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Ghana Interoperability Demand-side Review: **Key Takeaways**

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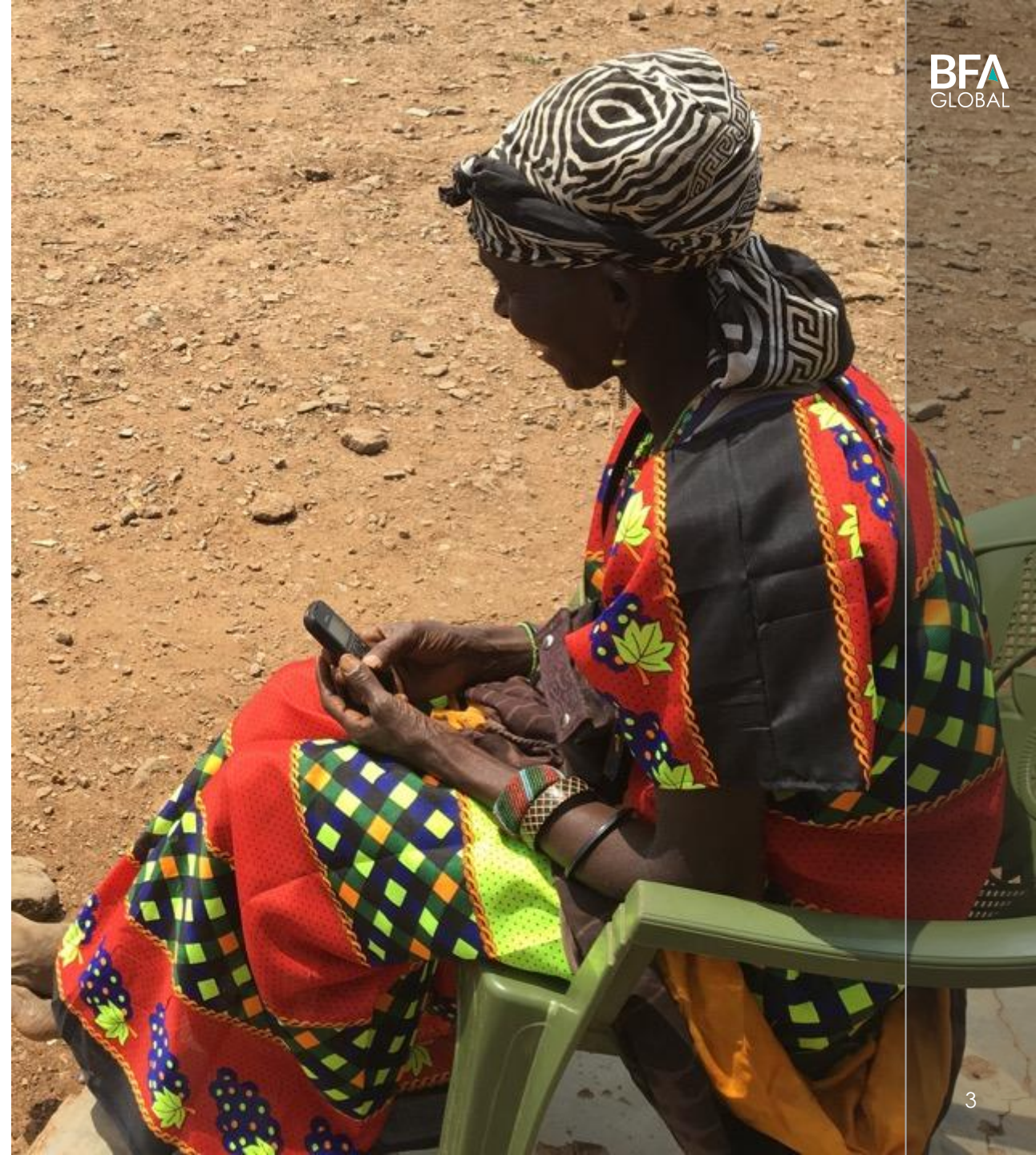
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1 Background

Survey Background

- Telephonic quantitative surveys with 452 digital payment users (163 bank account users and 289 mobile account users).
- Everyone in our sample had, in the last 6 months, sent money to receivers on different platforms i.e receivers with accounts at different banks/ mobile money networks to their own.
- Users who had sent both types of digital payments were classified by the one they use most often for payments, mobile money or bank accounts.
- The quantitative survey was meant to assess the uptake and usage of the financial inclusion triangle in Ghana and the resulting impact.
- The analysis went further to interrogate uptake and usage by women.



Caveats



This dataset is observational. User behavior can indicate the strength of correlations, but not the direction of causality or control for omitted variables.



There is no comparison group. Because almost all (97%) the surveyed mobile money and banks users reported they had used scheme interoperability to send money across platforms in the last six months.

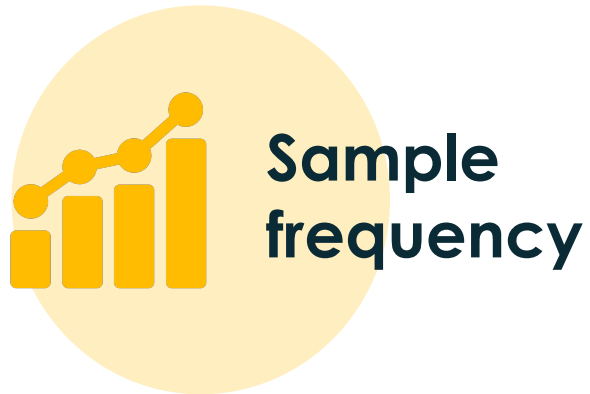


We report sample proportions. The statistics provided in this brief reflect the sample proportions and are not weighted based on the probability of selection. Quota sampling was used to ensure adequate sampling for gender and the rural sector.



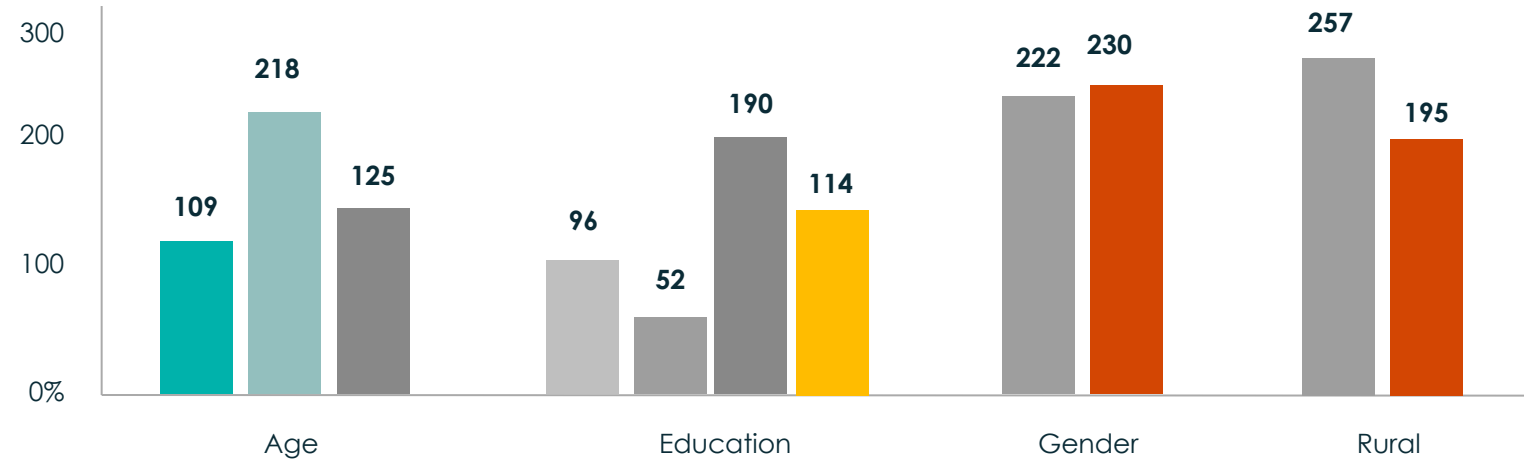
The sample is not stratified for rare events and behaviors. Some behaviors, such as unusual payment methods, and some events, such as failed transactions, are too rare to be studied adequately with the sampling approach that we took.

