empowerment and inclusion.

"I prefer cooperatives because they offer door-to-door services, so I don't have to go anywhere (to deposit money). If I want to deposit, I just call them, and if I want to withdraw, I just call them too."

(Informant 8, male, 53 years old, blind and partially sighted person)

"If I want to save, I just call, and then the cooperative staff comes to my house for the fingerprint as well."

(Informant 8, male, 53 years old, blind and partially sighted person)

"From what I know, particularly those I assist, some have become members of a savings and loan cooperative specifically for persons with disabilities. They gathered to establish a cooperative called 'Bank Difabel'. Bank Difabel was established due to the difficulties persons with disabilities face in accessing financial services at regular banks."

(Informant 6, male, 52 years old, expert)

"I think many of my friends with disabilities already have their businesses. To run their businesses, they need funding... Many persons with disabilities have become members of a savings and loan cooperative specifically for persons with disabilities."

(Informant 3, female, 60 years old, physical disability, expert)

Another potential factor promoting financial inclusion for PWD in Yogyakarta Special Region is the availability of physical support facilities at banks. However, our interview findings indicate that only a limited number of informants had direct experience with banking services. The majority of informants reported relying on cooperatives because they perceived banks as less accessible. Among the few informants who had used bank services, they acknowledged the presence of ramps and ATMs but noted that these facilities were not always user-friendly and did not fully meet their needs. This indicates that, while accessible infrastructure such as ramps, specialized ATMs, and trained staff are essential and widely recognized in the literature as drivers of inclusion (Thohari & Rizky, 2021), their practical implementation in the Yogyakarta Special Region remains limited and uneven.

This uneven implementation of accessibility features can also be understood through the lens of institutional theory, in which banks may adopt ramps or specialized ATMs primarily in response to coercive pressures, such as regulatory requirements. However, the weak enforcement of these rules limits their consistent application (Puli et al., 2024). Without stronger normative or mimetic pressures, many banks in Yogyakarta have not fully institutionalized inclusive practices, leaving cooperatives to fill the gap. As DiMaggio and

Powell (1983) explained, organizations often conform to external pressures to maintain legitimacy, but in contexts where such pressures are weak or fragmented, institutional change remains partial and inconsistent. Consequently, for many PWD, the lack of consistent accessibility in banks reinforces their reliance on cooperatives, which are considered more approachable.

"According to me, innovation is a must. Support facilities and technology for all types of disabilities need to be pursued by banks because not all banks can do that. This can be achieved through better financial literacy and technology used by the banks."

(Informant 6, male, 52 years old, expert)

"However, we must facilitate, whether it's physical disability with building facilities such as providing wheelchairs for services, then providing pathways or ramps to enter rooms, as well as special forms. This should be done not only in banking but in all aspects of service."

(Informant 9, conventional bank)

"If the state says that all citizens should have equal opportunities, that's great. When talking about services, especially business-oriented ones, it's unlikely that people with physical disability wanting to save money would be turned away. From a business perspective, we would accept them in any way possible."

(Informant 9, conventional bank)

While none of the informants directly mentioned the digitalisation of bank account opening processes as a facilitator, Angwenyi et al. (2023) highlighted its potential to improve accessibility for PWD. Digital financial services can significantly help PWD overcome barriers to accessing financial services, bridging the gap between physical support facilities and providing broader access (Santoso, 2023). Innovations in mobile banking and online payment platforms provide a convenient and accessible alternative to traditional banking methods, reducing the need to visit a bank in person (Ozili, 2018). This digital shift, supported by family or trusted individuals, can bridge the gap created by physical barriers and promote broader financial inclusion. By continuing to innovate and tailor digital services to meet the specific needs of PWD, financial institutions can significantly improve the economic independence and quality of life for this community.

"Persons with disabilities find it very convenient with banking facilities, especially mobile banking, where we can transfer money and buy various goods without having to go out."

(Informant 4, female, 52 years old, physical disability, expert)

"Banking services are essential not only for persons with disabilities but also for non-persons with disabilities. Financial services providers include not only banks but also pension funds, investments, insurance, and digital payments."

(Informant 4, female, 52 years old, physical disability, expert)

"They usually pay online, using digital payments."

