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# Can Digital G2P Payments Increase Financial Inclusion and Empower Women? Evidence from PESP in Bangladesh

ALAN GELB · ANIT MUKHERJEE · BRIAN WEBSTER

## Abstract

Bangladesh's Primary Education Stipend Program (PESP) provides stipends for 13 million primary schoolchildren to 10 million mothers. In 2017 the method of payment changed from cash to mobile money. This study considers the experience of the mothers with the shift to mobile money, and to the change in payments service provider that took place in 2019, through a survey of recipients and a control group. We explore the experience and perception of beneficiaries vis-a-vis the receipt of digital transfers, convenience of transactions and ability to use digital payment systems. We also consider spillovers onto financial inclusion and use, and whether the stipend and the method of payment, has increased women's economic empowerment.

Our analysis indicates that PESP beneficiaries overwhelmingly support the transition to digital payments. While a modest number think that cash-out points are too far away, they are in general, satisfied with the convenience of making withdrawals. We find positive perception of women in terms of their degree of control over the use of the funds following the shift to digital payment, particularly for those who have their own phone. Taking account of the views of the beneficiaries themselves, our survey provides support to the proposition that digital G2P payments have contributed to an improvement in women's sense of empowerment and their ability to make independent decisions on matters relating to household finances and specifically, for their children. The study also finds positive spillover effects onto financial competition and inclusion more generally, with the rapid growth of the new payment service provider for PESP stipends. Finally, digital transfer of stipends through mobile phone wallets can provide a "nudge" towards the use of digital transactions for other purposes, but this is conditional on personal attributes of beneficiaries. For many mothers, limited digital literacy and capacity to read and write SMS presents a serious barrier to greater uptake of digital financial services, an issue that needs to be addressed by policymakers in Bangladesh as well as globally.

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# 1. Introduction

Governments around the world are increasingly using digital technology to transfer social assistance directly to program beneficiaries. Collectively known as Government-to-People (G2P) transfers, payments are made either to bank accounts or to digital wallets linked to their mobile phones. The massive expansion of G2P programs during the COVID-19 pandemic has demonstrated the efficiency and speed of such digital payments to mitigate the socio-economic impact of the pandemic-induced lockdowns (Gentilini et al., 2022). Many governments now have the knowledge and capacity to use digital tools—a combination of digital ID, mobile phones, digital financial accounts and beneficiary registries—to design and implement “digital first” social protection programs at a national scale (Gelb et al., 2020).

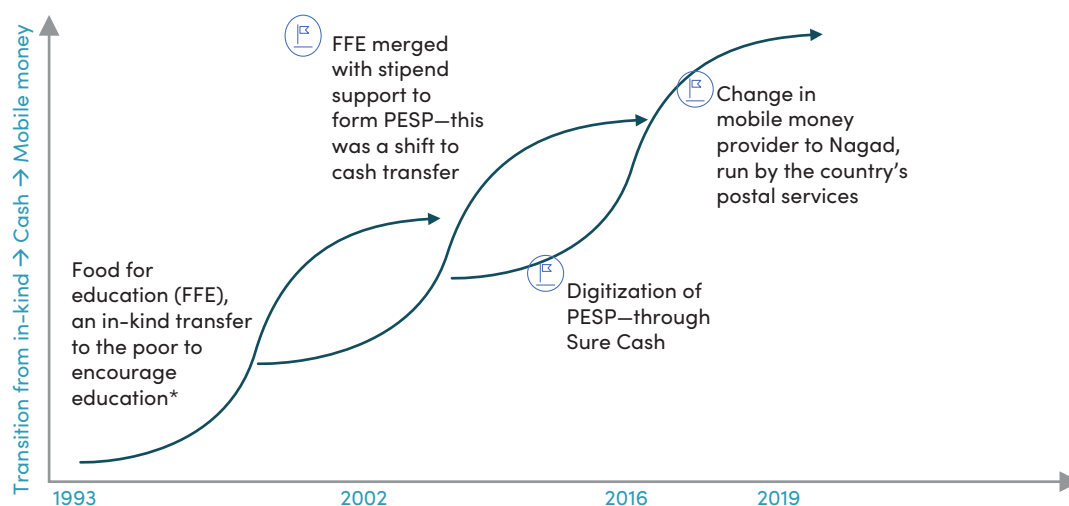
Studying long-standing G2P programs that started off with cash and transitioned to digital payments allows us to observe the beneficiary experience of digital G2P payments on parameters such as access and convenience compared to cash distribution. The programs also allow us to track important spillover effects onto financial inclusion, and in cases where they specifically target a particular socio-economic group such as women, onto empowerment.

This paper reports on a study of one such case, Bangladesh’s Primary Education Stipend Program (PESP). Starting in 2002, PESP subsumed the earlier Food-for-Education (FFE) program and was redesigned as a cash-based intervention aimed to incentivize school enrolment among the extremely poor. It covered around 40 percent of poor rural households at the Union (sub-district) level who were selected through categorical and means testing, as well as school-level deliberations to identify the most in need. The program was universalized in 2019 and now covers around 13 million children through over 10 million mothers across Bangladesh, making it the largest cash transfer program in the country in terms of beneficiaries covered. In response to the hardships faced by families due to the COVID-19 pandemic, the benefit amount was increased from Bangladesh Taka (BDT) 100 (\$1.2) to BDT 150 (\$1.75) per child with a cap of BDT 500 (around \$6) per family per month paid in quarterly instalments.