Demographics



Respondents

Under 26	Male	Primary complete	Urban
Under 36	Female	Secondary complete	Rural
Over 35	Less than primary	Post-secondary	



- Age is reported in years, ranging from 18 to 70, with a **median of 30**.
- Education is reported in four groups reflecting the highest level completed, from “Less than primary” to “post-secondary.”
- **Secondary education (completed)** is the largest group of users, 190, reflecting 42% of the sample and also the median respondent.
- The respondents are **evenly split for gender**, with 230 female (51%) compared to World Bank 2020 estimates of 49% female.
- **Rural respondents** are less than half of the sample, with 195 (43%), which is inline with the broader Ghanain population.
- **Women are more likely to live in the rural sector**, with 49% rural, as compared to just 37% of men.
- **Quota sampling** was used to ensure adequate representation of women and the rural sector.

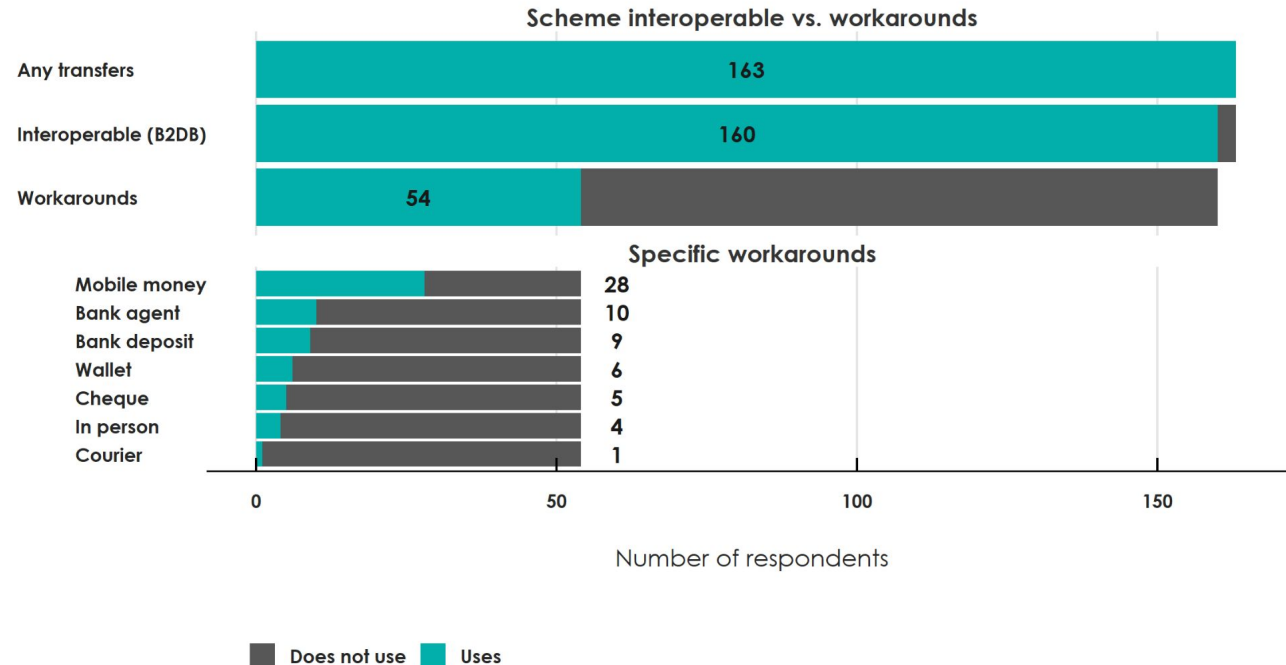
2 Key takeaways

Key Findings 1: Scheme interoperability is nearly universal, but workarounds remain common

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Nearly all bank users sending across accounts at different banks use interoperable transfers but workarounds remain



What other ways have you used to send money/make payments to ... a different bank from yours?

- Of the 163 respondents who reported sending money to someone with an account at a different bank, 98% reported transferring money through the scheme, i.e. from their bank account directly to the receiver's bank account (B2DB)
- For those that had used workarounds (33%), **use of mobile money is the most common workaround** when the recipient banks with a different bank.

Consequently, distinguishable segments for comparison are 'exclusive' vs 'mixed-methods' interoperability users



- There was no sizable distinct comparison group — users who do not use scheme interoperability — to assess the impact of scheme interoperability.
 - As noted in the previous slides, in Ghana, scheme interoperability is the norm for mobile money and bank account transfers. Yet, it is also possible to send money to a different network or a different bank using workarounds: giving cash to a mobile money agent, swapping SIMs, paying a friend to send the money, postal transfers, or cash deposits through agents and bank branches.
 - Of the surveyed digital payment users that send money across platforms:
 - 97% used scheme interoperability,
 - 34% used both scheme interoperability and workarounds (mixed-methods),
 - while only 3% had not used scheme interoperability and hence used workarounds only.
- However, it is possible to distinguish 'exclusive' scheme interoperability users from 'mixed-method' users
- We evaluate impact by comparing these two segments — based on the exclusivity of scheme interoperable transactions.
- In this report users of workarounds are also referred to as 'Non-interoperable users'

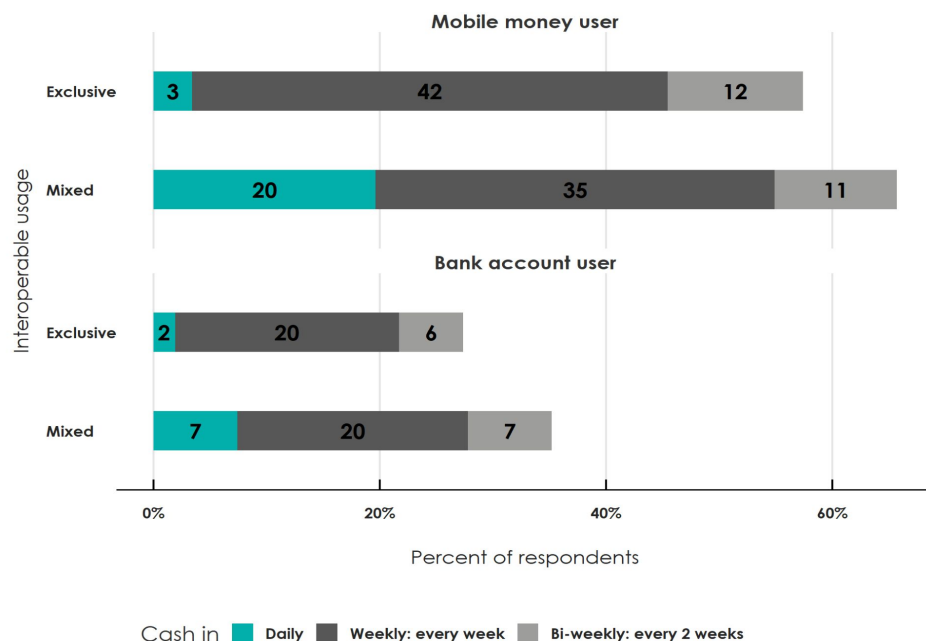
Key Finding 2: Exclusive users are **less likely to cash in and out**



Cash in and cash out reduced in frequency with exclusive scheme interoperability: Daily or weekly cash-in and cash-out transactions are more common among the mixed group than among the exclusive group. In fact, mobile money users required cash in, beyond the account balance, for three-quarters of non-interoperable transactions ([here](#)).

