Beyond reach: developing a holistic measurement of cash-in cash-out networks

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About this report

Economist Impact conducted this research initiative with the support of the Bill & Melinda Gates Foundation (BMGF). The research objective is to study cash-in/cash-out (CICO) infrastructure through various lenses, providing a more nuanced understanding of the reach, quality and user experience of CICO networks. The initiative leverages a global survey piloted in five countries: Colombia, Côte d'Ivoire, India, Nigeria and Pakistan, alongside existing data to develop a diagnostic tool that is intended to be used by regulatory authorities, supervisory agencies and policymakers who regulate and set financial inclusion policies.

Beyond reach: developing a holistic measurement of cash-in cash-out networks is a report written by Economist Impact. The findings are based on an extensive literature review, expert interview programme and survey findings. Economist Impact bears sole responsibility for the content of this report. The findings and views expressed do not necessarily reflect the views of BMGF.

We appreciate and value the input and guidance throughout the project from the following:

- **Dave Kim**, program officer, Bill and Melinda Gates Foundation
- **Emilio Hernandez**, senior financial sector specialist, CGAP
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- **Sunil Kulkarni**, CEO, Business Correspondents Federation of India (BCFI)
- **Ronke (Oni) Kuye**, CEO, Shared Agent Network Expansion Facilities (SANEF) Ltd.
- **Sohail Javaad**, State Bank of Pakistan, director in the payment systems department
- **Pamela Shao**, chief executive officer, Financial Sector Deepening Tanzania

Before commencing with the research programme, Economist Impact assembled a group of leading experts —the advisory panel—to ensure alignment of the programme with the financial inclusion agenda. The panel meeting was held in April 2022. The panel provided guidance and input to help shape the research and diagnostic tool design. The findings and views expressed in this report do not necessarily reflect the views of the individual panel members. We would like to extend our special thanks to the advisory panel members— listed below—for their time and advice:

- **Kennedy Komba**, director of financial deepening and inclusion, Bank of Tanzania

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Beyond reach: developing a holistic measurement of cash-in cash-out networks
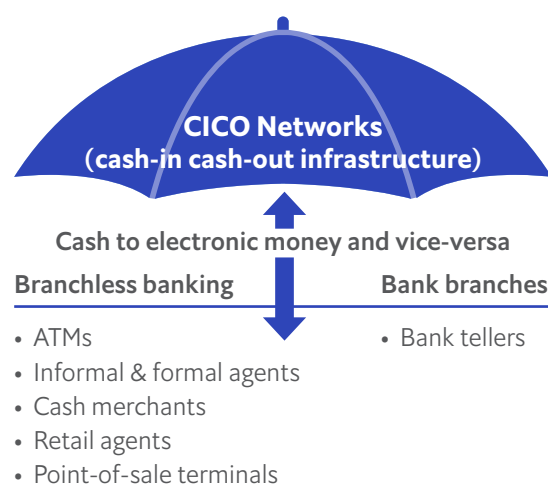
About the project

Financial agents, bank branches, ATMs and mobile apps extend the reach of financial services. For many, they are the first and most important touch points with the financial system. As financial institutions undergo a digital transformation, individuals' interactions with these physical touch points shape their views on financial services and how they impact their lives. Positive experiences can cultivate users' trust and help them build the requisite financial capabilities to become savvy, self-directed users. In less optimistic scenarios, negative experiences can replicate unequal power dynamics, disenfranchising users, breeding distrust and contributing to financial disempowerment.

These touch points make up a network of cash-in cash-out (CICO) providers that help connect an increasingly digital financial system to economies that are heavily dependent on cash transactions. Robust CICO networks facilitate the back-and-forth exchange between physical cash and digital money, playing a significant role in extending the reach of financial services to unbanked and underserved populations.

Figure 1 lists the components of CICO networks. CICO agents, in particular, have assumed the role as the human faces of the financial system

in neighbourhoods and villages where access was previously non-existent. In addition to converting between digital and physical currency, agents can communicate customers' needs to financial service providers (FSPs), engender trust in the financial system in their communities, and broaden financial access in a cost-effective manner.[1] Keeping in mind these essential functions, policymakers, regulators and FSPs need a comprehensive picture of cash points to meet their goals of expanding financial access, deepening usage and ensuring that financial services have a positive impact on users' lives.

Figure 1: Components of CICO networks

CICO Networks
(cash-in cash-out infrastructure)

Cash to electronic money and vice-versa

Branchless banking

- ATMs
- Informal & formal agents
- Cash merchants
- Retail agents
- Point-of-sale terminals

Bank branches

- Bank tellers

Source: Regulating Cash-in Cash-Out Networks in LMICs, EPAR[2]

Economist Impact has developed a first-of-its-kind Cash Point Diagnostic Tool that provides policymakers, regulators and FSPs with a more complete view of cash points in a specific economy. The tool assesses the services provided by CICO networks and the experiences of their users in three domains: reach, access and quality. During 2022 our team piloted this tool in five key economies: Colombia, Côte d'Ivoire, India, Nigeria and Pakistan. Our findings uncovered insights about the state of cash point networks, the challenges people face when using them, and opportunities to increase trust and user engagement. Applied to different economies, this tool can inform policy, guide strategies to implement inclusive finance, and measure progress on achieving these goals. The tool examines the user experience, employing surveys to pinpoint elements and behaviours that improve or diminish the quality of interactions with the network. In our pilot study, these surveys captured insights from each country. As CGAP's (the Consultative Group to Assist the Poor) approach to promoting "good" CICO agent networks notes, asking the right questions is key to diagnosing shortcomings.[3] Economist Impact's Cash Point Diagnostic Tool provides a methodology for asking and answering important questions about how users experience and take advantage of these networks.

Understanding CICO networks: what we know and what is missing

Economies worldwide have seen the share of cash transactions decline in recent years.[4] Driven by the emergence of new payment technologies and accelerated by the covid-19 pandemic, many consumers opt for payment options they deem to be more convenient or useful than cash, including payment cards and apps. According to some estimates, a tipping point could arrive as soon as 2025 for when absolute cash usage begins to decline globally.[5] Nonetheless, cash is still widely used for transactions and as a store of value around the world, coexisting with newer payment technologies, and meaning that people demand the ability to choose and easily switch among payment methods.

The adoption of alternative payment technologies, and digital financial services (DFS) more generally, varies across economies, falling into three roughly defined categories: developing, advanced and mature DFS markets.[6] Cash points are critical enablers for DFS adoption, allowing people to switch back and forth between physical and digital transactions according to their needs. For unbanked individuals to consider moving some of their transactions to DFS, they must be convinced that the relative ease and security of long-distance transfers of remittances, for example, will not be outweighed by the burden of cashing out in remote rural areas.