In 2017, the method of payment changed from cash to digital. PESP payments started to be disbursed to mothers through mobile wallets instead of the previous method of cash payments made at the school on designated days. SureCash was initially chosen as the sole payment provider although there were other more established players in the Bangladeshi mobile money market. This arrangement changed in early 2019 when Nagad, a new mobile money company supported by the Department of Post of the Government of Bangladesh, was tasked with disbursing PESP payments through their own digital wallet system. The number of beneficiaries remains roughly the same. While not indicative of the entire population of Bangladesh, a representative sample of mothers who receive the stipend can provide a nationwide picture of the opportunities and challenges of moving to a digitized system of G2P transfers from the beneficiary point of view (especially women), and the

policy measures that can support or inhibit access and adoption of digital financial services more generally. A summary of the PESP timeline and milestones is provided in Figure 1.

**FIGURE 1. PESP timeline and payment modalities**



Note: \*FFE covered 27% of the population and gave 15 kgs of wheat or 12 kgs of rice to every student.

## Cash to digital transition

Changes in G2P payment modality from cash to digital involve three key transitions on the beneficiary side: access, adaptation and adoption.

### Access

Historically, social assistance payments across the world were often disbursed at designated payment points. These could be schools (for stipends such as PESP), community meetings (TASAF in Tanzania), local government offices (pensions in India) or through private contractors (Cash Paymaster Services pay points for pensions and child support grants in South Africa). Beneficiaries needed to gather at specific locations on designated days to receive their payments. In contrast, digital G2P payments provide beneficiaries with flexibility to withdraw funds at their own convenience at multiple payment points or save part of the transfers if they wish to do so (Gelb et al., 2020). However, depending on the choice of the payment instrument (bank account, pre-paid card or mobile wallet), beneficiaries are mandated to obtain access to these instruments and the program administration is accountable to ensure that they do so.

In the case of PESP, beneficiary mothers had to register a mobile number with the designated provider—initially SureCash and subsequently Nagad. As shown by previous research, a significant proportion of mothers did not own a mobile phone. In such cases, they had to use either their husband's or that of other family members—son, daughter, daughter-in-law etc. (Gelb et al., 2019). As per the current guidelines, mothers need to register a SIM card and obtain a wallet under their

own name, which implies that all PESP beneficiaries now have a digital financial account. However, as we shall see below, the actual device used (that is, the mobile phone itself) might be that of the husband or be owned jointly. While access to a *digital financial account* may be universal, its use may vary depending on whether the mother has her own phone or not.

### **Adaptation**

For beneficiaries, changes in G2P payment modalities require significant adaptation to a 'new normal.' These are both in terms of the ability to use digital devices and systems ('digital literacy and capacity') as well as adjusting to the schedule, location and mode of withdrawal. In contrast to the physical distribution of cash, digital payments provide greater agency and choice, along with privacy in handling transactions especially to women beneficiaries. They can withdraw their transfers at their own convenience and from preferred pay points. However, sometimes there can be tradeoffs. While school-based distribution may require mothers to spend the whole day waiting to receive cash, the convenience of digital transfers may be tempered by the distance to agent points and the variation in the quality of service provided.

As we will see in the case of PESP, the optimal case is when beneficiaries have their own phone, are digitally literate and capable, and payment provider cash out points are nearby. These can facilitate rapid adaptation to the new 'digital first' G2P delivery systems and a positive perception of the new payment method. Also, migrating from one PSP to another creates a potential source of friction that would need to be managed by the program administration to avoid inconvenience and exclusion. Ensuring access and facilitating adaptation are both important for beneficiaries to support digitalization as it evolves over time.

### **Adoption: Spillover onto true financial inclusion**

Moving to digital G2P payments necessarily involves beneficiaries becoming more familiar with new digital tools, especially mobile phones and financial accounts. However, there is limited evidence to understand whether access and adaptation leads to more general adoption of digital payments by beneficiaries beyond cashing out their grants. These could include using mobile wallets to send and receive remittances, pay merchants and for services such as mobile recharge fees. Adoption can also occur beyond the field of payments, including such activities as connecting with friends and family using social media or messaging applications like WhatsApp. Adoption can be an extended process outside the purview of the immediate objectives and design of G2P programs, but one that promises a positive impact on both beneficiaries and delivery systems as economic activity becomes increasingly digital.

The long duration of PESP, its change in payment method and existence of different beneficiary cohorts, some exposed to both cash and digital payments and others with no experience of the cash-based model, offers a unique opportunity to test whether access and adaptation has had an impact on

the adoption of digital tools and platforms more generally. Over the last decade, Bangladesh has made significant progress in expanding mobile-based payments and financial transactions through a wide network of agents covering the whole country. Increasing smartphone penetration has encouraged greater use of digital communication platforms, especially for women whose husbands and other family members work as migrant labor both nationally and across the world. While it is difficult to prove causation, in our study we have attempted to capture whether there has been a change in their adoption of digital tools and platforms beyond the immediate need to cash out PESP stipends.

A further potential financial spillover is whether the change in payment modality leads to increased rates of financial inclusion for non-beneficiaries by growing the market for digital financial services as a whole. As we shall see below, PESP provides a quasi-natural experiment where we can provide some evidence that this has indeed been the case.

### *Spillover onto women's empowerment*

Many early large-scale conditional cash transfer such as Progresa in Mexico and Bolsa Familia in Brazil aimed to empower women by designating them as the program beneficiaries.<sup>1</sup> There is some evidence to show that this had an effect, at least on the perceptions of greater participation and self-confidence in making decisions about household expenditure. However, critiques of such programs point out that conditionalities such as school attendance, health provider visits and the like impose an undue burden on women, reinforcing traditional gender roles as primary caregivers for children and providers of unpaid household work. A review of the literature suggests that in the case of poor women, the positive benefits of control over economic resources outweighs the concerns over gender norms, which are slow to change in any case (Bartholo, 2016).