(Informant 4, female, 52 years old, physical disability, expert)

"For physical disability, we align their services with general customers, directing them towards digital services. General customers are also steered towards digital services, including those with physical disability, as they can use mobile phones and ATMs, making it easier than visiting a bank."

(Informant 9, conventional bank)

"We can offer pick-up and delivery services or even mobile banking units to provide services to customers. For instance, for customers who cannot come to the bank due to illness or physical disability, we can visit their homes under certain conditions."

(Informant 9, conventional bank)

"Our digital services innovate annually, enabling disabled customers who can use these services to do so just like general customers. However, for specific digital services tailored exclusively for, say, blind and partially sighted customers, we have not yet developed such specific features."

(Informant 9, conventional bank)

Barriers to increasing financial inclusion for PWD in Yogyakarta Special Region

Despite several supporting factors, several barriers remain to increasing financial inclusion for PWD in the Yogyakarta Special Region. The first barrier is the misperception between banks and PWD. Stigma and stereotypes suggesting that PWD are less capable of accessing financial services can lead to discriminatory treatment (Thohari & Rizky, 2021). This ultimately affects PWD's perceptions of banks, leading them to feel underestimated and lacking confidence, and to prefer traditional savings or other financial services perceived as more accommodating (Cui, 2023; Wann & Burke-Smalley, 2023).

"A negative stigma is attached to persons with disabilities when they enter a bank, resulting in different services compared to non-persons with disabilities."

(Informant 4, female, 52 years old, physical disability, expert)

"I hope the government provides more accessible facilities because sometimes it is made difficult. Ideally, they should distinguish and be more accommodating to people with disabilities."

(Informant 5, male, 50 years old, blind and partially sighted person)

"If the queue is long, please have staff assist because many still lack accessible services. My friend once told me he was ignored by the bank staff."

(Informant 8, male, 53 years old, blind and partially sighted person)

"I don't want to be prioritized, but at least be more accommodating."

(Informant 8, male, 53 years old, blind and partially sighted person)

"There is still a need for assistance to access credit. Even if it's a grant, there is a need for assistance because they are sometimes underestimated."

(Informant 3, female, 60 years old, physical disability, expert)

Another barrier to increasing financial inclusion for PWD in Yogyakarta Special Region is the lack of accessible facilities, both physical and non-physical, provided by banks. Not all banks have ramps, service desks at appropriate heights, ATMs with suitable height and audio facilities, or bank staff to assist with communication or account-opening form completion. Furthermore, the distance of bank branches from the residences of PWD can be a challenge, as travelling to the bank can be costly for those without personal transportation.

"Add ramps for wheelchairs, as some banks still don't have accessible pathways."

(Informant 2, female, 56 years old, physical disability)

"The Financial Services Authority Regulation requires that companions must be provided by the bank if the person is not a family member. The problem is that not all banks provide companions."

(Informant 4, female, 52 years old, physical disability, expert)

"In our bank, honestly, there are no ATMs specifically for persons with disabilities. There are no Braille options on our application forms either. This feedback is valuable, so we can consider making our forms more accessible."

(Informant 7, Islamic bank)

"Honestly, our ATMs are not fully equipped for persons with disabilities, especially for the blind and partially sighted people. While some machines have braille, they still need audio instructions to guide them."

(Informant 9, Conventional Bank)

Another barrier is that digital account-opening platforms, such as mobile banking, do not fully accommodate the needs of PWD, including the absence of audio facilities for the *blind and partially sighted*. This barrier underscores the need for continuous improvement in financial services and infrastructure to support the inclusion of PWD and ensure they have equal access to economic opportunities.

"Honestly, it's difficult for me to use my phone for WhatsApp, let alone open an online account. There has been no socialization about this."

(Informant 2, female, 56 years old, physical disability)

"When opening an account, they usually also get an ATM and mobile banking. However, if they click the wrong option, their mobile banking or ATM could get blocked, requiring frequent trips to the bank for maintenance."

(Informant 7, Islamic bank)

"Maybe mobile banking or ATM need to be adjusted to be used by the blind and partially sighted people. For example, mobile banking with audio could be a very helpful technological innovation."