Figure 2: Three stages of DFS* adoption and growth of CICO networks
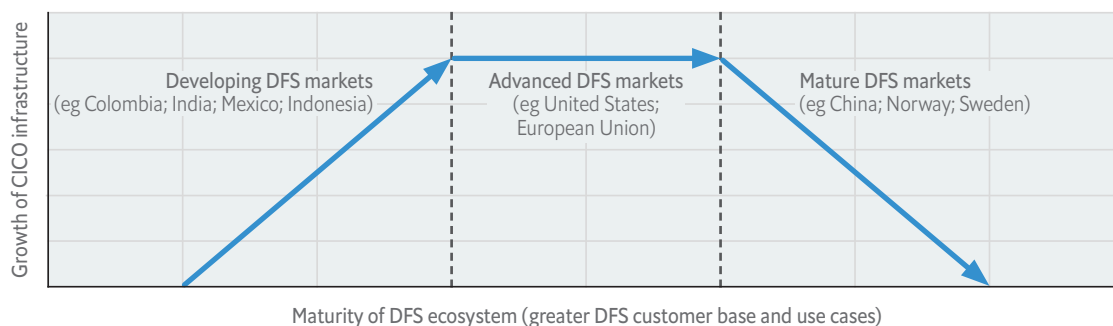
Source: The Importance of CICO Growth in Developing DFS Markets, CGAP[7]

*Digital Financial Services
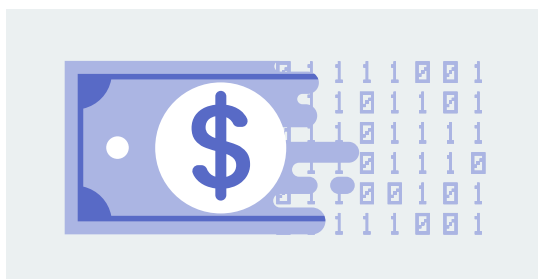
The gradual phasing out of cash in favour of DFS is the ideal path forward to increase financial inclusion. For (potential) users of financial services, DFS can lower the risk and cost of transactions compared with cash, while increasing access to a variety of services that would be unavailable or difficult to access without DFS, such as savings, insurance and credit.[8] For FSPs, DFS create economies of scale that lower the costs to serve customers, allow for service customisation, and improve the speed, security and transparency of transactions.[9]

As FSPs have shifted to DFS, the costs associated with serving more remote clients have decreased, expanding the universe of viable customers. FSPs can expand access by extending the reach of their physical service points and the associated costs of physical cash management, as well as by considering digital service delivery to clients regardless of their physical location. From the customers' point of view, instead of considering where the nearest bank branch is, the location of the nearest cell phone tower or network connection has become more relevant for day-to-day transactions. Further offerings, such as ATMs, CICO agents and mobile money kiosks provide additional avenues for extending the reach of financial services in ways that are more cost effective for providers than older models, such as expanding the network of bank branches.

Expanding CICO networks is key to driving the growth of DFS, and is also, perhaps counterintuitively, an important step in economies transitioning from markets predominately using physical currency to ones where digital transactions dominate. Evidence from CGAP shows that in order to phase out cash you need to increase the number of cash points, allowing people to effortlessly switch between cash and digital money. Once people are confident that they can switch back and forth with ease, and that digital money is widely accepted for a variety of transactions, they will increasingly choose digital transactions. Ultimately, FSPs can then reduce investments in CICO networks over time.[10]

BOX 1

CGAP's six outcomes of a "good CICO agent network"[11]

The increasing importance of cash-in cash-out (CICO) networks in the financial inclusion toolkit has created an opportunity for policymakers, regulators and financial service providers (FSPs) to expand their understanding of what makes for "good" networks, to use CGAP's terminology. CGAP's model for "good CICO agent networks" describes six positive outcomes across four stakeholders (end-users, agents, providers and government).

In this model, there are three positive outcomes related to the end-user experience: **reach**, **quality** and **trust**.[12] From a reach standpoint, agents need to be close enough to users that distance is not a barrier. Regarding quality, agents need to be cost-effective, open and available, simple to use, reliable and non-discriminatory. And in terms of trust, users should be confident that agents are trustworthy options for their regular transactions.

The remaining three positive outcomes are distributed across the other stakeholders: **agents** (operations should be economically viable); **providers** (expanding agent networks should be commercially attractive to FSPs); and **government** (agent networks can deliver financial support to individuals in regular and emergency circumstances).

Experiences with CICO networks

Given their lower cost structure compared with fully fledged bank branches, more seamless integration of digital financial services, and variety of models, building out cash point networks has been a priority investment for policymakers, regulators and FSPs seeking to promote financial inclusion. While CICO networks have developed distinctly in different economies, their continual expansion has been a constant in recent years.

In Kenya, investments in financial sector infrastructure saw the number of bank branches rise from 581 in 2006 to 849 in 2008, an increase of 46%. While this contributed to a higher proportion of Kenyan adults with access to formal financial services—from 16% in 2006 to 24% in 2009—it failed to significantly improve inclusion among individuals living far from bank branches, notably in rural areas. At the same time, the increased use of the M-Pesa mobile money service was more effective in increasing financial access among rural Kenyans, as demonstrated by the non-relationship found between the distance or time to a bank branch and mobile

banking usage. At the time of the study, in 2012, the network of registered M-Pesa agents was estimated at 37,000.[13]

In 2006 the Reserve Bank of India (RBI, the central bank) approved an agent banking model that allowed banks to engage non-bank intermediaries as "business correspondents" to extend the reach of banking services. By 2019 the RBI reported some 1 million agent banking outlets in the country, with more than half located in rural areas.[14] The Indian government has supported this expansion in rural areas by channelling government payments to people (G2P) through these private agent networks, increasing the services offered by agents and contributing to their financial sustainability.[15] CGAP identified this practice of using CICO agent networks to deliver government social programmes as one of the six key outcomes for "good" cash point networks[16] (see Box 1).

