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FINANCIAL ACCESS AND DIGITAL PAYMENT ADOPTION IN ASIA: A COMPARATIVE ANALYSIS OF INDIA AND SELECTED ASIAN ECONOMIES USING GLOBAL FINDEX DATA (2011–2024)

Dr. Neha Monga[1], Dr. Sonia Kundra[2], Dr. Ashish Arora[3]

[1]Assistant Professor, Guru Nanak Dev University College, Jalandhar, Punjab. Email-mongakneha@gmail.com, Orcid ID- 0000-0001-8841-5099
[2]Assistant Professor, Guru Nanak Dev University College, Jalandhar, Punjab. Email-sonia.kundra87@gmail.com, Orcid ID- 0000-0002-2749-929X
[3]Assistant Professor, Guru Nanak Dev University College, Jalandhar, Punjab. Email-ashisharoray2k@gmail.com, Orcid ID-0000-0001-5816-2713

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Abstract
Digital financial inclusion is often defined by account ownership, but it doesn't necessarily mean that account holders use digital payments. This paper utilizes country-level data from the World Bank Global Findex Database 2025 to explore financial access, adoption of payments, changes over time, and gaps across various demographic groups for India and ten country sample drawn from Asia. The design is quantitative, descriptive and comparative and includes surveyed rounds from 2011 to 2024. Country rankings, percentage-point changes, subgroup comparisons, Pearson and Spearman correlations, exact country-level sign tests and sensitivity analysis were used. All comparisons are on the basis of observed survey dates, and are made at the selected country level not on the basis of official regional estimates. 89.02% of Indian adults indicated that they held an account in 2024, while 48.46% made or received a digital payment. Overall, the adoption of digital payments in India was 3.97 percentage points below the unweighted selected-country mean and ranked fifth out of eleven countries. From 2011 to 2024, the total points gained for Indian account ownership were 53.79 and for digital payment adoption, 26.22 were gained between 2014 and 2024. There was cross-country association between account ownership and digital payment adoption (Pearson r = 0.8140). The digital payment gap for India was 11.48 percentage points for men and women, and 20.07 percentage points for the richer and poorer individuals. Exploratory country-level tests revealed consistent positive directions of long-run adoption change and income gaps, but not for gender gaps. The results differentiate between access to finance and actual digital engagement and enable tracking of usage and equity as well as access to accounts.

Keywords: *financial access; digital payment adoption; financial inclusion; Global Findex; India; demographic disparities*

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1. Introduction

Financial inclusion is more than having a bank account. The ability to store money and the will to transact digitally can be separated from accounts that can be used for payments, savings, transfers and resilience. The separation has grown all the more significant in the face of the growing number of governments and financial services providers (FSPs) rolling out account-opening initiatives, instant-payment systems, and mobile financial services. There can be a high rate of account ownership with low levels of electronic payments activity, which is not sufficient to capture adults' engagement with the digital economy. The Global Findex Database 2025 provides a consistent platform on which to analyze these aspects for economies and across survey waves (Klapper et al., 2025).

This is a diverse context to make an extensive evaluation in Asia, since there are many significant variations between South, Southeast and East Asian economies, in terms of financial markets, household incomes, digital connectivity, merchant acceptance and institutional arrangements. In India, in particular, digital public infrastructure and innovations in payments have been accompanying the expansion of account ownership. However, a binary comparison of how many people register accounts or how many payment platforms exist, does not represent a true picture of the proportion of adults that make or receive digital payments. The empirical question is thus not only whether there has been an increase in access, but whether there are similarities in the trends of access and real payment usage in the selected economies.

The present study provides a focused comparative gap analysis by analyzing 11 Asian economies based on the newly released Global Findex 2025 country-level data. It makes a difference in three ways. First, India is not compared to an assumed Asia-wide average, but to a particular sample countries for comparison. Secondly, changes in the surveys are reported round of observation and not as an annual timeseries. Third, the study also features access–usage comparisons and four limited exploratory country level hypothesis assessments. It is descriptive and associational and does not seek to measure or estimate the causal impact of digital policies and infrastructure.

Five propositions guide the analysis: H1: There are country differences in digital payment adoption, H2: Digital payment adoption has grown between the first common digital-payment round and 2024, H3: A higher share of the population with bank accounts is associated with a higher share of digital payment adoption, H4: The direction of the gender gap is consistent across countries, and H5: The direction of the income gap is consistently in favor of the wealthier population group. Directional-consistency items are used to measure variables H4 and H5 at the country-level.