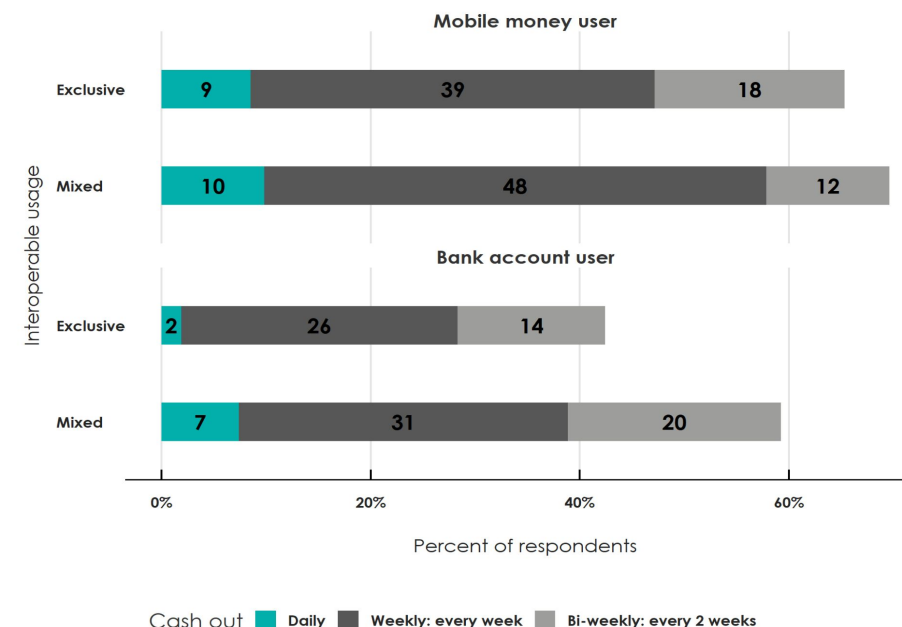
Less cash-in

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Less cash-out

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- Exclusive means never using non-interoperable methods
- Mixed means both interoperable and non-interoperable methods

Key Finding 3: Scheme interoperability facilitates smaller transactions than workaround options



Exclusive users have only minor differences in average transaction sizes compared to mixed method users and value of transactions are more distinct when comparing mode of transfer (bank vs mobile wallet).

However, scheme interoperability facilitates smaller transactions than workaround options:

- Based on the most recent cross-platform transactions performed by the sample set, transactions facilitated over the scheme lean towards being smaller than transactions over workarounds especially where mobile money is concerned.
- On average, W2DW users transacted about GHS100 less than the non-interoperable method users.

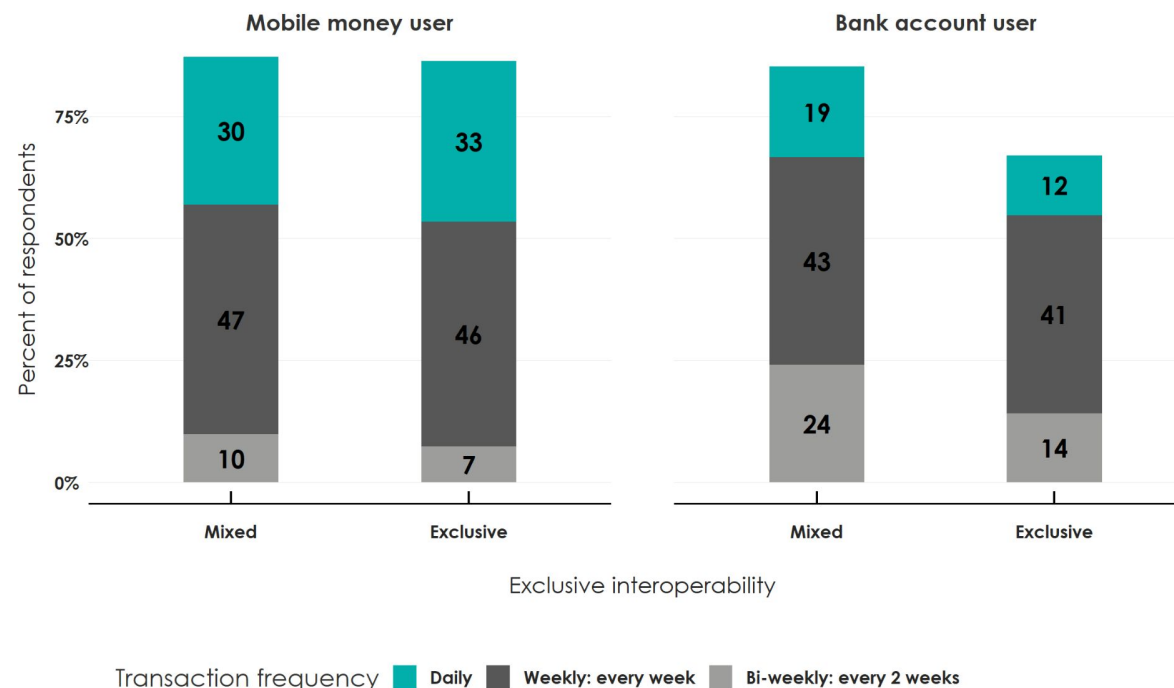
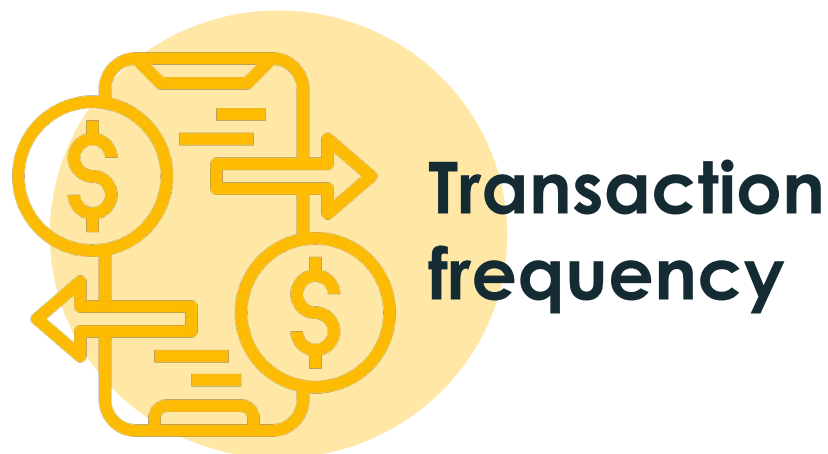
Qualitative interviews suggested two explanations:

- Scheme interoperability is more likely to be used when users already have sufficient cash in the account to send money or make payments. Mobile money users often use workarounds when they need to send large amounts of which - they are not likely to have in their wallets or go beyond defined account limits e.g beyond GHS 2,000 tiered KYC accounts.
- Interoperable service has made transactions also easier and due to this, users sent out smaller amounts whenever they needed to instead of aggregating amounts to send all at once through workarounds. This aligns with the impact study in Tanzania which found that [Impacts of using interoperable transfers](#) relate to sending smaller amounts more frequently. However, based on the following slide, transaction frequency does not increase with exclusive interoperability.

Account used	Payment method	Average	Average
		Mixed	Exclusive
Bank account	B2DB	GHS 846	GHS 814
Bank account	Non-interoperable (small sample)	GHS 914	GHS 367
Mobile money	W2DW	GHS 247	GHS 252
Mobile money	Non-interoperable	GHS 331	GHS 526

Account used	Payment method	Average	Average
		Mixed	Exclusive
Bank account	B2DB	GHS 785	GHS 75
Bank account	Non-interoperable (small sample)	GHS 845	..
Mobile money	W2DW	GHS 218	GHS 223
Mobile money	Non-interoperable	GHS 300	..