Additional synergies exist between the expansion of rural CICO agent networks and government economic and social development programmes. The Chinese government's rural capacity development programmes have educated rural entrepreneurs about the economic opportunities that new digital economies bring for agents and customers. Alibaba's Rural Taobao programme, meanwhile, has rapidly expanded the company's agent network to 30,000 rural villages and increased use of the Alipay platform and financial services.[17]

In Colombia, the share of adults with access to at least one financial product increased from 56% in 2008 to 81% in 2018 as the total number of agents expanded from 3,500 to 52,700 during those years. This expansion has also been key to extending services to underserved areas, including rural regions. Agents are an increasingly important part of the country's financial system. By 2020 cash transactions via agents represented 21% of total bank transactions, compared with just 3% in 2008.[18]

Table 1: Datasets and indicators relevant to measuring CICO networks

Institution	Dataset	Most recent	Example indicators
World Bank	Global Payments Systems Survey[19]	2018	Interoperability among mobile money service providers
IMF	Financial Access Surveys[20]	2022	Access points per 100,000 adults
AFI	Core Set of Financial Inclusion Indicators[21]	N/A	Average time spent queuing at a branch of a financial institution and/or bank and non-bank agent
World Bank	Global Findex Database[22]	2021	Can use a mobile money account without help from anyone, including a mobile money agent (% age 15+)
GSM Association	Mobile Money Prevalence Index[23]	2021	The number of agents per 100,000 adults, using the Agent Distribution Index
GSM Association	Mobile Money Regulatory Index[24]	2019	Inclusion of a gender component

Measuring the success of CICO networks

As the importance and size of CICO networks have grown, governments and international organisations have sought to measure their expansion, with a particular focus on their reach. The World Bank, the International Monetary Fund (IMF) and the Alliance for Financial Inclusion (AFI) developed datasets and frameworks to chart agent networks' volume, density, proximity, access, usage and product quality, among other dimensions. Analysis using existing datasets has predominantly focused on improving the reach of CICO networks. While some indicators look beyond reach, critical questions regarding network accessibility and quality remain unanswered (see Table 1). With the introduction of the Cash Point Diagnostic Tool, Economist Impact has provided stakeholders with a means of beginning to answer these questions and measuring how well these networks are performing to meet financial inclusion goals.

Measuring the expansion of cash points has been important for tracking their growth and understanding their role in increasing financial access. However, in order to measure the deeper effects of how users experience access to financial services, policymakers and FSPs should employ a more holistic methodology to assess CICO networks. In addition to the networks' reach, assessments should include metrics on accessibility and quality. As researchers and policymakers have noted for years regarding measurements of financial inclusion more broadly, a multidimensional approach is critical to avoiding blind spots that crop up when metrics focus on reach and access alone.[25]

Relevant metrics include the cost-effectiveness of using an agent; if the agent is available and open; how intuitive conducting transactions is; and if the services are adequately provided regardless of gender, identity or other personal attributes. These access metrics provide a fuller picture of the experience that users have with CICO

networks reaching the areas where they live, as captured by the more typical proximity indicators. In addition, policymakers and regulators should measure quality according to service consistency; whether services are provided without issues, errors or fraudulent activity; if agents offer relevant support; and if they are accessible. Once people have access to services nearby, it is important that they function reliably, conveniently, affordably and fairly. Policymakers can further expand quality metrics to assess the trustworthiness of agent networks based on user experiences—do users trust FSPs with their funds and can they easily verify the results of their transactions? Economist Impact's Cash Point Diagnostic Tool includes user interviews to better understand the relative ease or difficulties they face using CICO networks.

Introducing Economist Impact's Cash Point Diagnostic Tool and piloting it in five countries

The diagnostic tool

Economist Impact's Cash Point Diagnostic Tool provides a framework for governments seeking to assess CICO agent networks across three key dimensions: reach, access and quality (see Table 2). The tool assesses a broad range of cash points, including agents, physical access points, DFS providers and mobile money access points.

It is designed primarily for regulatory authorities, supervisory agencies, policymakers, and other government officials who regulate and set financial inclusion policies. It expands their view of CICO networks, allowing them to determine areas of improvement in their country, diagnose the user experience and monitor how regulations are performing.

Table 2: Domains and indicators of the Cash Point Diagnostic Tool

Domain	Description	Indicators
Reach	Assess the volume, density and proximity of various types of cash points (including branches, ATMs, and mobile money or bank agents)	• Density • Proximity
Access	Determine how accessible cash points are based on whether they are affordable, reliable, interoperable and whether agents are able to provide relevant and consistent processes and services across accounts	• Affordability • Reliability • Interoperability
Quality	Assess whether users are able to conduct transactions quickly and easily, agents provide fair treatment at cash points and services are safe and trustworthy	• Convenience • Fairness and safety

Source: Economist Impact

The tool enables cross-country comparisons on performance across dimensions and indicators, relying on data from central banks, FSPs and, critically, a demand-side survey that seeks to understand the typical cash point user. This explores what type of account they use, what transactions they conduct and how often, and why they use a cash point. Policymakers can disaggregate these results by variables such as gender, rural or urban settings, age group and the frequency of service use, allowing them to dig into the survey data for insights specific to the CICO networks in their country.

For example, the data collected enables stakeholders to determine if the proximity of a cash point to home or work is more influential in the decision to use it among men or women, older or younger populations, and rural or urban users. The diagnostic tool's data collection across the three domains comprises 82 sub-indicators. These explore, among other aspects, the volume, density and proximity of various types of cash points; how accessible cash points are based on whether they are affordable, reliable and interoperable; if users can conduct transactions quickly and easily; if agents provide fair treatment at cash points; and if services are safe and trustworthy.

Using the tool, policymakers can gain insights regarding a typical cash point user's habits and their perspectives on the affordability,

convenience, fairness and safety of cash points. With these insights, they can establish incentives, propose or modify regulations, and identify target populations for financial inclusion policies. A more nuanced understanding of when, how and why people use CICO networks could help policymakers design public-private partnerships or other tools to expand financial inclusion via these networks. For example, Economist Impact's survey data did not identify anyone that used a cash point multiple times per week in India or Colombia, compared with one in five surveyed users in Nigeria who visited them more than once per week. Investigating the use patterns behind these data could lead authorities in each of these countries to approach supporting the viability of agent networks differently.

Piloting the methodology across five countries

Economist Impact selected five countries to test the diagnostic tool: Colombia, Côte d'Ivoire, India, Nigeria and Pakistan. We chose these countries to cover several regions around the world, examine distinct agent network models, and take advantage of existing datasets. In each country we collected data using a survey of 1,000 users, with a focus on identifying respondents who had an account and were familiar with local mobile money and e-money options. At the same time, we aimed for a nationally representative sample of adults over 18 years of age balanced according to age group, gender and income. The data captured users' characteristics, preferences and experience with cash points, while our analysis revealed several broad trends related to the reach, access and quality of CICO networks.

"**Economist Impact's** **Cash Point Diagnostic Tool** provides a framework for governments seeking to assess CICO agent networks across three key dimensions: reach, access and quality. "

Key findings from our research

Economist Impact's pilot of the Cash Point Diagnostic Tool surveyed 5,000 people across five countries, collecting detailed data on the reach, access and quality of CICO networks. By analysing these data, we arrived at six broad conclusions that can help us better understand how users experience conducting transactions at cash points. In turn, we were able to suggest some steps to improve this experience and, consequently, usage of CICO agent networks to access the broader financial system.

Our findings emphasise the importance of moving beyond reach as the primary measure of implementation of CICO networks, challenging policymakers to also prioritise critical enablers like connectivity and appropriate regulations for transparent and adequate fee structures. Our analysis also uncovered opportunities to increase the relevance and utility of agent networks, including building trust, the tailored provision of value-added support, and use of gender-intentional design to increase accessibility and equity.