2. Literature Review

2.1. Financial inclusion: distinguishing ownership from use

Previous studies have shown that there are a number of individual and institutional determinants that affect the ownership of an account and the use of financial services. Allen et al. (2016) linked formal-account inclusion to costs of accounts, proximity, legal circumstances and attributes of potentially excluded individuals. Based on African Findex observations, Zins and Weill (2016) found financial inclusion to be correlated with income, education, age and gender. It is such results that imply that overall access rates may obscure variations between population groups. They also warn of the danger of using a country average as an average for all households.

Empirical evidence supports the distinction between formal entry and sustained participation. Dupas et al. (2018) conducted a field experiment in Uganda, Malawi, and Chile and found that access to basic accounts did not necessarily lead to greater and/or more frequent usage or measurable average downstream improvements. The index used by Khera et al. (2022) also infers access and usage which shows that access and usage are connected but not the same. For the purposes of the present analysis, the ownership of accounts and the adoption of payments is thus reported separately. It is not a measure of inactivity among account holders, but rather represents the access–usage percentage-point difference between two population percentages.

2.2. Digital payments, transaction costs, and potential mechanisms

Literature related to digital finance also defines the difference between technological opportunity and participation. Ozili (2018) highlighted some of the advantages of digital finance for inclusion and also pointed out some of the remaining challenges on infrastructure providers, and users. Suri and Jack (2016) calculated long-run welfare impacts of mobile money in Kenya, which highlights the need to consider the usage and context of a technology, not its technology itself. Such studies are not proof of any specific payment system being responsible for changes in the Asian countries studied in this report. But rather they encourage the application of distinct access and usage metrics.

Information on payment mechanisms is informative, but context specific. Bachas et al. (2018) found a connection between provision of debit-card and reduced travel distance and increased account activity in

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Mexico, and Jack and Suri (2014) reported on remittance and risk-sharing channels of Kenyan mobile money. Aron (2018) discovered that the evidence on risk sharing was by and large stronger than evidence on a number of other welfare outcomes, and Riley (2018) explored shock-smoothing effects among mobile-money users. Muralidharan et al. (2016) assessed a biometric public-payment intervention in India and found improvement in the delivery of payments. These designs show feasible pathways, but none of them does pinpoint the forces which have generated the overall shifts in adoption rates as seen in the current Asian sample.

2.3. Income, education, and gender inequalities

New evidence supports this separation. Demirgüç-Kunt et al. (2022) reported the growth of digital payments and differential access to financial services for different population subgroups. Klapper et al. (2025) then pointed to women, poorer adults, and gaps in their account activity and digital connections. Based on individual data from 13 emerging economies, Verma and Chatterjee (2025) discovered that there are varied relationships between traditional and digital financial indicators and the financial resilience reported by them. They differ from the present country level comparisons in their outcome, microdata and identification approach. However, Kamble and Mehta (2026) specifically targeted India and discovered that gender-related inequality can still be present in India despite the decrease in the gap of ownership. These contributions can be used together to look at access, actual digital payment behavior, and group disparities as alternative empirical outcomes.

Household data in India provides a finer-grained picture of gender disparities than do country averages. Ghosh and Vinod (2017) pointed out that there are inequalities in access and use and explored the importance of education, earnings and social factors. Grohmann et al. (2018) analyzed financial literacy as a correlate of inclusion by country and Klapper and Lusardi (2020) reported on the extent of financial-knowledge gaps among women, less education, and poorer adults. These are encouraging findings for performing subgroup comparisons; however, the dependent variables and levels of analysis vary from those used in the digital-payment measures used here. The current study has descriptive gaps, therefore, which do not allow to isolate the effect of income, schooling or gender-linked mechanisms.

2.4. Comparative evidence and the research gap

The closest measures are available from the Global Findex research. Reports on access and use of financial services have been collected at the level of economies by Demirgüç-Kunt et al. (2018) and since then, more attention has been given to digital payments and financial resilience (Demirgüç-Kunt et al., 2022). Based on individual observations from emerging economies, Verma and Chatterjee (2025) analyzed financial resilience without relying on national adoption rankings. The literature as a whole discusses entry into finance, technological channels, differences in demographic characteristics, and welfare, but these shouldn't be combined into an overall measure. Instead, this present study offers a clear comparison of access, digital payment usage, change over time, and also gaps in access and usage across subgroups in 11 selected Asian economies, leveraging the 2024 Global Findex data. It hypotheses about descriptive heterogeneity and ecological associations, not intervention effects.

3. Materials and Methods

3.1. Research design and data

An observational, quantitative, and comparative research design was used, utilizing secondary country level and demographic estimates from the World Bank Global Findex Database 2025. The source comes from nationally representative surveys of adults (World Bank, 2025), including the 2024 survey round, and previous Findex rounds. The analytical units comprised country–survey-round records for country estimates and country–survey-round–subgroup records for demographic comparisons. Respondent-level data were not analyzed. As a result, the country-level percentages were not considered as individual observations but rather as estimates provided by the Findex database.