These observations are relevant for more recent digital G2P programs like PESP that are designed to improve both financial inclusion and human development.<sup>2</sup> As we noted above, if designed and implemented well, digital G2P programs can increase beneficiary agency, improving access, supporting adaptation and facilitating adoption of digital financial services. However, there is little evidence thus far as to whether this leads to any change in women's decision-making role in the household, their control over resources and their ability to make decisions on expenditure, especially related to the use of the stipends. Our survey attempts to bridge this knowledge gap and support evidence-based programs in this important area of global public policy and practice.

## **Objectives and outline**

The discussion above sets the context to outline the objectives of the paper, its research design and methodology and the wider implications of our findings both in the context of Bangladesh as well as

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1 Another example is the Bhamashah program in Rajasthan, which designated the woman as the default head of household in the social registry. See Gelb et al., 2017.

2 Most CCTs delivered benefits through a program specific debit card, not a financial account.



for the class of digital G2P programs that are now finding global acceptance as an efficient, equitable and impactful way of delivering social protection.

The key objective is to provide new evidence on the impact of transitioning from cash to a digital mode of delivery for social assistance payments. Taking a beneficiary centric approach, we conducted a nationally representative survey of PESP beneficiaries -all of whom are mothers— to explore the following questions:

1. Access: Do beneficiaries have access to the digital tools needed to cash out the stipends? Are they able to use them independently, or do they need assistance? Have changes in the payment service provider impeded access?
2. Adaptation: How do beneficiaries perceive the change from cash to digital? What are their experiences? What do they like, and not like about the digitized system, and why? What can be better? Are there differences across cohorts (explained below), socio-economic strata and different levels of digital capacity?
3. Adoption: Do beneficiary mothers exposed to digital payments use their mobile wallets for other purposes? If so, have they become confident enough to do so independently? Do they engage with the wider digital ecosystem, for example, social media? Are there certain categories of mothers who are more likely to adopt digital financial services? Has the massive push towards digital wallets also led to an additional spillover, onto increased competition in the provision of financial services and financial access for non-beneficiaries?
4. Empowerment: Does getting PESP benefits digitally increase women's perceived control over resources and participation in household decision making? Does it matter whether the benefits are received through their own mobiles or through phones belonging to other family members?

In Section 2, we outline the research design and methodology. Subsequent sections address access, adaptation, adoption, and spillovers onto financial inclusion and women's empowerment. We conclude with the main lessons that can be shared with other countries implementing their own digital G2P payments programs over the medium and long term.

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## 2. Survey design and methodology

We partnered with Microsave Consulting (MSC) to carry out a nationwide survey of 1,215 mothers in the month of January, 2021. Of these, 979 were currently receiving, or had recently received, PESP payments in digital form. As a control group, we also surveyed mothers who either received PESP payments only in cash or had never received them. Since the program became universal in 2019, the sample was chosen to be representative of mothers across the entire country.

In the first stage, the sample was drawn to represent three geographical areas—urban, semi-urban and rural using a probability-proportional-to-size (PPS) methodology to ensure representativeness of the demographic distribution of the population in the country. Just over 62 percent of our sample is rural, while the semi-urban and urban areas constitute nearly 20 and 18 percent respectively.

In the second stage, districts (zilla) and sub-districts (upazilla) were chosen from eight administrative divisions so as to ensure a nationally representative sample. In keeping with the overall distribution of the population, the top three administrative divisions represented were Dhaka (15.14%), Chattogram (14.98%) and Rangpur (14.81%). A total of 23 districts and 61 sub-districts were included in the survey. The most populous urban agglomeration in each district was included and the sample, distributed as per their weight in the overall non-rural population, using the same methodology. Our sample is geographically well-represented, with just over half of the total respondents being drawn from the top 12 districts, while nearly two-thirds of our sample was drawn from the top 15 districts.

In the final stage, districts and sub-districts were chosen at random and a sample of mothers were randomly drawn from the sub-district PESP beneficiary database to be administered the questionnaire. The full list of locations and the survey questionnaire is available upon request.

The study also conducted a qualitative survey involving 40 in-depth interviews with beneficiary mothers as well as 20 key informant interviews with various stakeholders in the PESP ecosystem; namely, government administrators, school officials and MFS agents. The location of the interviews was chosen purposefully to ensure representation of different administrative divisions as well as socio-economic diversity among the respondent mothers.

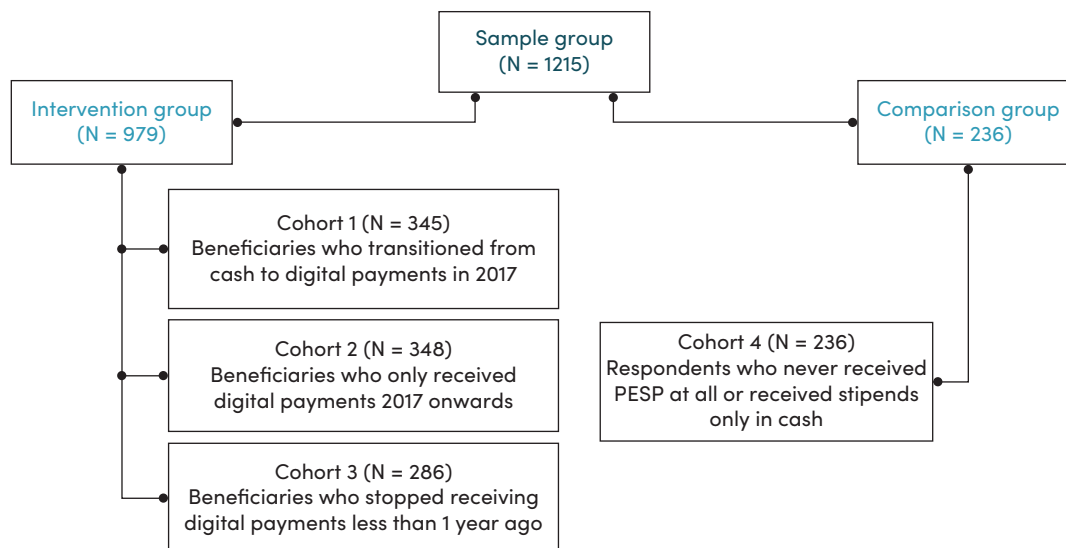
## **PESP beneficiary cohorts**

As noted above, the design and duration of PESP, its transition from cash to digital payments using mobile wallets and the recent change in payment service provider allow us to investigate access, perception and spillover effects over three cohorts.