The tool provided data that documented the differences as well as the similarities among the five pilot countries. A thorough analysis of the data points from each country reinforces the

common themes from our key findings, while pointing to the idiosyncrasies of each market that will require unique solutions according to each country's context.

Though distance dominates, myriad considerations define the user experience

Expanding the reach of the financial system through cash points, essentially increasing the proximity of cash points to users, remains a priority to achieve financial inclusion, especially for those without accounts. In our research among account holders, two-thirds of respondents could walk to their nearest cash point in 10 minutes or less, while 91% could within half an hour. Moreover, 75% of users in cities can reach a cash point in 5-10 minutes compared with 55% in villages and the countryside.

While proximity is the main factor that users consider when choosing a cash point, a significant proportion base their selection on other factors. We found that 53% of all users report that proximity to home or their place of work is the reason why they use the cash point they use most frequently, meaning the other half of users (47%) selected other reasons. At the national level, proximity as the most important factor was

highest in Colombia (65%) and lowest in India (43%). Across countries, women were slightly more likely to prefer nearby cash points (56%) to men (51%).

Beyond proximity, respondents chose cash points that were reliably open and available (33%), had low transaction surcharges (9%), and had their preferred person at the cash point (8%), among other factors. In order to engage people who already have access to cash points, policymakers should shift their focus from expanding reach to ensuring the experience is high quality and consistent at each cash point. Differences among the countries in our research highlight areas that regulators, FSPs and agents can examine further. In India, 20% of those surveyed preferred their chosen cash point because of the agent or person there. In Côte d'Ivoire, 14% selected a cash point based on low transaction surcharges. Stakeholders can use these results to build on the existing network's strengths and design interventions to remedy areas of concern.

Increasing the number of female agents could improve the user experience for both genders and expand accessibility for women

The number of female agents worldwide falls short of reflecting the overall population, or even the population of cashpoint users. Especially in low- and middle-income countries, most agents are men. Data from the World Bank's Global Findex found that nearly all agents were men in Pakistan and India.[26] The number of female agents may have increased in recent years, but it has not achieved parity. Meanwhile, a growing proportion of women are using DFS, although their rates still lag men's usage.[27]

Our research identified opportunities to increase women's usage of CICO networks by increasing the number of female agents. Countries where users have higher preferences for being served by someone of the same gender also have fewer female agents. Overall, 39% of respondents reported a preference for receiving assistance from someone of the same gender. This preference was particularly high in India (58%) and Pakistan (53%), but respondents in these two countries also reported fewer female agents. Indeed, the share of respondents stating that they had not seen female agents at their preferred cash point stood at 48% in Pakistan and 28% in India, against an average of 25% across all five countries.

Increasing the number of female agents could drive higher demand for cash point services among women. Female respondents were more likely to strongly prefer assistance from someone of the same gender, at 21% versus 17% among men. The gap between male and female agents is one of the barriers to increasing women's access to cash points and DFS more generally. According to CGAP, "removing barriers for women to use CICO and act as agents would help to boost rural demand and expand the number of agents."[28] Our findings documented a usage gap that also supports this recommendation:

male respondents were more likely to report they use cash points once a week or more (50%) than female respondents (39%).

"Male respondents were more likely to report they use cash points once a week or more (50%) than female respondents (39%)."

The gap in service between female and male agents could also be contributing to the more negative outcomes for women who use DFS, including issues such as lower rates of fraud resolution. Women were more likely to report that they are "very concerned" about financial fraud incidents affecting them (52%) compared with male respondents (44%). Both genders experience almost equal amounts of fraud (27% for men versus 29% for women), but female respondents were more likely to report that their fraud incidence had not been resolved (47%) than male respondents (34%). The data suggest that increasing the number of female agents could build more trust in DFS among women by addressing their higher preference for assistance from female agents and potentially creating an environment where they are more likely to trust in agents enough to seek their assistance in resolving occurrences of fraud.

In addition to increasing trust and addressing their concerns about fraud, prioritising the incorporation of female agents could help improve the user experience for women (and men). In 2021 an Ideo.org report noted that "because women are more restricted in terms of mobility and who is deemed appropriate for her to interact with, non-bank financial institutions (NBFIs) within her community are more accessible and acceptable for her to engage with."[29] The report also found that women agents were perceived to be more "patient and understanding" overall, and that while increasing the number of women agents could help

increase women's usage of DFS, other barriers remained significant, including lower rates of mobility, numeracy and attitudes towards women managing money.[30]

Country-specific data, such as the results uncovered by Economist Impact's Cash Point Diagnostic Tool, are key to identifying some of the barriers women face as users of CICO networks. According to CGAP, approaches to achieve positive DFS outcomes for women are "highly context-dependent, requiring in-depth analysis."[31] Understanding women's preferences and concerns related to CICO networks is a significant contribution for policymakers seeking to increase gender equity in DFS provision and usage. The Cash Point Diagnostic Tool provides policymakers with a methodology to collect data on women's experience with DFS that will allow them to target their efforts to increase gender equity.

To build trust in CICO networks, FSPs and agents should reduce fraud and mistreatment

Trust is an essential ingredient to a well-functioning and efficient financial system, but slightly more than four in ten survey respondents expressed a lack of trust in agents with their money. This high level of distrust could be slowing down the growth of DFS and CICO networks as people choose to transact via more trusted methods. Effectively leveraging CICO networks to increase financial inclusion will require increasing users' trust in agents, but this will be difficult because our research also uncovered significant concerns among CICO network users regarding potential and actual fraud. In addition, the data highlight difficulties resolving fraud cases, combined with the lack of trust in agents.

In our survey, greater trust in agents was found in countries with relatively better performances on fraud resolution and lower rates of customer mistreatment. India's relatively good performance

on fraud resolution was matched by a high level of trust in agents (75%). Nonetheless, trust in agents remains relatively low on average across the five countries. Just 58% of our respondents said they trust agents with their money. In addition to India, trust in agents is higher in Colombia (65%) but lower in Côte d'Ivoire (47%) and Nigeria (51%).

Lower trust in agents in Côte d'Ivoire coincided with our findings regarding customer mistreatment by agents. Across the complete dataset, only one in three respondents reported mistreatment by agents, but that figure jumped to one in two in Côte d'Ivoire, which was the only country in the pilot study where relatively significant numbers of users complained of mistreatment. In Côte d'Ivoire, respondents reported being charged hidden fees (23%), feeling rushed to conduct a transaction (20%), that services were not explained clearly (15%), and being ignored by an agent (14%), among others.

Nearly three-quarters (72%) of respondents were moderately to very concerned about fraud. More than half (51%) rated their level of concern at 4 or 5 on a 5-point scale, where 5 was the most concerned. In terms of actual fraud,

28% of respondents reported having experienced fraud during the past 12 months, and of those cases 39% were unresolved. For cases that were resolved, FSPs or banks were most likely to have helped users (25%), followed by agents (18%), a special agency (14%) and government authorities (4%).