The selection of the eleven economies was guided by geographical representation across major Asian regions, the availability of comparable Global Findex observations, and the objective of positioning India within a broader Asian context of digital financial adoption. The sample includes five South Asian economies (India, Bangladesh, Nepal, Pakistan, and Sri Lanka), five Southeast Asian economies (Indonesia, Malaysia, the Philippines, Thailand, and Viet Nam), and one East Asian economy (China). These economies also reflect variation in economic development, financial inclusion, and digital payment adoption, enabling comparisons across countries with differing levels of financial access and digital engagement. The regional grouping provides a structured basis for comparative analysis, while the inclusion of economies with diverse adoption profiles allows India’s performance to be examined in relation to both relatively advanced and emerging digital payment environments. The selection is purposive rather than probabilistic and is intended for comparative

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analytical purposes, not to represent the Asian region as a whole. The averages for the benchmarks were weighted equally for all reporting countries. Selected country mean includes India while the ten-peer benchmark is without India.

The database provides 2011, 2014, 2017, 2021 and 2024 survey rounds, while in the retained source, Viet Nam is not listed for 2021, but is listed for 2022. These dates were kept as observed. Each round is a unique cross-sectional survey, not annual measures of the same respondents over time. Digital payment can be carried out from 2014, while the ownership of the accounts can be carried out since 2011. Only 2021 is included in the evaluation of merchant payments.

3.2. Measures and operational definitions

The key results of the Findex database measures the percentage of adults (age 15 or above) who made or received a digital payment in the reference period. The main financial-access measure 'account.t.d' is a measure of whether someone has an account at a financial institution or a mobile money provider. Financial-institution account ownership, digital merchant payments, digital bill payments and mobile money accounts are also included in the analysis. There are 14 unique indicators and each measure maintains its own definition, years covered and missing values.

Table 1. Core variable definitions and coverage

Measure	Findex code	Operational meaning	First year
Account ownership	account.t.d	Financial institution or mobile money account	2011
Digital payment adoption	g20.any	Made or received a digital payment	2014
Mobile money account	mobileaccount.t.d	Reported mobile money account ownership	2014
Digital bill payment	fin26a	Used phone or internet to pay bills	2017
Digital merchant payment	merchant.pay	Made a digital merchant payment	2021

Demographic adoption gaps were calculated using the percentage of each matched demographic group in the same country and survey period. The contrasts were: men versus women, richest 60th versus the poorest 40th of the within-country distribution of households by income, and secondary and higher education versus primary and below. Gaps are in percentage points. These reflect differences in the proportions of subgroups in the reports, not individual regression coefficients.

3.3. Data preparation and quality assurance

This original workbook was then processed in a reproducible python workflow along with its indicator metadata and demographic classifications. The total of 55 country–survey-round records was observed in 11 countries. Four hundred and fifty-one cells were observed and 319 cells were missing from a total of 770 possible country–round–indicator cells, based on fourteen indicators. In the event of missing data, this was retained as missing instead of imputing or coding to 0. To enable demographic analysis, 440 focused subgroup records were expanded to 6,160 indicator-level subgroup records. The cleaning procedure included country codes, year labels, group definitions, checking for duplicate keys, checking for proportions outside the admissible range, and checking indicator naming consistency.

3.4. Statistical analysis

Summaries for cross-country include means, medians, observed ranges, sample standard deviations, ranks and percentage point differences. A formal between-country population test was not available for the aggregate workbook for 2024 and so the results for H1 were reported as descriptive dispersion. H2 was assessed by a one-sided exact sign test on the change in digital payment adoption for each country in the 11 matched countries for the period 2014-2024. This procedure does not tell whether there are positive changes for the selected countries, but whether the positive changes dominate.

H3 correlated the double-sided account ownership in 2024 to the adoption of digital payments in 2024 in 11 economies. As sensitivity checks, Spearman rank correlation, a 50,000-draw two-sided label-permutation analysis was used. Fisher-z interval was reported for nominal 95% for Pearson r. The gender and income adoption gaps for H4 and H5, respectively, were exact 2-sided sign tests at the country level. Exact Wilcoxon

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signed-rank tests were also performed on the historical change and demographic comparisons. The four exploratory primary p-values (H2 - H5) were corrected by Holm's step-down procedure. A threshold of 0.05 was chosen for this selected country test family with a descriptive intent only, and not as a confirmation of significance of the population based on the survey.