Cohort 1 consists of mothers who are currently receiving PESP and have done so in both cash and digital forms. Cohort 2 is made up of mothers who are currently receiving PESP stipends but have only experienced digital payments. Cohort 3 includes mothers who stopped receiving PESP stipends less than one year ago; they have experienced digital payments under the program but may or may not have received them in cash.

The control group (Cohort 4) was restricted to mothers less than 50 years of age who either received PESP payments in cash or never received them. The survey questionnaire for this group was modified accordingly. The summary information and geographical distribution across the four cohorts is provided in Figure 2 and Table 1 respectively. Surveys were carried out in-person.

**FIGURE 2. Intervention and control cohorts**



Note: Beneficiaries were interviewed randomly while a minimum quota of 100 was maintained from each of the cohorts in the intervention group.

Apart from the screening questions to determine the cohorts, the first section of the questionnaire collected information on the demographic, economic and social characteristics of the sample. These included the mother’s age, education level, type of housing, the number of household members, the primary wage earner and their occupation as well as the mother’s occupation (if different from primary wage earner).

**TABLE 1. Geographic distribution of PESP sample by cohort**

Geographic Area	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Row Total*
Rural	217 29%	218 29%	172 23%	147 20%	754 100%
Urban/Semi-Urban	128 28%	130 28%	114 25%	89 19%	461 100%
Column Total (%)	345 28%	348 29%	286 24%	236 19%	1215 100%

Notes: \*Rural: 62%; Urban & Semi Urban: 38% of overall sample. Totals may exceed 100% due to rounding.

Since PESP focuses on primary education, the questionnaire collected information on the number of children in the household and those attending primary school. In cases in which the reported number of children in the household was less than the number attending primary school, we asked for the reason why (too young, dropped out or continuing education at higher levels). We also asked mothers how long they had received the stipend to better understand the current distribution of PESP recipients across different cohorts.

## Demographic, socio-economic and child-related indicators

In terms of age distribution, we find that just over 10 percent of mothers fell below 25 years of age, while nearly 60 percent were between the ages of 25 and 35. Nearly 86 percent of all mothers have received some education, with almost two-thirds of them having completed primary school themselves (only 13 percent reported having no schooling). Two-thirds reported living in dwellings with a thatched roof (mostly from rural areas) while one-third of our sample lived in semi-thatched houses and 20 percent reported living in cemented houses. Just over half of the mothers in our sample lived in a household of four or less members, while around 40 percent reported having five or six household members. Interestingly, over 90 percent of households had three children or less. The cohort-wise distribution of demographic and socio-economic characteristics are provided in Annex 1.

Out of a total of 1,432 primary school age children, 54 percent were male and the rest female. In 90 percent of cases in which children were reported as not enrolled in primary school, the child was either too young or studying in secondary school. Around 5 percent of mothers reported children needing to support the family income or an inability to pay the expenses as reasons for not sending their children to school. This is in line with estimated proportion of out of school children at the primary level of around 6 percent before the pandemic (BBS and UNICEFF, 2022).

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### 3. Access to mobile phones and financial accounts

The PESP design requires beneficiary mothers to have prior access to two digital tools: a mobile phone and a digital wallet linked to a registered number. In our sample, almost 95 percent of beneficiaries had their own phone, a slight increase from the reported 90 percent before digitization of PESP payments. For most beneficiaries, having a mobile phone was not a major constraint to accessing digital G2P payments. It also indicates that Bangladesh has been able to bridge the gender gap in access to mobile phones to a large extent, comparing favorably to its neighbors in South Asia.

In terms of access to payments, there is some flexibility in the way mothers use mobile devices to receive the PESP stipends. As per the program design, they can use any mobile phone (handset) to receive digital transfers so long as the SIM card linked to the digital wallet is registered in their name. This presents two different possibilities. Mothers can use their own phone if they have one. Alternatively, they can use their husband's or the household phone to receive the payment. In our sample, nearly 25 percent of mothers received the transfers this way while the rest used their own mobile. This indicates a significant difference between *owning a mobile phone* and *using a digital financial account* for G2P payments.

Bangladesh's digital financial services facilitate the use of both basic feature phones as well as smartphones to obtain a digital wallet for receiving and transacting funds. In our sample, only

around 20 percent of mothers reported having a smartphone while nearly three-quarters used a basic (“feature”) phone to receive the PESP stipend.

The capacity of mothers to use digital technology varies considerably. Our survey data indicates that while almost all can pick up and make calls independently, only 28 percent can read SMS and 18 percent can write SMS. This is an impediment for communication of program related information electronically. Our qualitative enquiry suggests that mothers find it difficult to follow such guidance through text messages, especially when they are not written in the local language, Bangla.<sup>3</sup>

Less than 10 percent reported that they can independently make payments or take action when they receive a transfer—almost all those reporting the ability to do so have smartphones. Our analysis indicates that digital capacity is positively correlated with higher levels of education and other socio-economic characteristics, such as living in a permanent dwelling (see Table 2).