Key Finding 4: Exclusive users do not transact more frequently

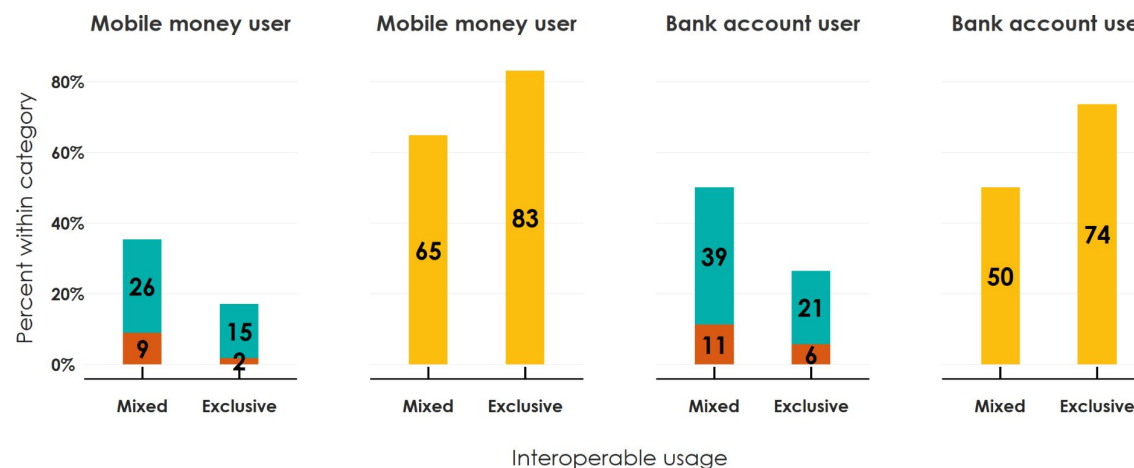


Exclusive means never using non-interoperable methods; mixed means both interoperable and non-interoperable methods.
How often do you send money/make payment using your [mobile money/bank] account?

- Mobile money users typically transact daily or weekly, regardless of whether they ever use non-interoperable methods..
- Bank account users have more frequent transactions when they use non-interoperable methods.

Key Finding 5: Exclusive interoperable users are less likely to make payment usecases beyond P2P

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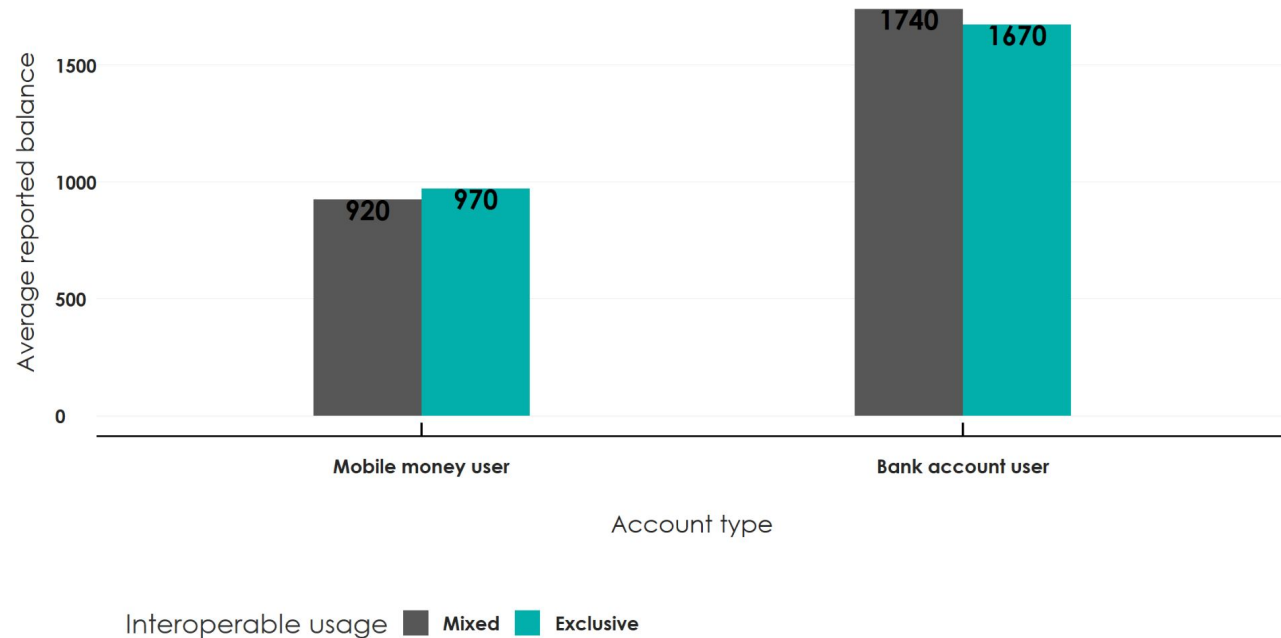
Recipient, most recent transaction ■ Business or merchant ■ Friend or family ■ Myself

Exclusive means never using non-interoperable methods; mixed means both interoperable and non-interoperable methods.

- Merchant payments are more common when the sender uses workarounds. See the teal bars at right.
- The result holds for both mobile money and bank accounts.
- Friends and family are more often the recipient of transfers when the sender uses exclusively scheme interoperable transfers. See the yellow bars at left.

Key Finding 3: **Account balances are no higher** among exclusive interoperability users vs. mixed methods users

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Exclusive means never using non-interoperable methods; mixed means both interoperable and non-interoperable methods. Balances are truncated at GHS6000, for those with balances above GHS5000.

- **Exclusivity of interoperable transactions is not correlated with the balances that users hold on their phones.**
- **Bank account balances are generally higher than mobile money account balances.**

Other Findings: Interoperability and digital payments from a bank vs. mobile money account perspective



How are bank users different from mobile money users in the way they interact with interoperability?

- The need to send to other platforms is greater among bank users than mobile money users. 71% of bank account users sent money to people or businesses on a different platform each month compared to 56% of mobile money users
 - This could be because of the high market concentration in the mobile money space - 87% of the respondents had MTN hence value rarely needs to leave the MTN platform. This compares with banks where the highest concentration of respondents was in GCB and Eco Bank (25% each), the second highest was two other banks sharing 12.5% each.
- Bank users are significantly more likely to interoperably perform bank and mobile wallet transfers compared to mobile money users
 - The biggest workaround for bank users ahead of mobile and bank agents entailed digital payment users loading their own mobile money wallets using their bank accounts and then making the necessary transactions from their mobile wallet.



How are bank users different from mobile money users in their patterns of financial access and usage?

- Mobile money and bank account users comprise an extremely similar share of rural users, about 46% — with the exception of “mixed methods” bank users who are less likely to be rural (31%) ([here](#)).
 - Hypothesis is that digital payment infrastructure is less concentrated in rural areas unlike urban areas. Hence, agents and bank branches which were noted as key workarounds for bank users would be less of an option than in urban areas.

Other expected findings are:

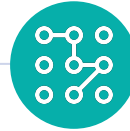
- Bank account balances are generally higher than mobile money account balances.
- Bank account users have larger transactions in general.

Other Findings: Digital payments and interoperability from a gender perspective



How are women different from men in their patterns of financial access and usage?

- Women are less likely to have a bank accounts or mobile money account compared to men. However, women that do are equally likely to have either of the stores of value.
- Women transact more frequently than men, which confirms other gender related studies conducted by BFA and others:
 - More women than men tend to use their bank accounts more frequently than mobile account to make payments.
 - Still, women are more likely than men to report that they send mobile money payments more than once a month to users on a different network



How do women interact with interoperability?

- Although scheme interoperable transactions are the norm for mobile money and bank account transfers, used by 97% of users who transfer across platforms (both bank and mobile money), Women are less likely to report using workarounds in addition to interoperable transaction (67%, “Exclusive” scheme interoperability) compared to men (58%) ([here](#)).
- Male and female mobile and bank account users have very similar educational attainment, and median age. However, women exhibit different patterns of using workarounds, particularly with low education.
 - With a primary education alone, women with higher income are less likely to use workarounds. However, with a secondary or post-secondary education, women are more likely to use workarounds when their incomes are greater ([here](#)).