4. Results

4.1. Cross-country adoption in 2024

The share of digital payment use per economy was quite diverse in 2024. The between country standard deviation of the selected countries was 22.26 percentage points, the median was 47.26% and the unweighted selected country mean was 52.43%. The spread of the values was from 24.64% to 88.72% with a range of 64.08 percentage points, from Pakistan to China. China, Thailand (82.75%), Malaysia (77.47%), and Viet Nam (62.38%) occupied the first four positions. India recorded 48.46%, ranking fifth, followed by Sri Lanka (47.26%), Indonesia (42.69%), the Philippines (40.33%), Bangladesh (33.95%), Nepal (28.07%), and Pakistan (24.64%).

India's score was also 3.97 percentage points below the average score of the 11 countries and 4.37 percentage points below the score of the 10 countries with which it is compared. There was also a significant variation in the rate of account ownership, with Thailand at 91.82% and Pakistan at 27.30%. This yields the descriptive cross-country dispersion as relevant for H1.

Table 2. Financial account ownership and digital payment adoption, 2024

Country	Account (%)	Digital (%)	Merchant (%)	Access–use gap (pp)
China	89.38	88.72	79.60	0.66
Thailand	91.82	82.75	51.25	9.07
Malaysia	88.69	77.47	52.24	11.23
Viet Nam	70.55	62.38	51.13	8.17
India	89.02	48.46	18.30	40.57
Sri Lanka	81.69	47.26	14.78	34.43
Indonesia	56.33	42.69	13.60	13.63
Philippines	50.18	40.33	13.42	9.85
Bangladesh	43.28	33.95	2.76	9.34
Nepal	59.99	28.07	9.29	31.92
Pakistan	27.30	24.64	4.27	2.65

Note: Sorted by digital payment adoption. Gap = account ownership minus digital payment share, both as percentages of all adults aged 15+.

4.2. Changes across observed survey rounds

The overall account ownership has grown from 35.23% in 2011 to 89.02% in 2024, marking an increase of 53.79 percentage points in India. Digital payment adoption increased from 22.24% in 2014 to 48.46% in 2024, a rise of 26.22 points. The changes are for different start years as the outcomes have different historical availability. The merchant-payment share in India increased by 6.40 percentage points between 2021 and 2024 and the digital bill-payment measure by 12.47 points between 2017 and 2024.

The positive paired digital payment change occurred in all 11 countries in 2014-2024. The median change in country was +22.02 percent, the mean was +26.35 percent and ranged from +14.87 percent to +45.98 percent. Thailand and Viet Nam exhibited particularly large endpoint gains, of 45.98 and 43.00 points, respectively. But “increasing trajectories” in endpoints are not always a good thing: Thailand, Sri Lanka, the Philippines and

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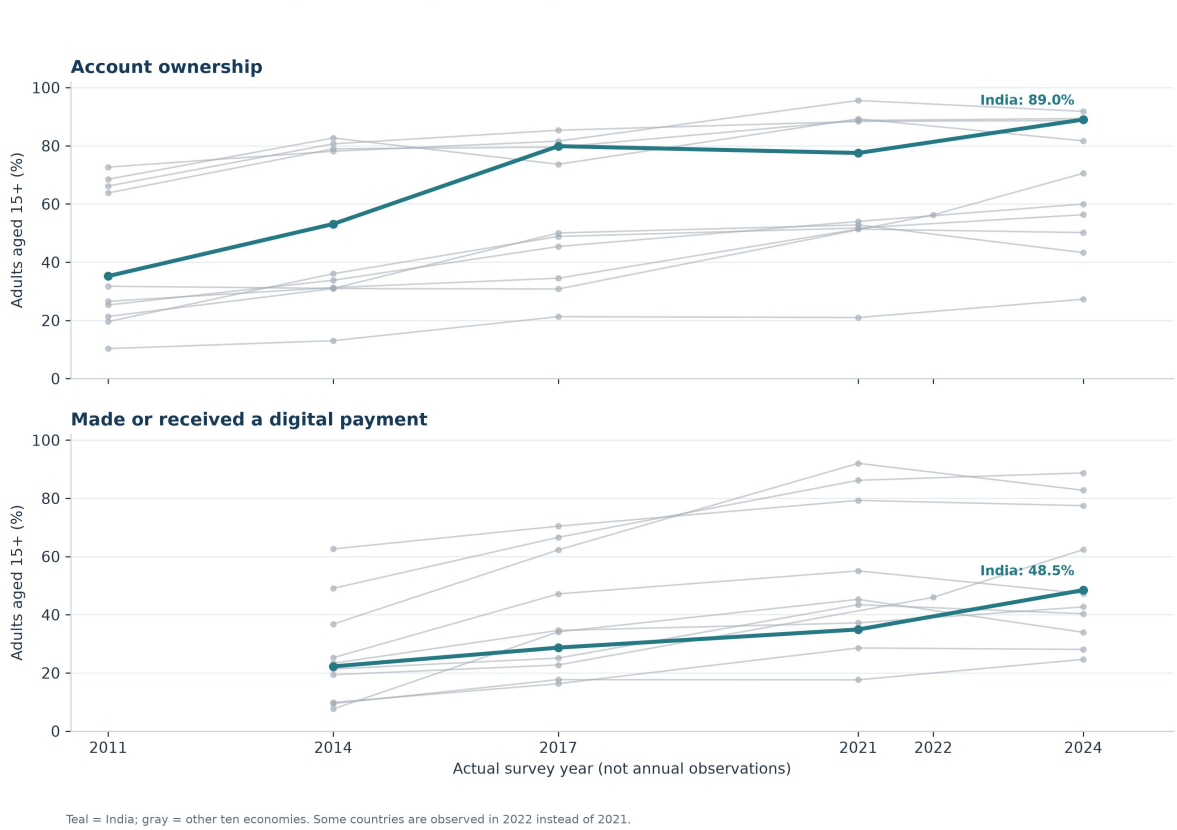
others saw their endpoint reported usage fall in 2024 compared to their previous retained round. The observation of Viet Nam was made in 2022, not in 2021.