**TABLE 2. Digital capacity by socio-economic characteristic**

Demographic Indicator	Can Read SMS %	Can Write SMS %	Can Make & Receive Payments %
Has Primary School Education	32*	22*	13*
Lacks Primary School Education	21*	13*	5*
Lives in Cemented House	36*	28*	25*
Lacks Cemented House	26*	16*	6*
Urban/Semi-Urban	28	20	15*
Rural	28	18	7*
Has Smartphone	55*	47*	44*
Has Basic Phone	22*	11*	1*

Note: \*denotes statistically significant correlation, 95% confidence interval.

In spite of these challenges, our survey shows that nearly 30 percent of mothers independently access agent locations to cash out their stipends and a further 5 percent go with other female members. While we do not have information on their previous behavior regarding the use of digital financial services, it is notable that only 21 percent owned a digital wallet before receiving mobile money payments from PESP. Indeed, 71 percent of women who cashed-out independently or with another woman opened a wallet for the first time to receive PESP.<sup>4</sup> This indicates an advancement in terms of direct gender-based access to digital payments through a G2P intervention. On the other hand, a significant proportion of beneficiaries still do not receive payments without a male present. As Figure 3 demonstrates, nearly 50 percent of beneficiary mothers belonging to the cohorts that

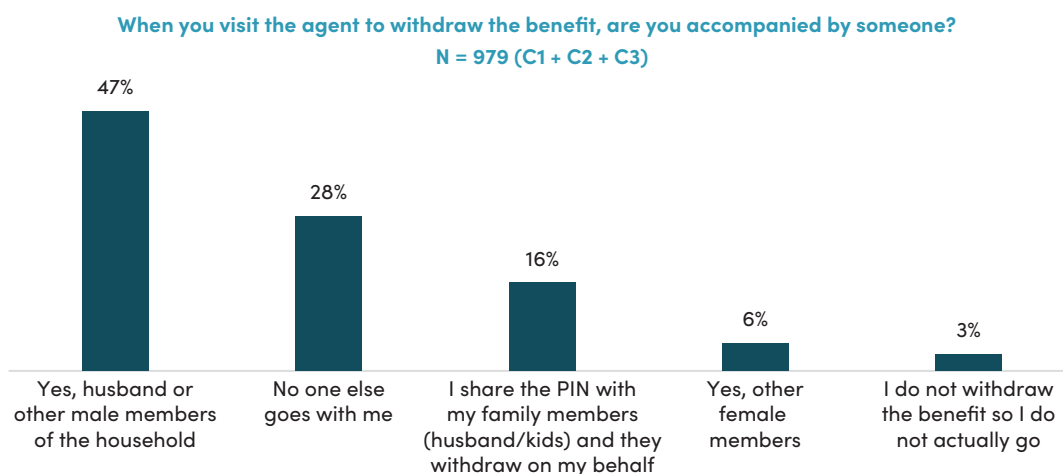
3 Even for those who are able to read text messages in Bangla, writing them is difficult due to the interaction between vowels and consonants and the use of joint consonants in Bangla script. Android’s Bangla keyboard addresses this issue but is only available on compatible smartphones and so is accessible to a limited portion of our sample.

4 Respondents who were accompanied by a male household member, shared their PIN, or do not withdraw benefits were more likely to have opened their first wallet to receive PESP (83%, a statistically significant difference).

experienced digital payments were accompanied by their husbands or other male members of the family to cash out the stipends.

In addition, nearly one in six women reported that they shared PIN numbers with their husbands and others to withdraw on their behalf. As we have seen in other contexts (DRC for example), G2P programs that stipulate the use of PINs to verify beneficiaries can create dependence on family members, especially for women with limited access and capacity to use digital services (Mukherjee et al., forthcoming). In the case of Bangladesh, our analysis indicates a positive correlation between the woman's ability to access cash out points independently and her level of education, social strata (living in cemented house) digital capacity (ownership of smartphones) and digital literacy (ability to read and write text messages). However, in none of these socio-economic categories did a majority of respondents go to cash out independently—the highest proportion was around 40 percent of those who could both read and write SMS.

**FIGURE 3. Access to cash out points for PESP beneficiaries**



Current beneficiaries who began receiving the stipends on or before 2017 have experienced two transitions: first from cash to digital payments, and then a change in the payment service provider from SureCash to Nagad. Such transitions have the potential to significantly disrupt the status quo, leading to adverse perceptions of digital G2P payments as a whole. If transitions are not implemented efficiently, beneficiaries may find it difficult to obtain digital wallets to receive the stipends, creating inconvenience at best and exclusion at worst.

Our survey data indicates that this has not been the case. Both transitions seem to have been smooth and beneficiaries did not report any significant disruption in receiving their stipends. Across Cohorts 1–3, over 90 percent preferred digital payments over cash distribution at school indicating a successful transition to digital wallets initially issued by SureCash. Moreover, among those who experienced a change in the payment service provider, 95 percent reported that the registration process for Nagad wallets was simple with less than one percent saying that the process was difficult.

Qualitative feedback indicates two factors behind the smooth transition between PSPs. First, all SureCash wallets were automatically re-created in Nagad without the need for repeating the e-KYC process, reducing the burden of compliance for the beneficiaries. Second, being a new mobile financial service company, Nagad agents proactively facilitated linking the national ID number as required by the program guidelines and helped obtain birth certificates as required subsequently by the program. One lesson from PESP is that taking a beneficiary centric approach helps make the transition to digital G2P transfers smoother and less painful, which in turn helps beneficiaries adapt to the new methods of accessing transfers and garners support for the overall goal of expanding the digital payments ecosystem. We explore the issue of adaptation in the next section.