Other Findings: Interoperability from a mobile network perspective



Workaround users are more likely to have Airtel and Vodafone SIMs. Vodafone and Airtel users are more likely to use workarounds (45%) compared MTN subscribers (36%) ([here](#)). Although Airtel user sample size is small (39), the Vodacom user sample size is reliable (100).

- This is despite sentiments that using Airtel and Vodafone platforms could be easier or even cheaper than MTN. Indeed Vodafone at the time allowed free transfers to users on other networks; where as MTN charged higher fees for sending money via scheme interoperability.



Multiple SIMs are less common with exclusive interoperable users

- A single SIM is the norm for both groups, but a higher share of the exclusive group (72%) have just one SIM compared to the mixed group (60%). In the mixed group, the average number of SIMs held is 1.5, versus 1.3 in the exclusive group. Virtually no one in the exclusive group holds 3 SIMs, whereas 5% of the mixed group have 3 SIMs. ([here](#))



Qualitative interviews highlighted that many have a secondary sim to take advantage of deals offered by competitors or use the wallets that are perceived to be 'less liquid' due to lack of wide agent networks as stores of value:



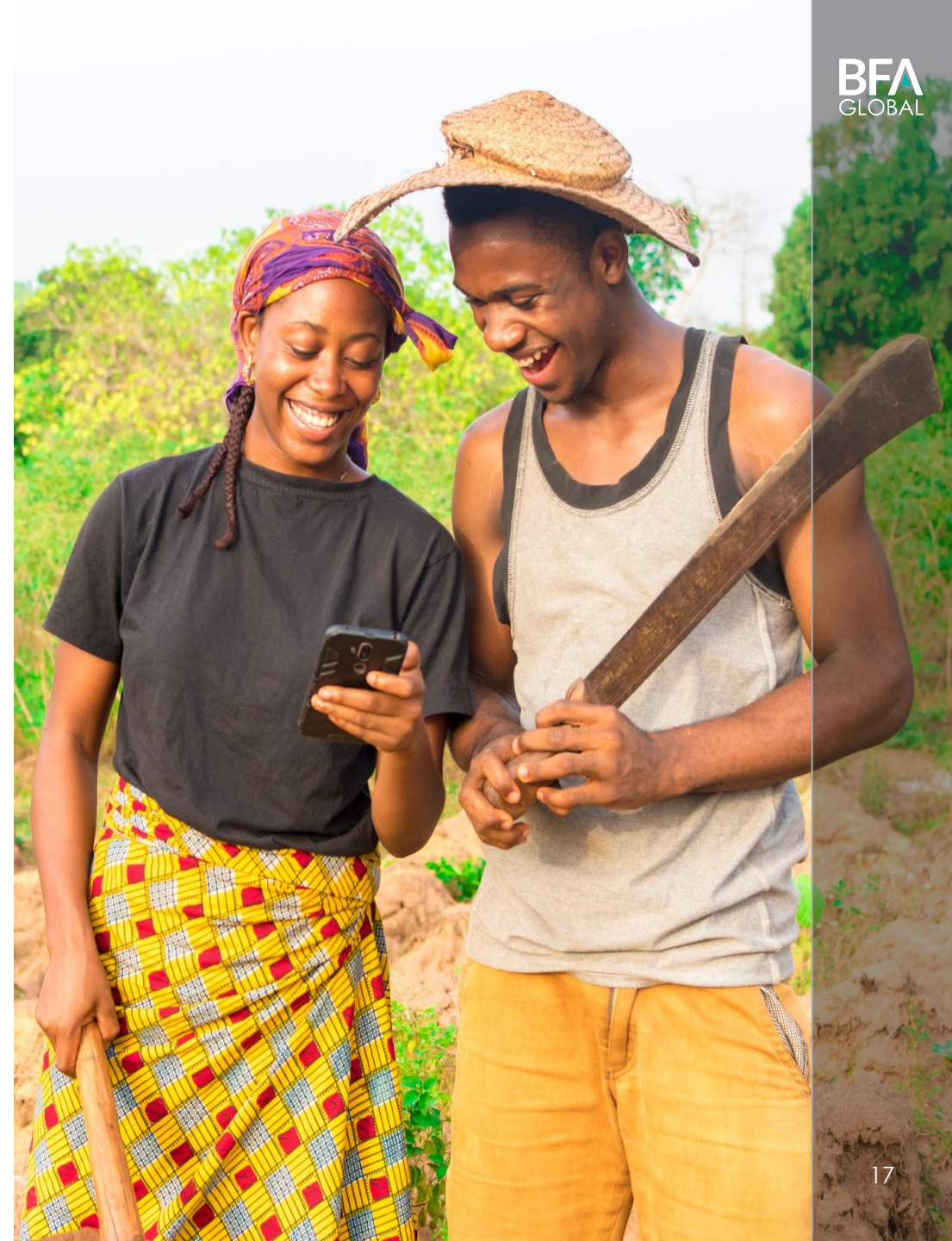
"Initially I registered two different MTN sim cards on mobile money because of the limit of the amount in sending but now I have added Vodafone because Vodafone transaction is free".

"I move money from my MTN to my Vodafone because I know the Vodafone agents are not widely available for me to withdraw like that of the MTN, I hardly use the money in my Vodafone account"

"I have AirtelTigo Cash and MTN MoMo because in my area you'll hardly find an AirtelTigo Cash agent. I'm able to transfer money from my MTN to my AirtelTigo to keep (instead of withdraw arbitrarily)"

Other Findings: Awareness, challenges and recourse

- Effectively all users were aware of scheme interoperability: direct transfers to a mobile wallet on a different network and direct transfers to an account at a different bank.
- However, awareness is slightly lower among those who use exclusively interoperable methods ([here](#)).
- Methods connecting mobile money to bank accounts may still be unknown to 23% of users. The least-recognized transaction method in our study was the GHQR code, which was unknown to half of mobile money users and two-thirds of bank users.
- The mixed and exclusive groups in our study were similar in how they learn about interoperable services. Friends and family are the most important ways customers learn about services, followed by television and the agents.
 - Bank agents are doing a better job of reaching customers than are mobile money agents to explain the availability of services.
- Challenges affected just 9% of users overall. They included network outages and unexpected or scheduled downtime are by far the most likely causes of problems. However, nearly all challenges reported were resolved and the few that were not related to mobile money transfers.



3 Summary and Conclusion

Summary of Findings VS. Initial Hypothesis

Scheme interoperability is nearly universal, but workarounds remain common, hence the distinguishable segments for comparison of uptake and impact are 'exclusive' vs 'mixed-methods' interoperability users. Exclusive users reported using scheme interoperability only to send or make payments to people/businesses on other platforms(banks/ mobile money providers), while mixed users also use workarounds in addition to direct channels facilitated by the scheme.

Based on the theory of change for interoperability and evidence from other markets e.g [Tanzania Impact study](#) undertaken by BFA in 2018, we had a set of hypothesis related to how availability and use of scheme interoperability would affect usage of digital payments in Ghana. The hypothesis and results are summarised below:

Hypothesis: With greater use of scheme interoperability we expected;	Results:
Reduced frequency of CICO - more incentive to keep digital value in the system due to greater utility	As expected exclusive users are less likely to cash in and out
Reduced transaction size - due to seamlessness and ease	As expected although exclusive users transact smaller amounts but transactions facilitated via scheme interoperability are smaller than those facilitated via workaround options
Higher frequency of transactions - due to the split smaller transactions above	Not evident that exclusive users transact more frequently than mixed-method users
Higher account balances - more incentive to keep digital value in the system due to greater utility	Not evident , account balances are no higher among exclusive users compared to mixed-method users
Adoption of digital payment for broader set of usecases beyond P2P - low hanging fruit	Contrary to expectation , mixed-method users are more likely to adopt broader use cases beyond P2P e.g. payments to merchants
Greater competition, reduces barriers of entry by opening up network effects, consumers would also be able to select providers based on diverse offers	Contrary to expectation , exclusive interoperable users are less likely to have a second or third sim to take advantage of diverse offers. Infact, workarounds are more likely among Vodacom and Airtel users despite them being more cheaper and user interface being easier (positioning of interoperability option on menu being more apparent)

Conclusion: Use of workarounds appears rational

Those that use workarounds come across as being more savvy payment users (for the reasons listed below). They are aware of options and pick and choose to use them to best meet their needs.