Table 3. Matched historical changes in selected financial inclusion measures

Country	Accounts 2011–24 (pp)	Digital 2014–24 (pp)	Merchant 2021–24 (pp)
Bangladesh	+11.54	+26.34	-0.02
China	+25.57	+39.65	-1.94
India	+53.79	+26.22	+6.40
Indonesia	+36.75	+19.38	+0.64
Malaysia	+22.52	+14.87	+1.93
Nepal	+34.68	+18.21	+3.87
Pakistan	+16.99	+15.19	+3.19
Philippines	+23.63	+18.98	-5.06
Sri Lanka	+13.17	+22.02	-3.30
Thailand	+19.16	+45.98	-12.02
Viet Nam	+49.18	+43.00	NA

Note: Values are endpoint differences in percentage points, not annual growth rates.

Figure 1. Observed survey-round trajectories of account ownership and digital payment adoption



Source: Authors' calculations from Global Findex 2025. Teal-India; gray-the other selected economies.

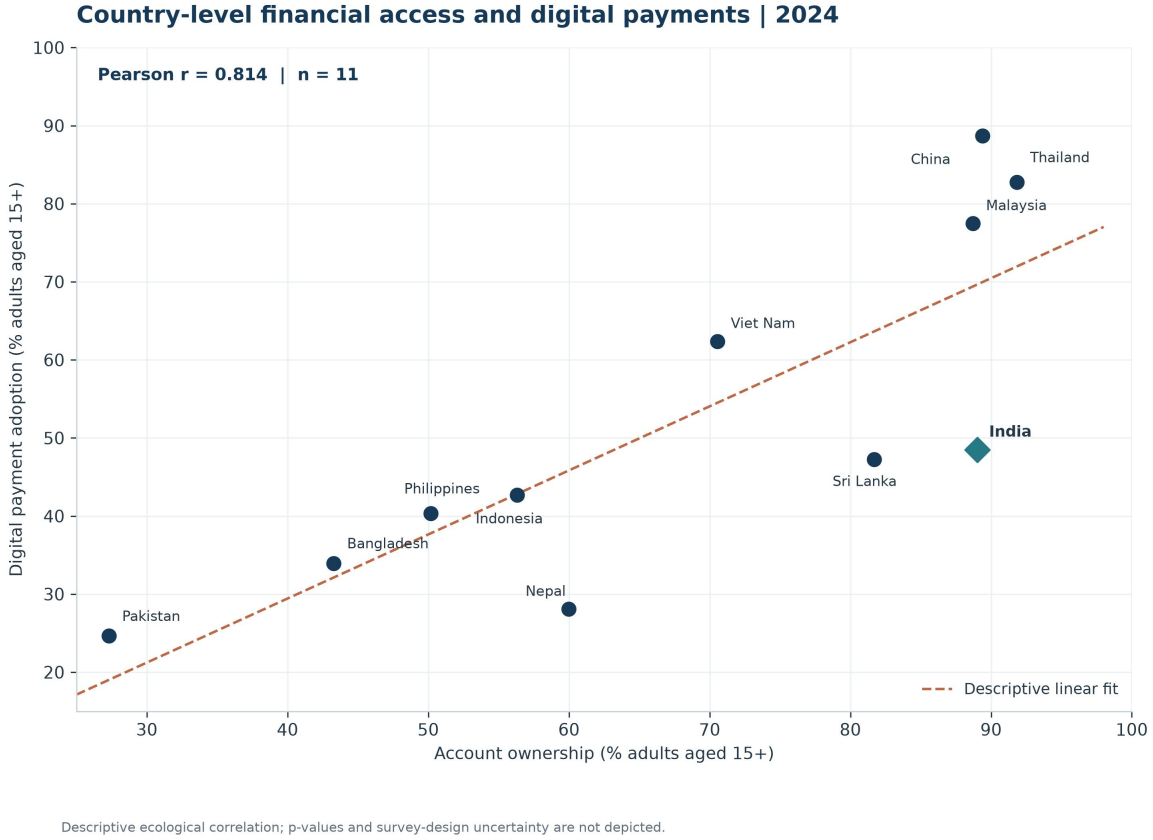
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4.3. Financial access versus digital usage