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## 4. Adaptation from cash to digital payments

Transitioning from cash to digital payments requires not only access to digital tools but also changes in behavior on the part of the beneficiaries. Instead of a fixed location and a pre-determined schedule for cash disbursement, they have to be aware of when transfers are effected and where to go in order to withdraw the funds. Theoretically, this increases their agency, offering the opportunity to withdraw their benefits conveniently, greater choice across different agent locations or to save part of the transfers for later use as per their needs.

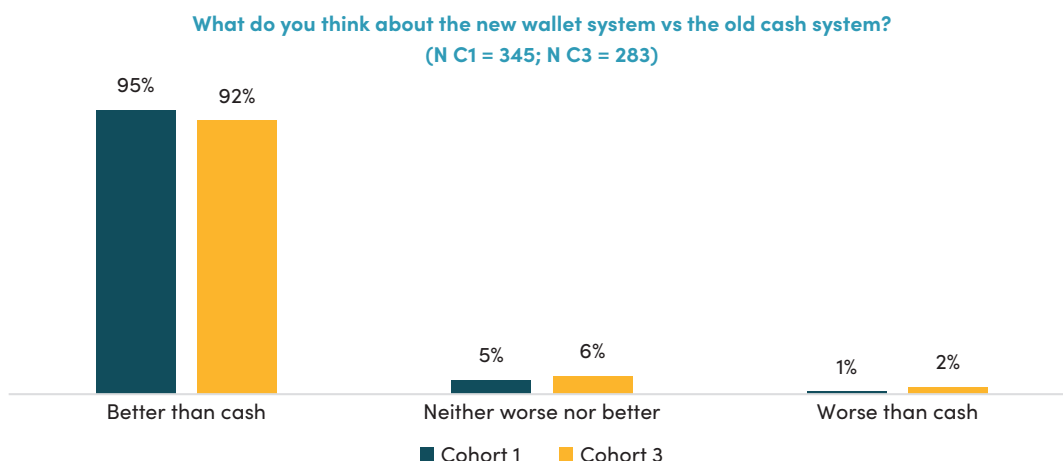
However, this transition can be disruptive especially for those with low capacity and lack of familiarity with digital systems. Governments often undertake policy and administrative reforms mandating the use of digital technology to address inefficiencies in the existing delivery mechanisms without an appreciation of the realities faced by the beneficiaries of G2P programs. This may be reflected in a preference for cash and negative perception of digital payments due to adverse experiences at cash out points, actual or perceived. The best-case scenario is when both the policy design and technology are beneficiary centric, based on the principles of inclusion, choice and empowerment.

Our survey indicates that for those who have experienced both systems (Cohorts 1 and 3), there is an overwhelming preference for digital over cash payments (Figure 4). Nearly 93 percent of the combined sample considered digital wallets to be the better than cash, and another 6 percent were indifferent between the two. The 10 respondents in our sample who preferred cash cited difficulty in remembering PINs and distance to cash out points as the major reason. From a programmatic perspective, our survey data indicates a huge success for the transition from cash to digital payments.

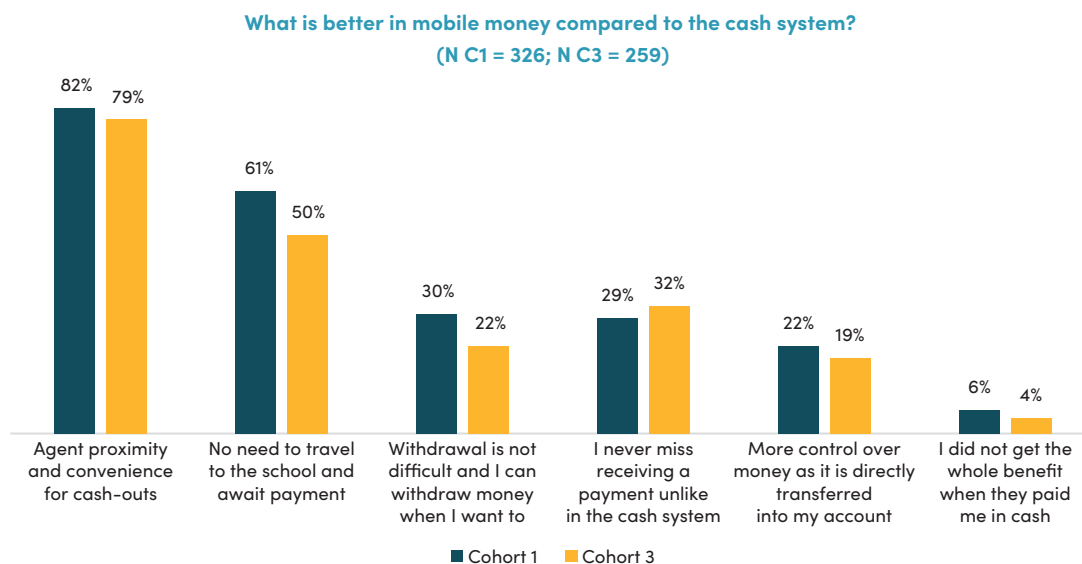
Our questionnaire also probed the reasons why respondents preferred digital payments, whether anything has become worse in the new system even when preferred overall, and what can be made better. The major factors driving the positive response seem to be proximity of agents, reduction in waiting time, convenience, timeliness and control over the stipend (Figure 5). Responding to the

second query, only 15 percent of those who preferred digital wallets thought that anything at all had gotten worse.<sup>5</sup> For this, the two most cited reasons were distance from agents (8%) and difficulty in remembering PIN numbers (7%), a common source of friction in the transition from cash to digital experienced in many other countries.

**FIGURE 4. Preference for digital wallets over cash payments**



**FIGURE 5. Reasons for preferring digital payments over cash**



5 We asked the mirror questions for those who reported a negative perception of digital payments, but the number of responses is insignificant to come to any statistically robust conclusion. This is in contrast to our previous study of digital transformation of PDS foodgrain distribution in Krishna district in India. Respondents had a strong negative opinion of difficulty with biometric authentication at the point of sale, even in cases where the overall perception of the change was positive. See Aadil et al., 2019.