(Informant 3, female, 60 years old, physical disability, expert)

Discussion

Based on the interviews with informants, several facilitating factors were identified that contribute to improving financial inclusion for persons with disabilities (PWD) in the Yogyakarta Special Region. One such factor is the presence of informal financial institutions, such as savings and loan cooperatives, which provide alternative access to financial services. Additionally, the availability of supportive physical facilities in some financial institutions and the digitalization of account-opening processes have further eased access to banking services for this group. These findings align with the study by Angwenyi et al. (2023), which recommended enhancing the accessibility of financial services for PWD by adapting and digitalizing services.

However, there are also inhibiting factors that slow down the progress of financial inclusion in the Yogyakarta Special Region. Misperceptions between banks and PWD regarding their capabilities remain a challenge, as does the limited accessibility of infrastructure in many banks. Moreover, digital platforms, such as mobile banking, have not yet fully accommodated the specific needs of PWD. While persons with physical impairments reported that mobile banking and digital payments are convenient for daily transactions, such as transferring money or shopping online without leaving home (Informant 4), there remain unmet needs for more inclusive features. For example, visually impaired customers cannot fully benefit from current mobile banking applications because they lack screen reader compatibility or voice command options (Informant 9). In addition, some customers with disabilities still require flexible alternatives, such as home banking visits or mobile banking units, when digital services are not feasible (Informant 9). These findings highlight that PWD need both accessible digital innovations and adaptive offline support to achieve more equitable financial inclusion.

Furthermore, these findings are consistent with previous studies by Angwenyi et al. (2023), Goundar and Sathye (2023), and Santoso (2023), which emphasized the importance of improving the accessibility of banking services and of developing inclusive policies that address the real needs of PWD. In addition to these findings, regulatory frameworks also play an essential role in shaping both the supporting and inhibiting factors of financial inclusion. At the local level, Yogyakarta has reinforced this commitment through Regional Regulation No. 5 of 2022 on the Implementation of Respect, Protection, and Fulfillment of the Rights of Persons with Disabilities, which strengthens the legal foundation for disability inclusion. Furthermore, the Yogyakarta Special Region is notable for having all its districts and municipalities enact local regulations on disabilities (Kementerian PPN/Bappenas, 2021). These regulations provide an enabling environment for inclusive financial practices, while also serving as an analytical lens to evaluate the extent to which opportunities and challenges in financial inclusion are addressed in practice.

Based on the facilitators and barriers to financial inclusion for PWD discussed above, we formulated strategies to enhance financial inclusion for this group through interviews with experts, as follows.

Strategies to enhance financial inclusion for PWD in Yogyakarta Special Region

Based on interviews with experts, thematic analysis of supporting and inhibiting factors, and relevant indicators of financial inclusion for PWD—such as account ownership, access to credit, digital banking usage, and customer satisfaction—several strategies have been proposed to enhance financial inclusion in Yogyakarta Special Region. These strategies were not only derived from the thematic analysis of interviews but were also confirmed by the expert informants during the study's validation stage. In this stage, the researcher presented the proposed strategies to key experts for feedback, ensuring that the results reflected both empirical evidence and the professional judgments of practitioners with experience in disability and financial inclusion.

These strategies were then tailored to reflect the local context, taking into account the specific functional limitations, mobility challenges, and digital literacy levels of PWD in the province. Table 1 summarises the proposed strategies under three main themes: misperceptions of banks towards PWD, availability of supportive facilities at banks, and digitalization of banking processes for PWD. By grounding the strategies in both measurable indicators and the real conditions of PWD in Yogyakarta, the proposed solutions aim to be both practical and efficient in addressing local barriers to financial inclusion.

Table 1: Strategies to Enhance Financial Inclusion for Persons with Disabilities

Theme	Strategies
Misperceptions of Banks Towards Persons with Disabilities	<ol style="list-style-type: none"> 1. Banks should provide home visit services to serve customers with disabilities or other limitations who are unable to visit bank branches in person. 2. Optimize the roles of People's Credit Banks (BPRs) and informal financial institutions, such as cooperatives and Baitul Maal wat Tamwil (BMT), to expand access to financial services for PWD, as they are considered more accommodating. In parallel, banks should be encouraged to develop inclusive digital banking platforms—featuring accessibility tools such as screen readers, voice commands, and simplified interfaces—so that PWD can access financial services remotely without physically visiting bank branches. This multi-channel approach can significantly enhance financial inclusion by addressing diverse needs and reducing physical and systemic barriers. 3. Enhance the Financial Services Authority's financial education efforts not only for disability communities and special schools, but also for financial service providers. This dual approach aims to empower PWD to understand and use financial services confidently, while simultaneously raising awareness among financial institutions of PWD's rights, needs, and accessibility requirements. Such inclusive financial literacy initiatives can foster mutual understanding, reduce stigma, and promote a more inclusive financial ecosystem.
Availability of Supportive Facilities at Banks	<ol style="list-style-type: none"> 1. There is a need for Standard Operating Procedures (SOPs) regarding banking facilities for PWD. 2. Monitoring of regulations issued by banking regulators/government needs to be in place. 3. There should be mechanisms to incentivize and disincentivize banks based on their services for PWD. 4. Involvement of PWD in the formulation of regulations as affected parties. 5. There is a need for SOPs for banking services specifically tailored for PWD. 6. Banks should have staff/technology with at least basic capabilities to communicate with all types of disabilities.