In India, there is a significant disconnect between access to finance and utilization of financial services. 89.02% of adults said they had an account in 2024, which was the highest recorded value since 2006, while 48.46% reported making or receiving a digital payment, resulting in an overall difference of 40.57 percentage points. The differences were, respectively, 34.43 points in Sri Lanka, 31.92 points in Nepal, 9.07 points in Thailand and 0.66 points in China. The differences cannot be used to identify the percentage of account holders who are inactive since the analysis does not estimate the individual conditional probabilities.

There was a positive correlation between account ownership and adoption of digital payments across the 11 countries in 2024 (Pearson's r = 0.8140, two-sided exploratory p = 0.002292; nominal 95% Fisher-z interval [0.4185, 0.9500]). The rank-based Spearman coefficient was 0.8909 (p = 0.000233). The p value for the 50,000-draw permutation analysis was 0.002740 and leave-one-country-out Pearson estimates were between 0.7787 and 0.8790. These checks suggest that the positive selected-country association was not driven by a single measurement and are not causal nor do they eliminate measurement or sample-selection uncertainty. Figure 2 shows the association and the location of India below the descriptively fitted line.

Figure 2. Country-level association between account ownership and digital payment adoption, 2024



Source: Authors' calculations using 11 selected countries; the dashed line is a descriptive least-squares fit, not a causal estimate.

4.4. Demographic patterns in digital payments

Based on matched demographic observations, there is considerable variation in the composition of adoption. The gender gap in digital payments in India was 11.48 percentage points, while the mean for the selected countries was 7.87 points. A positive gender contrast was revealed in 8 out of 11 countries and a negative gender contrast in three countries. Overall, the median gender gap was 6.31 points. This indicates a positive difference in a number of countries although the exact two-sided country sign test was not sufficiently consistent with a positive difference (p = 0.226563). The outcome should not be taken to mean that there are no gender gaps in India or in any country in particular.

In all 11 countries, the richest-60%-poorest-40% contrast was positive. The India income gap was 20.07 points, higher than the unweighted mean of the sample countries of 17.53 points, and the median country gap of 15.06 points. This education contrast was also positive across the sample, as the mean for India was 24.06 points; and the selected-country average was 24.22 points. Age patterns were less regular with India's old-younger

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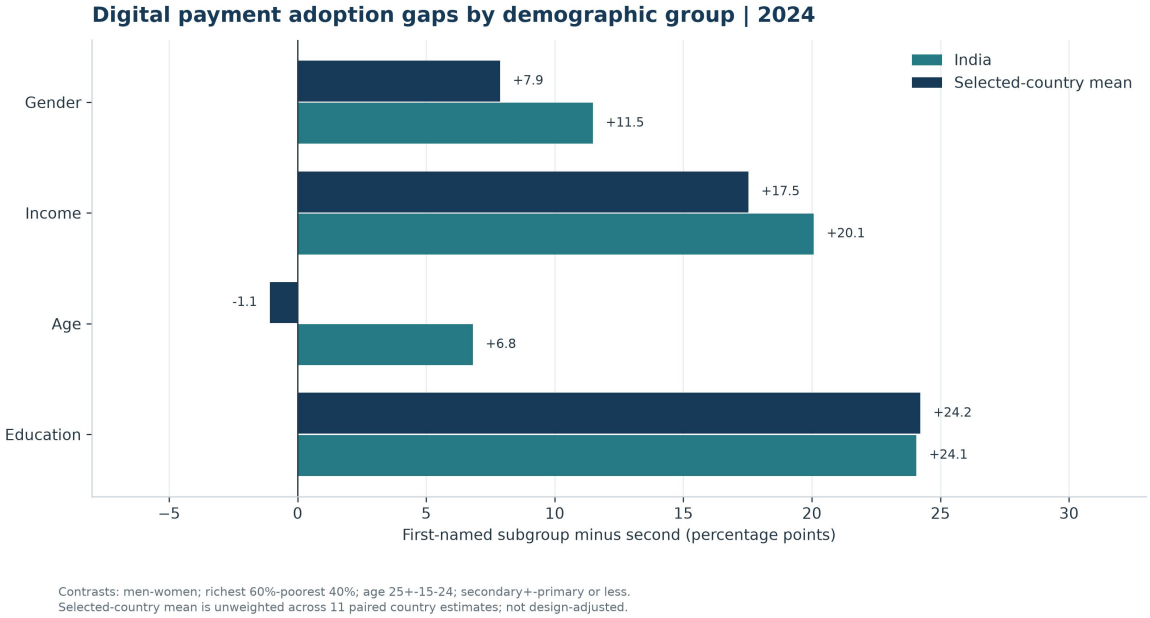
difference of +6.81 points compared to the selected-country mean of −1.08 points, and only six of the 11 countries having positive age differences. For this reason, country comparisons of aggregates mask differential demographic characteristics.