For the third probe, almost 75 percent reported that no change in the system was necessary. For the rest, the most common improvement suggested was to reduce distance to agent points (18%). Only 3 percent mentioned more choice of providers as a potential improvement, although many were already familiar with the largest digital payments provider, bKash.

As observed in other contexts, changes in the mode of payment delivery from cash to digital often leads to friction within the system. This can result in delayed payments or non-payment of entitlements causing inconvenience to beneficiaries and eroding support for the new payment arrangement (Agarwal, 2017). Our survey indicates that this has not been the case for PESP. Given the widespread approval of digital payments compared to cash, PESP's policy of using an assigned PSP to deliver stipends has not imposed substantial costs—direct or indirect—on recipients. However, in response to a query on why they did not use mobile wallets beyond cashing out PESP stipends, 35 percent reported fear of fraud as an inhibiting factor, almost the same proportion who were not comfortable due to their lack of digital literacy and capacity.

As for preference of PSP, almost all current beneficiaries who experienced both SureCash and Nagad preferred the latter or were indifferent between the two (90% and 9% respectively). The primary reasons cited were: proximity of Nagad agents, better quality of service by their agents and availability of other services such as payments, mobile recharge etc.<sup>6</sup> As discussed in the next section, this may have helped to foster an enabling environment for greater adoption of digital financial services more generally.

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## 5. Adoption of digital payments and the digital ecosystem

As noted in Section 1, the COVID-19 pandemic has spurred governments across the world to design and implement new “digital first” social assistance programs, or significantly scale up existing ones, to mitigate the impact of the restrictions on economic activity (Gelb and Mukherjee, 2020; Gentilini et al., 2022). It is clear that transfer programs can be leveraged to increase access to financial accounts and, in this sense, to increase financial inclusion. But as the emergency programs are phased out and governments reassess and refocus on the long-term objectives of efficiency, equity and sustainability, one important question remains unclear; Do beneficiaries who have accounts from and experience with digital G2P payments use them for other purposes? In other words, have access and adaptation resulted in true financial inclusion and digital engagement?

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6 There might be other important reasons from the beneficiary standpoint, for example, better user interface or easy recall of PIN numbers for Nagad wallets, which were not included in our survey questionnaire.

## Ownership of financial accounts

The PESP program has certainly increased financial inclusion, as measured by ownership of bank and mobile money accounts. Table 3 sets out the picture for the beneficiaries and the control group as reported at the time of the survey. With only 21 percent of beneficiaries holding a mobile wallet before receiving PESP digital payments (Table 3, Line 3), the percentage increase in the holding of mobile accounts is about 79 percent. Allowing for the possibility that all beneficiaries holding bank accounts (Table 3, Line 4) acquired them before receiving PESP digital payments, a before-and-after comparison indicates an increase in financial account ownership of at least 61 percent.

This before-and-after comparison abstracts from the general increase in financial inclusion that Bangladesh has experienced over the last several years. We can compare the subject group of PESP beneficiaries with the control group of women who have never received PESP stipends in digital form. Thirty seven percent of this group did not own a mobile wallet (Table 3, Line 2), while 34 percent owned neither a mobile wallet nor a bank account (Table 3, Line 6). This offers an alternative estimate of the effect of PESP in promoting financial inclusion. At the same time, Table 3 suggests that the expansion of Nagad, the payment service provider for PESP, has had a spillover onto financial inclusion for the control. This spillover is considered below.

**TABLE 3. Ownership of financial accounts**

Account Ownership	PESP Recipients (Cohorts 1–3)	Control Group (Cohort 4)
1) Has Mobile Wallet	978 >99%	149 63%
1a) SureCash	705 72%	36 15%
1b) bKash	222 23%	81 34%
1c) Rocket	8 1%	3 1%
1d) Nagad	971 99%	103 44%
1e) Nagad (Only wallet)	218 22%	41 17%
2) Lacks Mobile Wallet	1 <1%	87 37%
3) Had Mobile Wallet pre-Digital PESP	203 21%	NA
4) Has Bank Account	176 18%	42 18%
5) Lacks Bank Account	803 82%	194 82%
6) Lacks both Bank Account and Wallet	1 <1%	80 34%
7) Nagad: Only wallet and no bank account	182 19%	30 13%

## Financial services beyond cashing-out: Diffusion across beneficiary groups

Turning to true financial inclusion—the adoption of financial services beyond cashing-out benefits—our survey data suggests that this has indeed taken place, but in a limited way. Adoption of digital transactions by beneficiaries beyond G2P payments (which is mandated by design) depends on a range of demographic and socio-economic factors, as well as their intrinsic motivation and ability to interact with the wider digital ecosystem. Some of these constraints are program specific but many are not. Rather, they relate to a country’s policies and priorities regarding economic development, poverty alleviation, urbanization, as well as strategic choices regarding the process of digitalization as a whole. As discussed below, the starting point is to understand the nature of the “G2P clientele,” to remove the barriers to greater adoption both at the policy and individual levels, and to create an enabling digital environment for people to use digital transactions as a matter of choice, not compulsion.

Clients of G2P programs differ along many dimensions, including income, education and location. We might expect such differences to influence their motivation for obtaining digital wallets, which also shapes whether they adopt other digital services. To test this proposition for PESP beneficiaries, we segment the sample into three categories:

i) Vanguard: Mothers with mobile wallets before PESP transition

The 20 percent of sampled PESP beneficiaries who had opened a digital wallet before being included in the program. Out of these respondents, 87 percent use their wallets for purposes other than cash out of the stipends, while the remaining 13 percent only use it for PESP-related transactions.