Comparing men and women, resolution rates were slightly lower for women but similar for the different options, except for agent-resolved cases. For this category, 20% of resolutions were among men and only 14% were among women. This could be the result of women preferring to receive assistance from female agents, of which there are fewer. And, as noted in the previous finding, women were more concerned about fraud (with 52% of women and 44% of men "very concerned"), which was also associated with a higher likelihood that women's experiences of fraud had not been resolved (47%) compared with men's (34%). Despite worse fraud-related outcomes among women, they were only slightly less trusting of agents than men—58% agreeing that they could trust agents with their money compared with 59% among men.

At the country level, Nigeria exhibited the highest rates of concern over financial fraud (70% were "very concerned") and Colombia was the lowest (28%). Respondents in Nigeria pointed to "overcharging for transactions or charging for normal deposits" as the most common type of fraud. In terms of resolution, Pakistan had the highest rate of unresolved fraud reports (56%), followed by Nigeria (46%), with India at the low end (31%). Policy remedies for high levels of fraud include measures aimed at consumers, FSPs and regulators. Educational campaigns can create and sustain awareness among customers and agents.[32] FSPs should establish operational protocols to identify, manage and report fraud, including robust analytics and monitoring. Regulators can increase enforcement and prosecutions.[33]

Prioritise solving connectivity challenges

Reliable connectivity is integral for enabling CICO networks, which aim to extend the reach of financial services to rural and underserved areas. However, rural areas around the world lack "meaningful connectivity".[34] According to a 2022 report from the Alliance for Affordable Internet, just 5% of rural residents surveyed across nine low- and middle-income countries[35] reached this standard. The survey also covered three countries that are included in our pilot study: Colombia, India and Nigeria.

In practice, unreliable connectivity (30% of responses) contributes significantly to a high percentage of denied transactions, reducing the effectiveness of CICO networks in increasing financial access and inclusion and diminishing the value proposition for potential users. Other reasons reported for denied transactions include a lack of agent liquidity (19%), that the transaction was too large (7%), and the inability to transfer to other networks (6%).

At the country level, reports of connectivity issues contributing to denied transactions were highest in Côte d'Ivoire (54% of responses) and Nigeria (41%) but lowest in Pakistan (16%) and Colombia (19%). Towns were most affected by connectivity challenges (34% of responses), compared with 29% in both cities and rural areas. Sixty-one percent of our respondents reported a denied transaction during the previous year and almost half of these were attributed to mobile network, internet or battery issues.

Although most denied transactions are eventually resolved (89%), they represent a burden for customers and agents. Resolving this issue takes effort and time. This is particularly true for rural areas. Thirty-seven percent of people in villages and the countryside reported that denied transactions were a significant inconvenience (versus 29% of those in cities and 26% in towns).

Denied transactions represent a burden for customers and agents, despite 89% eventually being resolved.

When transactions are denied, agents face a limited set of options to resolve the issue. In many cases, agents simply request that a customer returns at another time, creating an additional burden for themselves and the client. Our results showed that this was the proposed solution for almost half of denied transactions (47%). The second most common solution, suggesting the customer visit another provider (35%), shifts the burden (but also the opportunity to earn a commission) away from the agent, but still adds extra time and effort for the customer, especially if they live in a remote area with a single provider. Perhaps the simplest solution, 22% of the time an agent will ask the customer to attempt to complete the transaction again. If that does not work, customers can try smaller (12% of cases) or larger (5%) transactions. Eleven percent of customers reported that the agent did not offer any alternative method for completing the transaction.

More fee transparency would benefit users

Financial models for agents vary across and even within countries, and business models assess revenue from transaction fees as a component of agents' financial sustainability. In some countries, fees are capped by regulators, while FSPs and network operators set them freely in others. As CGAP notes, "market-based agent fees are important for CICO sustainability," providing revenue for both agents and DFS providers.[36]

Although the countries we surveyed report relatively low fee structures for CICO network transactions, some respondents were worried

about hidden fees. While some regulators have focused on ensuring low transaction fees, they should also monitor how fee structures affect agents and FSPs in practice. Setting fees too low could create negative incentives to implement or increase hidden fees. Increased transparency and monitoring should also ensure that agents do not create their own fee structures.

In this study, 15% of cash point users reported concerns about hidden fees, ranging from 33% in Côte d'Ivoire to 8% in Pakistan. One in three customers expressed concerns about hidden fees in Côte d'Ivoire although the country's regulated fee structure means that, on average, CICO and person-to-person activities are free.[37] By contrast, Pakistan's average CICO transaction costs are higher, but fewer users were concerned about hidden fees. The data could point to fees being set too low in Côte d'Ivoire, which is incentivising agents to tack on other charges in order to maintain their financial viability.

Evidence supports interoperability among DFS networks as one of the key features contributing to the financial viability of rural agents, along with non-exclusivity and non-dedication.[38] These features contribute to the ability of agents to expand the suite of services they provide, expanding their universe of potential customers and allowing them to sell multiple services to a single customer. Seventy percent of our respondents preferred cash points where they can conduct transactions across providers and networks. Forty percent of these cash points charge additional fees for this interoperability, although these are mostly for FSPs. Despite the high level of interoperability, regulated and unregulated fees may make it cost-prohibitive for users. Even in cases of regulator-mandated interoperability, CGAP found that, in practice, some providers may change fees and pricing, making it too expensive for users.[39]

Promoting fee transparency can also be achieved by helping agents become financially viable, reducing their incentive to charge extra or hidden fees to cover expenses. CGAP has pointed to agent viability as a key outcome for promoting "good" agent networks (see Box1).[40] Research from the Boston Consulting Group in 2019 highlighted how governments have contributed to the viability of agent networks in several of the countries covered in our study.[41] For example, Nigeria's central bank extended preferred loans to mobile money operators and super agents to fund their expansion into rural areas, expanding access to CICO agents for remote residents. In Colombia and India, authorities have used different mechanisms to guarantee minimum incomes for providers and agents that operate in rural and remote areas targeted for financial services coverage. Pakistan's government partnered with a mobile network operator to digitise G2P income support payments, generating demand for DFS and agent networks in urban and rural areas. FSPs and agents receive income from transaction fees for processing and delivering these payments.

Agents can leverage untapped opportunities to better support cash users

As CICO networks expand their reach to cover rural and underserved urban populations, agents can play a critical role in training and onboarding new customers. Agents are the human face of DFS in their communities and are well positioned to respond to emerging customer needs. First-time and infrequent users of DFS may need support from agents to conduct transactions and manage their accounts. In our survey, more than a third of customers (35%) used a cash point once a month or less often, increasing to 43% for rural users.