Table 4. Demographic contrasts in digital payment adoption, 2024

Contrast	India (pp)	Sample mean (pp)	Positive countries
Men minus women	+11.48	+7.87	8/11
Richest 60% minus poorest 40%	+20.07	+17.53	11/11
Ages 25+ minus ages 15–24	+6.81	-1.08	6/11
Secondary+ minus primary or less	+24.06	+24.22	11/11

Note. Each gap is the first-named subgroup percentage minus the second-named subgroup percentage, among all adults in that subgroup. Sample means are unweighted across eleven matched countries.

Figure 3. Digital payment adoption gaps by demographic group, 2024



Source: Authors' calculations from country-level Global Findex subgroup estimates; these are descriptive percentage-point contrasts.

4.5. Exploratory hypothesis assessments

The one-sided exact test for H2 was p = 0.000488, showing positive changes for digital payments in the 11 countries in 2014-2024. The positive Pearson association listed above was returned by H3. The two-sided income sign test for H5 yielded p = 0.000977; the gender sign test for H4 was p = 0.226563. Applying Holm's adjustment across H2– H5 gave adjusted p-values of 0.001953, 0.004585, 0.226563, and 0.002930, respectively. The main effects and evidence categorizations are given for Table 5. H1 is considered as a descriptive dispersion statement that does not have a p-value.

Directional sensitivity checks were in agreement with the main analyses. Exact Wilcoxon tests yielded p = 0.000488 for H2 and p = 0.000977 for H5, while the Wilcoxon result for H4 was p = 0.053711. The four-test Holm correction did not include these sensitivity tests. All of the statistical labels throughout are for exploratory comparisons among chosen countries, and are not for formal population inferences from the national survey samples.

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Table 5. Hypothesis assessment using selected-country estimates

Hypothesis	Analysis	Effect	Raw p	Holm p	Interpretation
H1	2024 dispersion	Range 64.08 pp	—	—	Descriptive variation
H2	2014–24 change	Median +22.02 pp	0.000488	0.001953	Positive direction
H3	2024 association	Pearson r = 0.8140	0.002292	0.004585	Positive association
H4	2024 gender gaps	Median +6.31 pp	0.226563	0.226563	Inconsistent direction
H5	2024 income gaps	Median +15.06 pp	0.000977	0.002930	Positive direction

5. Discussion

5.1. Access expansion and transaction usage

The key takeaway: having significant financial access doesn't necessarily equate to a high rate of digital transactions. While India has a high account ownership rate, it also has a comparatively low rate of people who report receiving or making digital payments. This reflects the general difference in the concepts of inclusion, based on whether an account is available versus participation, based on actual financial behaviour (Allen et al., 2016; Klapper et al., 2025). But the 40.57-point gap is between two marginal indicators. It is not able to establish a certain percentage of "dormant" account holders, nor to differentiate between those consumers who prefer cash and those who are prevented by "merchant-acceptance" or other factors.

The positive ecological correlation suggests that, in this comparison group, the higher the proportion of people who own an account, the more they used digital payments. It does not imply that increased use would result from opening additional accounts. Unmeasured factors such as income, infrastructure, and digital literacy, institutional trust, service availability, and merchant networks could shape both variables. Ozili (2018) also highlighted that the potential benefits to be derived from digital financial services are contingent on the implementation conditions and risks. The comparison with countries that have more similar access and usage rates is meant as a starting point to investigate mechanisms, but not as evidence that a mechanism has already been established.

5.2. India's comparative position and temporal change

The historical comparison shows significant improvement but the gap in usage remains. India has also seen an increase in account-ownership from 35.23% in 2011 to 89.02%, which is more than the 53.79% increase in its digital payment adoption rate since 2014. However, this can't be compared like-for-like because of the varying timeframes of observations. The 5th ranked position out of 11 selected economies does not imply a ranking of payment infrastructure performance nor a ranking for Asia as a whole. It is an open stance on any given population measure for adults. The account and payment values in 2024 also provide a reason for separating adoption, payment type and intensity of activity when making comparisons with other countries.