Exclusive users lean towards:	Workarounds users lean towards:
Women bank account users	More male mobile money users therefore likely to have more information and higher incomes
Primary education-women of higher income	Secondary education women higher income
Payments to friends and family (P2P)	Apart from P2P, merchant payments P2B/ P2M are more likely
Small transactions	Larger transactions
Lower share of bank-wallet transactions	Higher share of bank-wallet transactions: which is the usecase with least awareness among users after GHQR which was recently launched
Mostly MTN users	Mostly Airtel and Vodacom users: smaller players but offer unique propositions that users may be trying to take advantage of
Awareness across interoperable options is slightly lower	Awareness across interoperable options is slightly higher

Could scheme interoperability be better optimized to capture transactions that otherwise flow through workarounds?



Conclusion: Possible opportunity to progress tiered accounts to reduce reliance on workarounds

Numerous respondents that took part in the qualitative interviews relayed that a key reason for using workarounds was when the amount they needed to send was large. In most cases, respondents referred to the amount being larger than GHc 2,000 which we discovered was a daily limit prescribed for the first of three-tiered Know Your Customers (KYC) account structure.

It could be that mobile money users are not aware that one can increase their account limit or the process is too cumbersome. If this has not already been resolved, providers should investigate and **develop measured strategies to transition customers to the next tiers to capture transactions that otherwise flow through workarounds.**

Conclusion: Recommendations for future interoperability demand-side studies



Distinct comparison groups may not always emerge.

- In Tanzania, we were able to identify two distinct groups of users to assess uptake and impact of interoperability. We compared 'scheme interoperability users' versus 'non-interoperable users' as there was still a significant portion of mobile money users that had not yet used scheme facilitated interoperability, three years after its launch.
- In Ghana, we found that nearly all digital payment users (97%) that had sent money to a different platform had used scheme facilitated interoperability. That led us to use second-best comparison groups: 'exclusive interoperability users' vs "mixed-method users" (the later incorporates workarounds in addition to scheme facilitated interoperability).



Examining more sophisticated interoperability structures may require more robust research approaches.

- For instance, evaluating Ghana where the scheme facilitates interoperability across various types of stores of value requires a more intensive approach than evaluating the Tanzania mobile money scheme.
- In Ghana, qualitative interviews before and after the research were essential to optimize the quantitative survey tool. Telephone surveys must be shorter in duration than face-to-face interviews; yet detailed enough to cover the different forms of scheme facilitated interoperability in Ghana.
- Upon reflection, qualitative interviews after the quantitative research could have distilled out better learnings from the quantitative survey results. Although some results are consistent with the initial qualitative interviews, other trends are contrary to the initial hypotheses. This suggests a need to probe further.
- When we conducted similar research in 2018 assessing Tanzania's mobile money scheme, one round of qualitative interviews coupled with quantitative interviews was satisfactory.



Money matters and long questionnaire may be better administered in person:

- Survey fatigue was a problem for interviewers as we tried to explore multiple complex concepts via telephone.
- The sensitive subject matter — account balances and transaction amounts — inhibits respondents from disclosing information over the phone. In person, it is easier to build rapport with respondents.

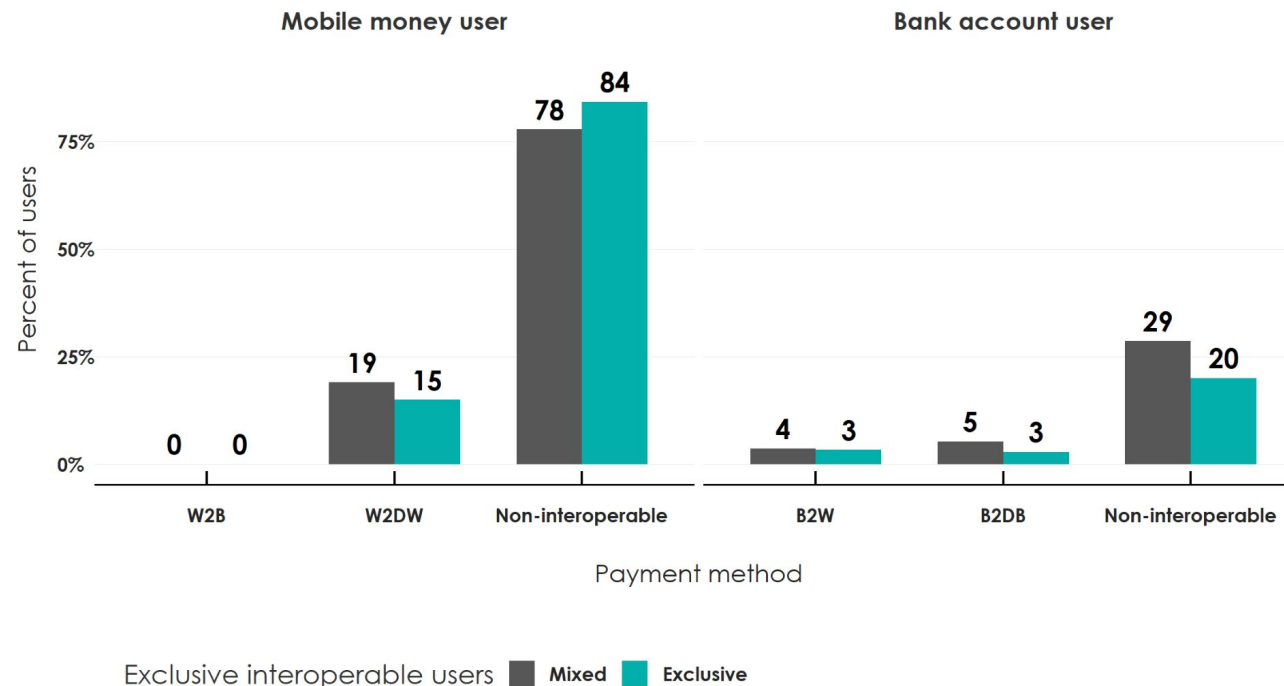
4 Annex

Mobile money users more often require cash-in for a specific transaction.



Cash-in for a specific transaction

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Did you have to cash in (deposit), or did you have enough money in your wallet (on the account)?