Theme	Strategies
Digitalization of Banking Processes for Persons with Disabilities	<ol style="list-style-type: none"> 1. There is a need for mobile banking and ATMs that are more accessible to PWD, especially the blind and partially sighted, such as those with voice capabilities. 2. Allocating CSR funds as an alternative solution to enhance banking facilities to be more disability friendly. This could help create a positive image for the bank as a pioneer in this area.

To address the misconceptions that banks have about PWD, it is recommended that banks provide home visit services and optimise the role of rural banks (financial institutions that operate conventionally and do not provide payment traffic services in their activities) and informal financial institutions, such as cooperatives and BMTs, which are considered more accessible. Additionally, financial education by the Financial Services Authority should be enhanced not only in Special Schools and disability communities but also for financial service providers. However, modern financial services—particularly digital banking and fintech platforms—also offer promising solutions by enabling PWD to access services remotely, without physically visiting a bank branch. Therefore, these platforms must be made digitally accessible, incorporating features such as screen readers, voice commands, and simplified interfaces. Integrating accessible digital technologies alongside physical outreach ensures that PWD are included through both traditional and modern channels, expanding reach while reducing barriers.

Regarding the availability of supporting facilities, it is acknowledged that the Financial Services Authority has recently issued the Guidelines for Access to Financial Services for Empowered Persons with Disabilities (SETARA Guidelines) in early 2025. This guideline provides comprehensive directions for implementing disability-inclusive financial services, covering general provisions and practical guidance on several aspects: physical infrastructure accessibility, digital infrastructure accessibility, service sensitivity, document accessibility, complaint handling, and companion guidance. Nevertheless, while the SETARA Guidelines serve as a regulatory framework, their practical implementation requires each financial institution to translate these provisions into concrete Standard Operating Procedures (SOPs) at the institutional and branch levels. SOPs should ensure that frontline staff and operational systems consistently apply inclusive practices in daily banking activities. In this regard, the creation of SOPs is the responsibility of individual banks and financial institutions, guided by regulations issued by the Financial Services Authority.

Moreover, there should be monitoring of regulations issued by banking regulators or the government, as well as mechanisms to incentivize and disincentivize banks in their service to PWD. The involvement of PWD in the drafting of regulations is also crucial to ensure that policies meet their needs. Furthermore, bank staff or technology should have basic skills to communicate with people with all types of disabilities.

To support digitalisation, more accessible mobile banking and ATMs with voice capabilities are needed, particularly for people who are blind or partially sighted. CSR funds are also proposed to enhance inclusive banking facilities, which could help create a positive image for the bank as a pioneer in this area. Implementing these strategies is expected to improve access to and the quality of financial services for PWD, thereby enhancing overall financial inclusion in the Yogyakarta Special Region.

Despite the factors supporting and hindering financial inclusion for PWD in Yogyakarta Special Region, and the proposed strategies, banks can generally overcome obstacles in the

account-opening process by providing a guide or buddy to accompany them. This is particularly true if PWD are included in the Integrated Social Welfare Data and receive government assistance transferred through partnering banks. The remaining challenge is the barriers in credit and insurance applications for PWD, as they are often perceived as less capable. Therefore, there needs to be a paradigm shift that teaches or positions PWD as customers with equal rights.