But the country trajectories are not necessarily monotonic even when all the endpoint changes in 2014–2024 are positive. This variation might be the result of differences in behavior, economy, or even questionnaire/sampling methods. The available series are not able to determine why there is a particular decrease from one round to the next. Payment technologies should also be interpreted with caution: the variable for mobile money account ownership is distinct from the set of digital/instant-payment variables. However, the score on the mobile money indicator does not imply that a country has a widely used payment system.

5.3. Demographic inequalities

The most noticeable demographic regularity in this analysis is the constant direction of the income gap for all selected economies. The education gap reveals an additional pattern of inequality in digital payment adoption. Both align with studies that indicate that financial inclusion is related to income and education (Zins & Weill, 2016; Ansar et al., 2025). However, the overall figures do not reveal which factor (income or education) was responsible for the differences reported. Their respective differences might reflect overlapping disadvantages and the country level data do not allow for employment, locational, age or other household characteristic adjustments.

The gender evidence is more complex. The positive 11.48-point difference in India is also substantive rather than being supported by the 11-country exact sign test at the selected exploratory threshold. This does not

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contradict, rather a difference in one country and a lack of directional consistency across countries answers different questions. Kamble and Mehta (2026) also show this India-specific access-to-usage analysis, demonstrating the importance of separating the analysis of account ownership from payment practices. Estimates at the individual level (from that study) and country-aggregate contrasts (here) are not directly comparable. The age comparison also indicates that the age structure of adoption is not necessarily a universal older-younger one, but varies between economies.

5.4. Business and policy implications

The study results suggest that financial service providers and regulators should focus not just on account creation but also on the results of appropriate account use, such as transactions and merchant acceptance, which would help them better understand the effectiveness of the barriers to digital payment adoption. Complete knowledge of access to accounts may be a necessary, but not sufficient, performance measure for some types of digital activity. Practical responses that can be evaluated include affordable payments, clear consumer charges, easy to use grievance processes, easy to use interfaces and support for income and education groups that are excluded (Bachas et al., 2018; Grohmann et al., 2018). This is not a list of interventions that have been proven to be effective with this study, but implications for future testing.

A comparative dashboard could have separate columns for account ownership, digitization of payments, merchant transactions and gaps between subgroups, and report survey year and denominator. Institutions would thus steer clear of the association between broad access and digital engagement and the use of an unweighted comparator mean as a population benchmark. Abridged questionnaires, different survey dates and unobserved questionnaires should also be reported in an interpretation of a cross-country performance. This has an important impact on China's digital payment series for 2024.

5.5. Limitations and future research

There are a number of limitations that limit generalization. Firstly, countries were purposefully selected and no regional probability weights were used. Second, data are aggregate, thus not allowing individual-level behavioral or causal inferences. Third, sampling errors, replicate weights, and survey design information were not provided in the country workbook that was extracted and thus nominal confidence intervals and p-values are not reflective of national survey uncertainty. Fourth, there is an incomplete reconciliation of historical wording, identification rules, and denominators between waves: China's abridged 2024 ascertainment is a known comparability concern. Fifth, survey rounds are light and occasionally asynchronised, such as the 2022 survey in Viet Nam. Lastly, age, education and income categories are general and could mask variability within each group.

Further studies should involve survey weights and survey documentation for the Global Findex respondent-level microdata to assess for sub-group uncertainty and to assess for multi-variates. Similar national panels might be able to consider merchant acceptance, digital connectivity, transaction frequency, trust and financial resilience in more specific identification approaches. While these analyses are underway, the evidence here should be viewed more as a description of the access–usage relationship in selected Asian economies that can be reproduced.

6. Conclusion

The analysis draws on Global Findex survey observations in 11 Asian economies, including India, and examines the extent to which they are financially connected and their adoption of digital payments. In the latest round India had 89.02% account ownership and 48.46% for digital payment adoption, which was the fifth highest out of 11 countries. Between 2011 and 2024, the number of accounts grew by 53.79 percentage points, and digital payment by 26.22 points between 2014 and 2024. Therefore, the formal access to accounts is not enough to eradicate the difference between account holders and digital payments.

The 2024 access-adoption association was positive in all selected countries (Pearson $r = 0.8140$) and changes in digital payments were positive in all countries between the 2014 and 2024 end points. There was more consistency in gender-gap directions in adoption amongst the richer than the poorer adults in all countries. The results here are provided as exploratory comparative evidence, and not as survey adjusted population estimates or causal conclusions.

The main contribution is a clear comparison, which considers financial access, digital payment usage, time and demographic differences as separate dimensions. The actual and equitable engagement, therefore, should be assessed in business and policy evaluations, in addition to account access. Additional survey-design specific analysis is required to account for the differences in these indicators and what interventions are effective for sustained use.

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