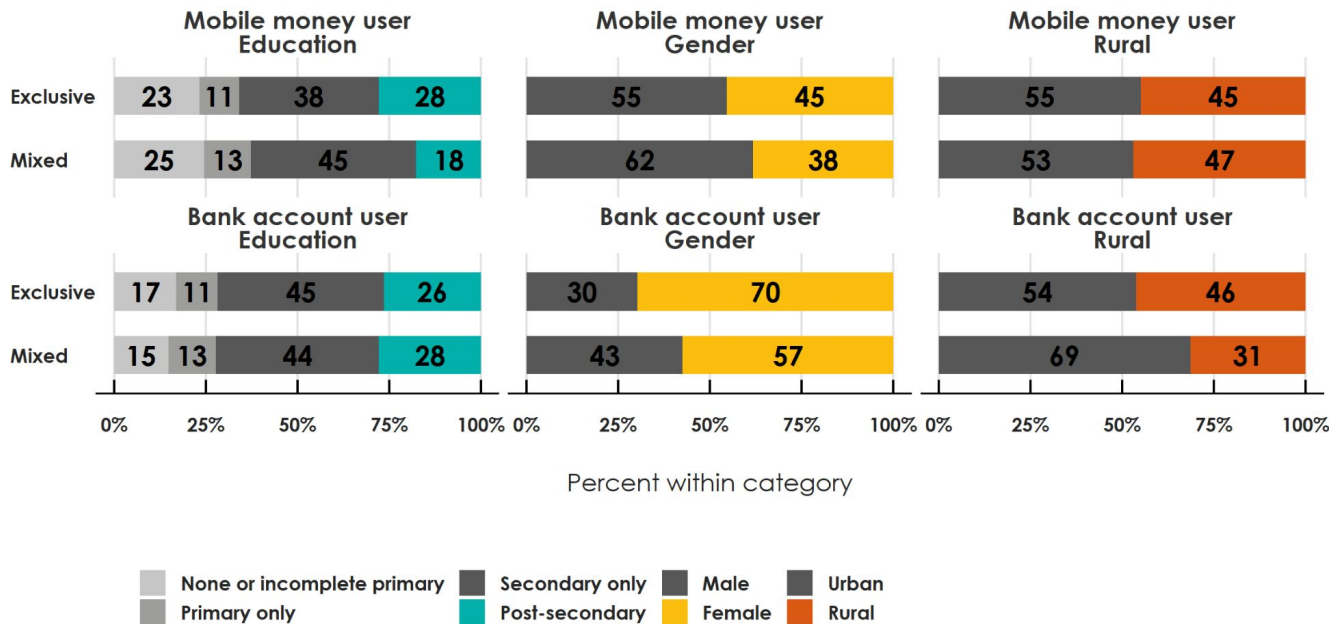
- Non-interoperable transactions among mobile money users typically involve cash.
- This slide concerns data about the most recent transaction. (Contrast with earlier data on overall frequency of cash in and cash out.)
- Mobile money users required cash in, beyond the account balance, for **three-quarters of non-interoperable transactions**.
- Bank users reported using additional cash, beyond the account balance, for **non-interoperable bank transactions in just one-quarter of cases (23%)**.
- Interoperable mobile money transfers required cash added in 16% of cases. The comparable rate for interoperable bank transactions is less than 5%.
- **Interoperable methods were much more likely to be used when users already had sufficient cash in the account to send money or make payments.**

Demographic representation of interoperability uptake



Demographics drill down: Bank vs mobile money users

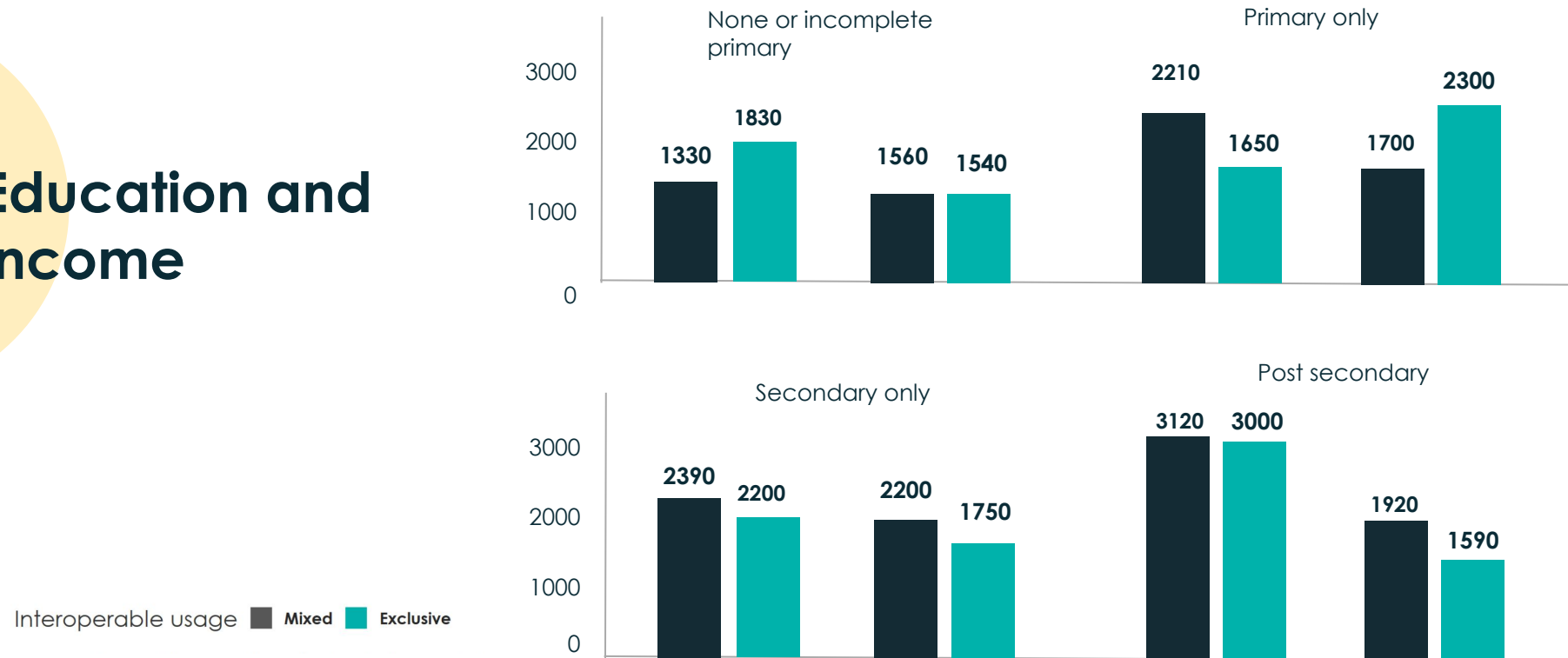
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Exclusive means never using non-interoperable methods; mixed means both interoperable and non-interoperable methods.

- **Educational attainment (teal at left)** shows no such strong patterns. However, with a secondary or post-secondary education, women are more likely to use workarounds when their incomes are greater ([here](#)).
- The center column of this plot, in yellow, shows that bank account users are more likely to be female while mobile money users are more likely to be men.
 - The correlation holds true regardless of interoperability. Overall, bank account users are more likely to be female than male, by a margin of 2:1 overall. Among the exclusively interoperable bank account users, women comprise 70% of that group, and 57% of bank users who sometimes use non-interoperable methods.
 - The correlation holds in the other direction as well (not indicated on the chart). **Bank accounts are used more often by 46% of women; versus just 25% among men.**
- Rural users also comprise an extremely similar share of mobile money and bank account users — with the exception of **“mixed-method” bank users who are less likely to be rural (31%) than the rest (46%).**

Intersection of gender with education, income and use of interoperable transactions



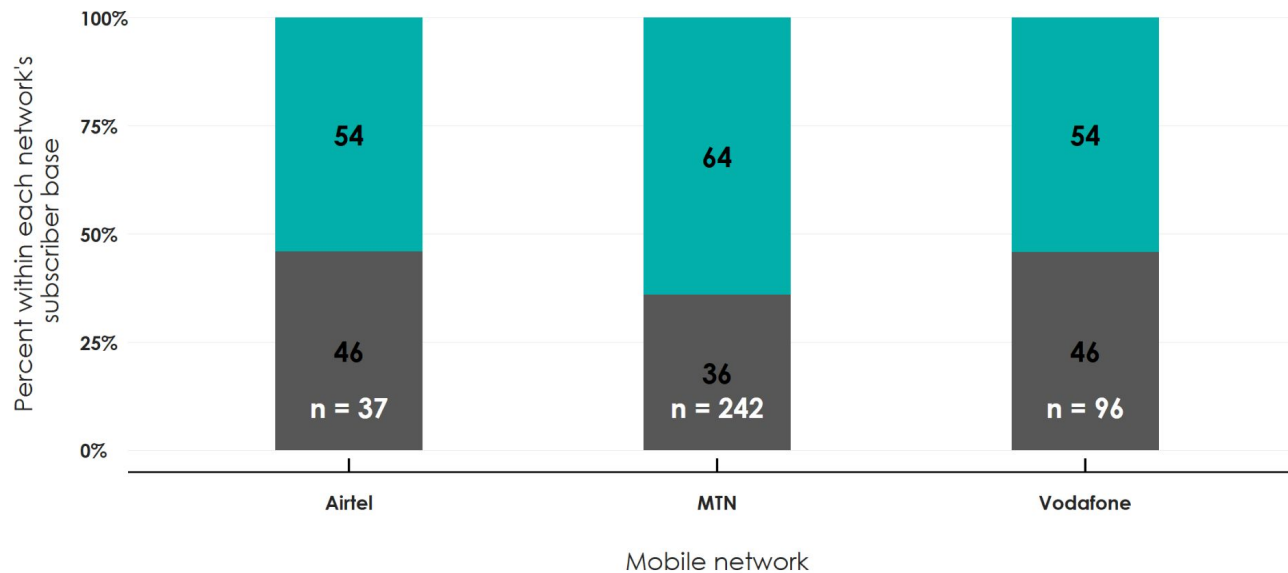
- Women exhibit different patterns of non-interoperable transactions at different levels of education.
- With a primary education alone, women are less likely to use workarounds when their incomes are greater.
- With a secondary education, the reverse is true.
- Amongst those with post-secondary education, women have a much larger income gap *vis-à-vis* men.