Strengths and limitations

This study employs a qualitative approach through semi-structured interviews with PWD and key stakeholders in financial inclusion, including banking representatives and disability experts. This approach enables the researchers to explore the issues in depth, not only from the perspective of service users (PWD) but also from the viewpoint of service providers and experts. Semi-structured interviews offer the flexibility to explore informants' experiences, challenges, and needs comprehensively while maintaining focus on the key research topics. This approach provides a holistic understanding of the challenges and opportunities in delivering financial services to PWD, along with practical solutions and policy recommendations. Consequently, the findings of this study are expected to contribute meaningfully to the development of more effective financial inclusion strategies for both the banking industry and policymakers.

However, this study focuses only on individuals with blind and physical disability and thus does not represent the full spectrum of disabilities, such as intellectual, mental, or other sensory disabilities. While we recognize the importance of including the Deaf community, this study did not include Deaf participants due to the lack of available sign language interpreters and the additional resources required to ensure accessible and effective communication. We acknowledge this as a limitation and recommend future studies to deliberately include Deaf and hard-of-hearing participants through inclusive research designs and appropriate accommodations.

Additionally, the number and variety of informants are limited, which may mean the data do not fully capture the diversity of experiences and needs of PWD. All informants interviewed are from urban areas, which may offer better access to banking services compared to rural regions. To obtain a more comprehensive and inclusive understanding, it is essential to involve participants from rural areas, as they may face distinct challenges in accessing financial services. Future research is therefore recommended to expand the scope to include a broader range of disabilities and geographic areas to gain a more representative picture of financial inclusion for PWD in Indonesia.

Conclusion and recommendations

Financial inclusion is a crucial program that should be pursued for the benefit of all individuals, including PWD. A deep understanding of this issue, particularly the factors that support and hinder the advancement of financial inclusion for PWD, is essential for developing practical solutions and strategies. Using the case of the Yogyakarta Special Region, this research analyzes the factors supporting financial inclusion for PWD, including access to alternative financial services. This means that PWD are financially included, even if not

through traditional banking services, highlighting the need for improved banking facilities for them. This is also supported by digitalisation in the account opening process, which can help PWD overcome barriers to accessing financial services. Meanwhile, the factors hindering financial inclusion for PWD include misconceptions held by banks about PWD and vice versa, the lack of accessible bank facilities – both physical and non-physical – and the inadequacy of digital banking platforms in accommodating the needs of PWD.

To address the misconceptions banks often have about PWD, it is recommended that banks provide home visit services, following the strategy of rural banks and informal financial institutions such as cooperatives. Additionally, financial education by the Financial Services Authority should be enhanced in Special Schools and disability communities. There is also a need for specific Standard Operating Procedures (SOPs) for banking services for PWD, regulatory oversight, mechanisms to incentivize and disincentivize banks, and the development of disability-friendly technology and facilities to support financial inclusion in the Yogyakarta Special Region.

However, this study is specific to the Yogyakarta Special Region, so the findings cannot be generalised to other regions but can serve as a reference for similar studies. Furthermore, the informants in this study come from urban areas and their surroundings. Hence, the conditions of those living in rural areas, such as Kulon Progo, Gunung Kidul, the coastal regions of Bantul, or mountainous areas in Sleman, are not fully represented. Additionally, not all types of disabilities could be accommodated due to limitations in the data collection process. Although this study focuses on Yogyakarta only, its findings resonate with evidence from other developing countries (e.g., Malawi, Fiji, Ghana) and reflect broader challenges in Indonesia, where implementation gaps persist despite progressive national regulations (e.g., Presidential Regulation No. 114/2020). As Yogyakarta is often regarded as a pioneer in disability inclusion (Izzah & Atmojo, 2025), the barriers identified here may be indicative of systemic challenges in other Indonesian regions with less developed disability frameworks.

Nonetheless, this study is limited to a single urban context, thereby limiting its representativeness. Future research could adopt a comparative design across provinces or a cross-country analysis. Despite these limitations, the results of this study should be viewed as preliminary insights rather than definitive conclusions. The findings are intended to inform ongoing discussions and to provide initial recommendations for financial institutions, financial regulators, and the government to evaluate operational activities and regulations related to economic inclusion for PWD. This will help address misconceptions banks have about PWD, the availability of supportive bank facilities (both physical and non-physical), and the digitalization of the account-opening process for this group. Meanwhile, future researchers are encouraged to expand the scope of disability types and geographical areas to provide a more comprehensive understanding of financial inclusion for PWD in Indonesia.

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