Our data show that a significant number of users require support from an agent to complete some transactions. However, many cash point users reported that agents did not offer to help them understand services or secure their accounts. Sixty percent of users reported needing some help to conduct transactions. This proportion stood at more than half in all five countries, ranging from 68% in Nigeria to a low of 53% in India. Among our respondents, the 18-30 age group was the most likely to need support carrying out transactions; 62% reported needing support with some types of transactions, compared with 60% among 31-45 year olds, and 57% among both the 46-60 and 60+ age groups. Providing support to the younger users who report needing it more is an opportunity for agents to increase these users' comfort with financial products at an early stage, which could create more trust in the financial system, ease their transition to DFS, and promote increased usage of DFS throughout their lifetime.

Beyond just helping to carry out transactions, agents could support cash point users in more robust ways as well, but our data show that few do so. On average, 2-7% of users reported receiving agent support with reading documents, using products and services, understanding fees, validating information, or making accounts secure. Agents are missing an opportunity to add value to the user experience and enhance consumer protection, increasing users' trust in DFS, and contributing to a virtuous cycle of increased usage and transactions. Effective onboarding and support from agents to customers early in their experience could also enhance their abilities and confidence, driving efficiency later in the customer lifecycle. In addition, service aggregation is an important component of agent viability, so improving customer service creates opportunities to attract clients for CICO transactions as well as other services.

Conclusion

As economies transition to digital-predominant or digital-only payment systems, policymakers need tools that will enable them to examine and understand how previously financially excluded populations are utilising them. CICO networks are especially important for these populations because they serve as a bridge between the cash economy and the growing landscape of DFS. They are frequently the first step toward digitalisation that financially excluded people take.
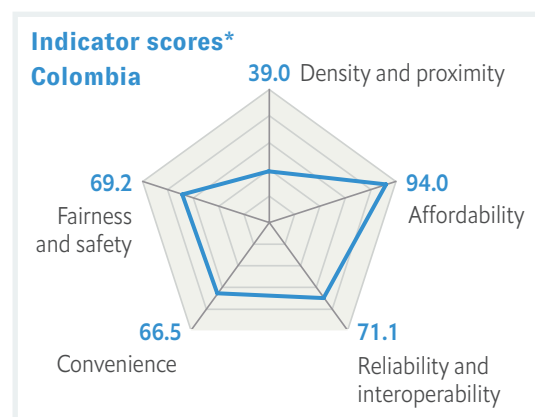
Economist Impact's Cash Point Diagnostic Tool provides policymakers and experts with a structure and a method to study CICO networks within a country and compare them across countries. The tool's three domains (reach, access and quality) and seven indicators, combined with representative surveys of CICO network users, create a robust methodology focused specifically on cash point networks, providing more detail than existing datasets.

Our pilot study demonstrates the level of detail produced by the tool, enabling comparisons across the five countries included (Colombia, Côte d'Ivoire, India, Nigeria and Pakistan) and highlighting the similarities and differences in CICO network development and usage among them. We identified six broad trends that point to important actions for policymakers to consider: continuing to expand reach while considering other aspects of the user experience; increasing the number of female agents; building trust by reducing fraud and mistreatment; solving connectivity challenges; more fee transparency; and taking advantage of untapped opportunities to better support cash point users.

Frequently, financial access and inclusion datasets have been helpful in identifying challenges but have lacked the detail to point to specific interventions that policymakers can implement to correct them. The combination of indicators from these datasets with survey data in Economist Impact's Cash Point Diagnostic Tool represents significant progress for policymakers looking to diagnose specific issues in CICO networks and propose solutions. While our tool does not provide policy prescriptions, the detailed information it provides regarding how users experience cash points facilitates the ideation of possible solutions, as well as comparisons to other countries that may face similar challenges or have attempted similar solutions. With the Cash Point Diagnostic Tool, policymakers can engage in an effective process of trial, error and adjustment to improve how people use and experience CICO networks.

Colombia snapshot

Colombia performs well across all dimensions, offering affordable and reliable cash services. Compared with other surveyed countries, it has fewer cash points. Most cash users have a bank account (48%) and/or a mobile money account (30%). Despite Colombia's relative progress expanding the reach of agent networks, enhanced public investments are needed to further expand service offerings in rural areas.

Indicator scores*
Colombia

- **39.0** Density and proximity
- **94.0** Affordability
- **71.1** Reliability and interoperability
- **66.5** Convenience
- **69.2** Fairness and safety

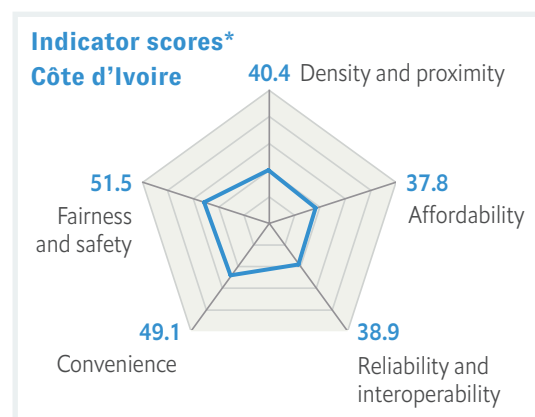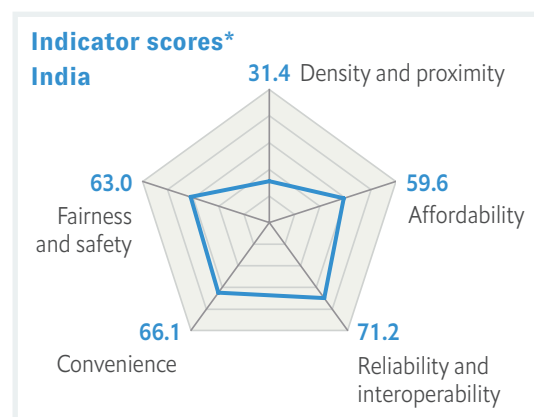| Indicators	Country score*	Average score*†	Country summary
🟠 1) Density and proximity	**39.0**	41.1	• There are 232 registered mobile money and commercial bank agents and 40 ATMs per 100,000 people. • 91.7% of cash users can access a cash point in 30 minutes or less.
🟢 2) Affordability	**94.0**	59.4	• On average, cash-in, cash-out and person-to-person transfers are free. • There were relatively low percentages of reported concerns (65%) over costs compared with other surveyed countries. • The top two cost concerns are travel and transport expenses (12%) and hidden fees (10%).
🟢 3) Reliability and interoperability	**71.1**	57.5	• 49% of users reported that they had a transaction denied over the past 12 months, lower than the average across surveyed countries. • 83% of denied transactions are resolved, typically by visiting another time. • 78% of cash points are interoperable, but 42% charge an additional fee for these services.
🟢 4) Convenience	**66.6**	56.4	• A high amount (69%) of cash users are able to use their account at a bank or financial institution without help. • 8% of agents offer support making accounts secure, the highest among surveyed countries.
🟢 5) Fairness and safety	**69.2**	54.2	• 65% of cash users strongly or somewhat trust their agent. • The majority of cash users (72%) report that there are female agents at their preferred cash point. • Relatively few (10%) users reported incidents of mistreatment in the past year and 16% raised a complaint. • 7% of cash users reported that they had experienced fraud. Of those, 37% report that it remains unresolved. • 36% of cash users are concerned over financial fraud, the lowest of the five countries surveyed.