Use of workarounds increases among those who use Airtel and Vodafone.



Exclusively Interoperable

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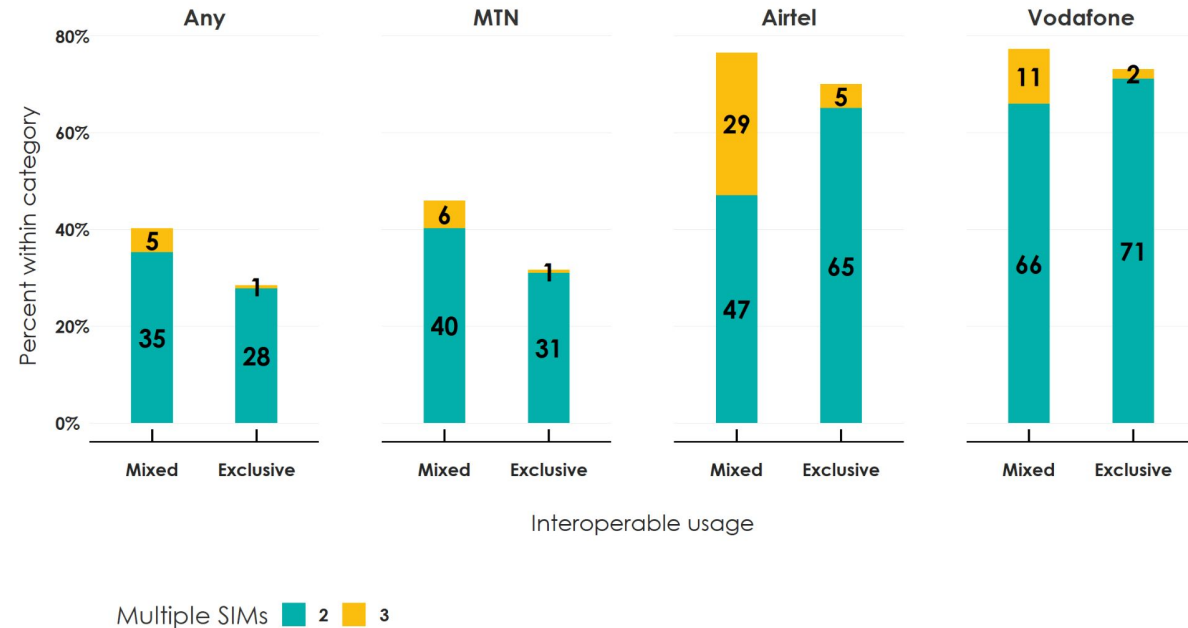
Interoperable usage ■ Exclusive ■ Mixed

Exclusive means never using non-interoperable methods; mixed means both interoperable and non-interoperable methods.

- **Airtel** users more likely to report **mixing workarounds** with scheme interoperable transactions (54%) than are MTN subscribers (64%).
- The sample size is rather small, but corroborated by Vodafone results at right.
- **Vodafone** has the same pattern, with high rates of multiple SIMs owned and users that are more likely to make **workaround** transactions.
- Vodafone also has more users in our sample, increasing our confidence in this result for those users.

Multiple SIMs are less common with exclusive interoperable users.

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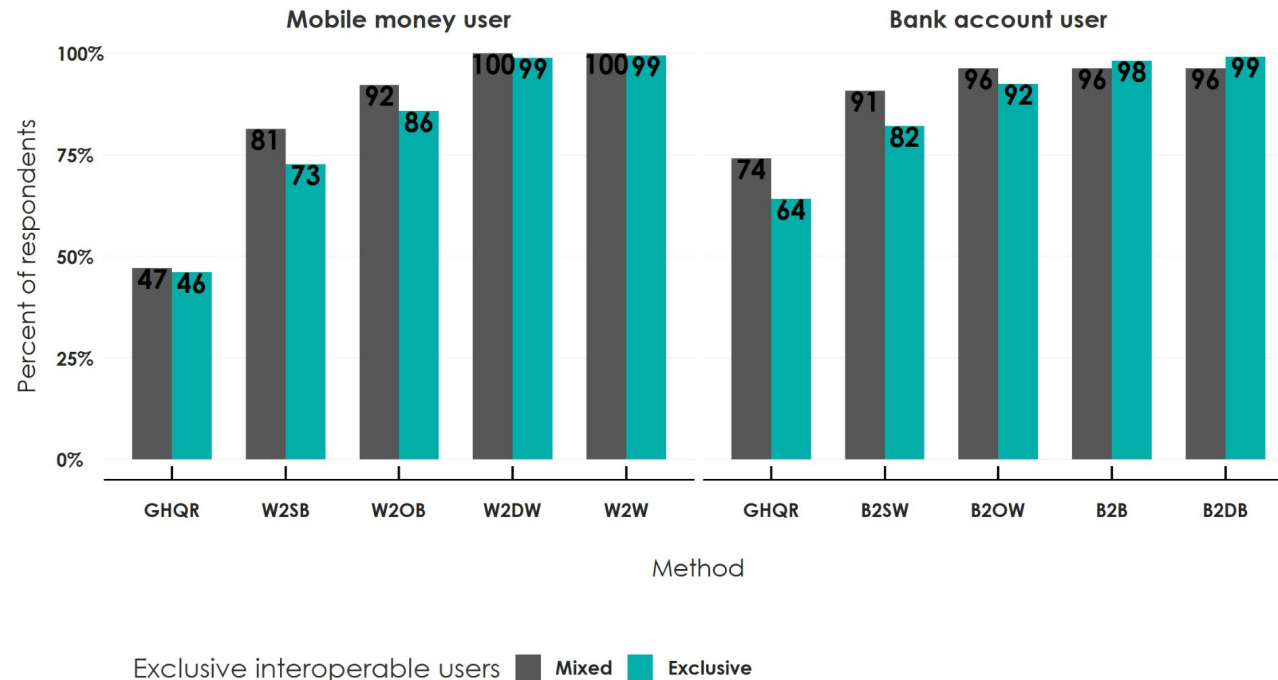
Mobile users are grouped by the networks that they use on this slide. Users may appear under more than one network operator.

- Mixed method users are **more likely to have multiple SIMs**.
- **Secondary networks**, that is, Airtel and Vodafone, are much more likely to have customers with two or three SIMs.

Are users aware of these interoperable methods for their preferred account?

Awareness

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Do you know if it is possible to transfer money instantly from your mobile money wallet or bank account directly to...?

- **QR codes are the least recognized** payment method in the survey.
- Awareness lags substantially among mobile money users (47%) vis-a-vis bank users (69%).
- **Effectively all** users know of the main bank-to- bank and mobile- to-mobile methods.
- Methods **connecting mobile money to banks** may still have up to 23% of users unaware.
- Awareness is slightly **lower among those who use exclusively** interoperable methods.
- **Users are classified** by their most frequently used payment method, as reported on the survey.