🟠 = score 20 - 39.9   🟡 = score 40 - 59.9
🟢 = score 60 - 79.9   🟢 = score 80 - 100

*Score on a scale of 0-100 (higher scores are better)
†Average score of the five surveyed countries

Source: Economist Impact

Côte d'Ivoire snapshot

Users in Côte d'Ivoire overwhelmingly favour mobile money accounts and rely on agents for cash services. Ninety-eight percent of cash users have a mobile money account and 54% report using an agent most often. The country faces challenges ensuring transactions are free of functional issues, mistreatment and fraud. Côte d'Ivoire has a high volume of denied transactions, an exceptionally high frequency of mistreatment, and relatively high levels of fraud. Regulators in Côte d'Ivoire should prioritise these issues.

Indicator scores*
Côte d'Ivoire

- 40.4 Density and proximity
- 37.8 Affordability
- 38.9 Reliability and interoperability
- 49.1 Convenience
- 51.5 Fairness and safety

Indicators	Country score*	Average score*†	Country summary
1) Density and proximity	40.4	41.1	• 2,140 registered mobile money and commercial bank agents per 100,000 people. • 94.4% of cash users in the country can access a cash point in 30 minutes or less.
2) Affordability	37.8	59.4	• On average, cash-in, cash-out and person-to-person transfers are free. • 41% of users are concerned over stated set transaction fees and 33% are concerned about hidden fees.
3) Reliability and interoperability	38.9	57.5	• 78% of users reported they had a transaction denied over the past 12 months. • Most transactions (54%) were denied due to connectivity issues. • 89% of denied transactions are resolved, typically by visiting another agent. • 65% of cash points are interoperable, but 41% charge an additional fee for these services.
4) Convenience	49.1	56.4	• 66% of cash users require agent support to conduct a transaction, above the average for the surveyed countries. • Cash points are more diversified, with 74% offering non-financial services. • 91% of cash users report that cash points are open when needed.
5) Fairness and safety	51.5	54.2	• Trust in agents is relatively low: 41% of cash users do not trust their agents. • There's a high number of female agents: 77% of cash users report access to female agents. • 47% of cash users report experiencing mistreatment. Only 2% raised a complaint over this mistreatment. • 41% of respondents had an incident with fraud. • 43% of users reported concerns about financial fraud.

● = score 20 - 39.9 ● = score 40 - 59.9
● = score 60 - 79.9 ● = score 80 - 100

Source: Economist Impact

*Score on a scale of 0-100 (higher scores are better)
†Average score of the five surveyed countries

India snapshot

Cash points are typically harder for Indian cash users to reach, although efforts have been made to increase access, particularly among rural populations. Further distance to a cash point may contribute to less frequent use of cash points and more concern about travel costs and the need to take time off work to travel. Indian cash users have a high level of trust in their agents, and the country is a model of agent best practices, including efforts to encourage diversity. Most users in India are unable to conduct transactions for multiple providers at one cash point, and interoperable services are likely to come at a cost. This is an area of improvement for regulators to note.

Indicator scores*
India

31.4 Density and proximity
59.6 Affordability
71.2 Reliability and interoperability
66.1 Convenience
63.0 Fairness and safety

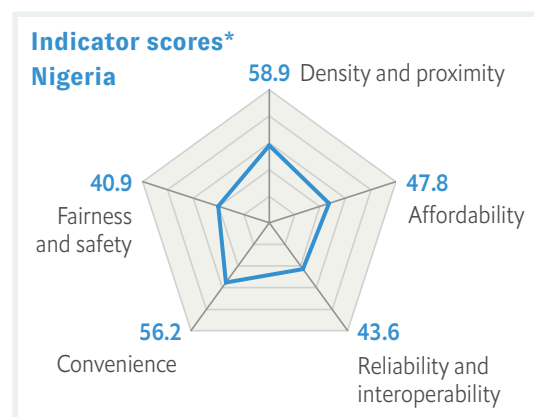|	Indicators	Country score*	Average score*†	Country summary
🟠	**1) Density and proximity**	**31.4**	41.1	• Most cash users have a bank account (86%) or a mobile money account (48%), and only 20% use agents. • The country has a high volume of bank branches, with 37.42 bank branches per 100,000 people. • 79% of respondents can access their nearest cash point in 30 minutes or less; India is the least accessible among the surveyed countries in terms of proximity.
🟡	**2) Affordability**	**59.6**	59.4	• The average cost to cash-in is US$0.57, cash-out is typically free and person-to-person transfers are US$0.04. • Stated fees only concern 11% of cash point users. Other concerns include the need to take time off of work (23%) and travel and transport expenses (19%).
🟢	**3) Reliability and interoperability**	**71.2**	57.5	• Only 42% of cash points are interoperable. • 51% of users reported that they had a transaction denied over the past 12 months, lower than the average. • 90% of denied transactions are resolved.
🟢	**4) Convenience**	**66.1**	56.4	• 49% of cash users reported that a denied transaction was significantly inconvenient for them. • 53% of cash users need agent support. • Cash points are not highly diversified. Only 24% offer non-financial services.
🟢	**5) Fairness and safety**	**63.0**	54.2	• Trust in agents is high: 75% of respondents reported that they trust their agent somewhat or strongly. • 59% reported that there are always or sometimes female agents, relatively low compared with the other surveyed countries. • 18% of cash users reported incidents of mistreatment. • A high amount (38%) of cash users reported experiencing fraud. • 49% of cash users are concerned about financial fraud, and 31% of fraud remains unresolved.

Source: Economist Impact

🟠 = score 20 - 39.9   🟡 = score 40 - 59.9
🟢 = score 60 - 79.9   🟢 = score 80 - 100

*Score on a scale of 0-100 (higher scores are better)
†Average score of the five surveyed countries

Nigeria snapshot

Nigerians have a higher financial exclusion rate compared with regional peers, and digital financial services and mobile money are still relatively new in the region. Only 23% of cash users have a mobile money account. Studies note that customers have a hard time determining what fees will be charged to them. Users are concerned about both stated and hidden fees. Fraud is a notable issue in Nigeria, and 32% of users report issues with fraud over the past 12 months. In addition, 46% report that fraud is unresolved, and there are significantly high levels of concern about fraud and low trust. This should be a priority for regulators to focus on.

Indicator scores*
Nigeria

58.9 Density and proximity
47.8 Affordability
43.6 Reliability and interoperability
56.2 Convenience
40.9 Fairness and safety

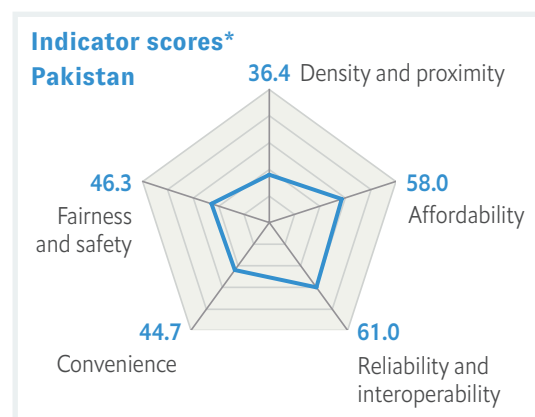|	Indicators	Country score*	Average score*†	Country summary
●	**1) Density and proximity**	**58.9**	41.1	• Nigeria has a relatively low density of bank branches, with 6.01 per 100,000 people, the lowest of all countries surveyed. There are 16.15 ATMs per 100,000 people, compared with 7.34 per 100,000 in neighbouring Côte d'Ivoire. • 95.2% of respondents can access their nearest cash point in 30 minutes or less, and 78% in 5-10 minutes.
●	**2) Affordability**	**47.8**	59.4	• Cash-in and cash-out activities are, on average, free. The average cost of a person-to-person transfer is US$0.20. • 20% of users are concerned about stated set fees and 15% are concerned about hidden fees.
●	**3) Reliability and interoperability**	**43.6**	57.5	• 79% of cash points are interoperable, and 61% of users reported additional costs for these services. • 68% of users reported that they had a transaction denied over the past 12 months. • 90% of denied transactions are resolved.
●	**4) Convenience**	**56.2**	56.4	• 68% of cash users need agent support to conduct a transaction, the highest among the surveyed countries. • Cash points are highly diversified: 75% offer other lines of businesses beyond financial services.
●	**5) Fairness and safety**	**40.9**	54.2	• Trust in agents is low. Only 51% of cash users trust their agent. • 74% of users report that there are female agents present at their preferred cash point. • 18% of cash users reported incidents of mistreatment, and a high amount (43%) raised a complaint over mistreatment. • 32% of cash users reported experiencing fraud. • 74% of cash users are concerned about financial fraud, and a high amount (46%) of fraud remains unresolved.

Source: Economist Impact

● = score 20 - 39.9   ● = score 40 - 59.9
● = score 60 - 79.9   ● = score 80 - 100

*Score on a scale of 0-100 (higher scores are better)
†Average score of the five surveyed countries

Pakistan snapshot

In Pakistan, equity is a significant challenge, and many cash points are run by male agents. Despite a strong preference for being assisted by a person of the same gender, only 21% of cash users report access to female agents. Although Pakistan has no interoperability mandate, the country has high levels of interoperability and low costs to conduct interoperable transactions. A significant amount of cash users are concerned about financial fraud. Even though it is the country with the lowest amount of fraudulent activity, most fraud incidents remain unresolved. This lack of resolution deteriorates trust.

Indicator scores*
Pakistan

- 36.4 Density and proximity
- 58.0 Affordability
- 61.0 Reliability and interoperability
- 44.7 Convenience
- 46.3 Fairness and safety

Indicators	Country score*	Average score*†	Country summary
1) Density and proximity	36.4	41.1	• Pakistan has 399.11 registered mobile money and commercial bank agents per 100,000 people. The country also has a relatively high number of branches, at 13.17 per 100,000 people. • 94.4% of respondents can access their nearest cash point in 30 minutes or less.
2) Affordability	58.0	59.4	• The average cost to cash-in is US$0.79, the average cost to cash out is US$0.37, and the average cost for a person-to-person transfer is US$0.15. These are higher rates than the other surveyed countries. • The top cost concern is over the need to take time off work to travel to the cash point (18%), and only 9% and 5% are concerned over stated set and percentage based fees, respectively.
3) Reliability and interoperability	61.0	57.5	• 87% of cash points are interoperable, and only 29% of cash users reported that there were additional costs. • 58% of users reported that they had one or more transactions denied. • 93% of transactions were completed, the highest resolution rate of the surveyed countries.
4) Convenience	44.7	56.4	• Agents provide a sense of security: 17% offer support making cash users' accounts secure. • Only 48% of cash points offer non-financial service offerings..
5) Fairness and safety	46.3	54.2	• 54% of cash users say they trust their agent. • 53% of respondents have a preference for being assisted by a person of the same gender, but only 21% of cash users report that there are female agents present at their preferred cash point. • 7% of cash users reported incidents of mistreatment, the lowest among surveyed countries. A high amount (44%) of users raised a complaint over mistreatment. • While 9% of cash users reported experiencing fraud, 55% are concerned about financial fraud. A high amount (56%) of fraud remains unresolved.

● = score 20 - 39.9   ● = score 40 - 59.9
● = score 60 - 79.9   ● = score 80 - 100

Source: Economist Impact

*Score on a scale of 0-100 (higher scores are better)
†Average score of the five surveyed countries

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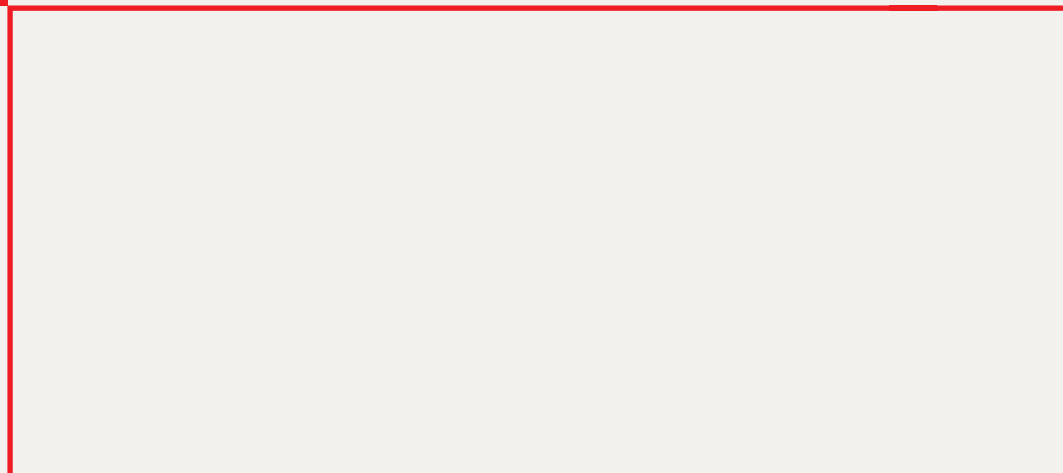
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