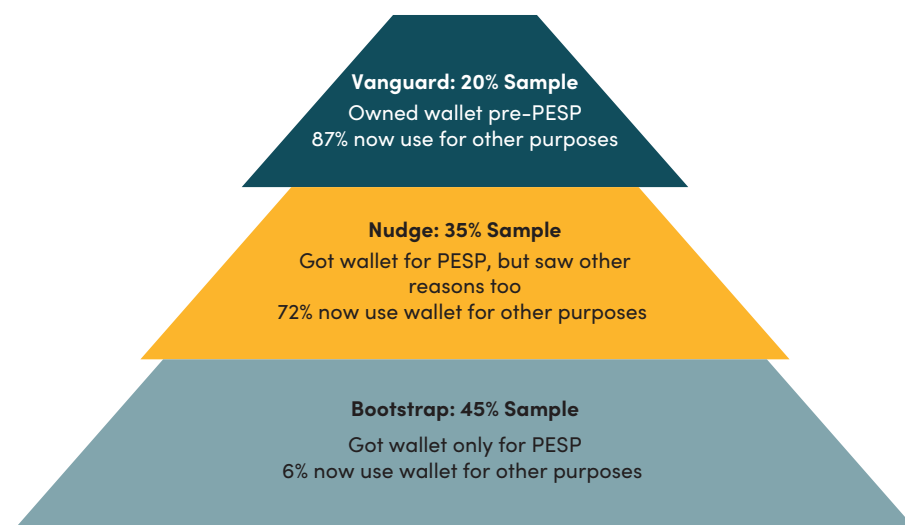
ii) Nudge: Mothers who wanted, but did not have, a mobile wallet before PESP transition

This group is a subset of the 80 percent of mothers who obtained a mobile wallet as a result of the program mandate. Of these, 44 percent (35 percent overall) reported that they had wanted to have a wallet not only for PESP but to use for other purposes as well. This group, therefore, needed a “nudge” to obtain a digital financial account which the PESP mandate provided. In terms of actual use, 72 percent of the nudge group report using the wallet for transactions beyond PESP.

iii) Bootstrap: Mothers who obtained mobile wallet only because of PESP transition

This group consists of the remaining 56 percent (45 percent overall) of those who obtained a wallet through PESP; those who reported having an account for the sole purpose of receiving the PESP stipend. That their only motivation for holding the account was to receive the transfer is reflected in their low reported usage for other transactions (6%). The groupwise chart is presented in Figure 6.

**FIGURE 6. Market segmentation of PESP beneficiaries (% of total beneficiaries)**



This segmentation, based on *ex-post* self-declared motivation, can be further analyzed using socio-economic indicators across the three groups: education, type of housing, location (urban/semi urban), ownership of bank account and smartphone, and the ability to read SMS text messages. These six attributes could be considered as indicators of digital potential. They are shown in Table 4 together with two types of use; use of wallet beyond PESP cash-out and engagement with the wider digital ecosystem such as social media.

**TABLE 4. Financial spillovers by market segmentation**

Indicator of Digital Potential	Bootstrap Got Wallet Only for PESP (45%)	Difference	Nudge Got Wallet for Other Reasons (35%)	Difference	Vanguard Got Wallet before PESP (20%)
1) Has at Least Primary Education	51%	+	65%	+	74%
2) Has a Cement House	17%	-	14%	+	41%
3) Lives in Urban/Semi-Urban Area	32%	+	37%	+	53%
4) Has Bank Account in Own Name	11%	+	24%	-	23%
5) Has a Smartphone	14%	+	24%	+	30%
6) Can Read SMS	19%	+	33%	+	38%
<b>Actual Digital Use</b>					
<b>Uses Wallet Beyond PESP?</b>	<b>6%</b>	<b>+</b>	<b>72%</b>	<b>+</b>	<b>87%</b>
<b>Now Uses Other Digital Services?</b>	<b>12%</b>	<b>+</b>	<b>23%</b>	<b>+</b>	<b>30%</b>

Notes: Highlight indicates a statistically significant difference, 95% confidence level. Sign test- at 95% confidence level, expect between 2.5 and 9.5 positive differences between the 6 indicators of digital potential if there is no progression; observe 10 positives.

From the table, 10 out of the 12 differences between the indicators of potential segments are positive and two are negative. A binomial test against the hypothesis of no progression between groups finds this significant at the 95 percent confidence level. This supports the proposition of a measurable progression of digital potential across the three behavioral segments.<sup>7</sup>

Both indicators of use follow the same progression across the three groups. Almost all of the respondents who reported using their wallet beyond PESP cited use for transfer of funds; the second most common use was savings. It appears that, as for the cashing-out of PESP stipends, many mothers transact in a joint or assisted mode rather than fully autonomously. Those receiving the stipend on a shared household phone were more likely to report using it for other purposes than those receiving it on their own phones. For mothers in households where the husband made all the financial decisions, 79 percent of those receiving PESP on their own phone were in the Bootstrapped group compared with only 39 percent for those receiving PESP on a shared phone. In general, smartphone owners were much less likely to report needing help than those with feature phones.

Overall, of all mothers receiving PESP, 28 percent did not previously have digital wallets but now report using them for purposes beyond cashing out transfers.<sup>8</sup> For beneficiaries who obtained a wallet due to PESP, the reported motivation does not fully translate into use. In that case, we would have expected 100 percent of the nudge group to have used their PESP wallet for other transactions while none of the bootstrap group would have done so. However, we find that almost 30 percent of the former did not report such activity but 6 percent of the bootstrap group did. In terms of spillover effect, therefore, obtaining a PESP wallet incentivized at least 6 percent of mothers who had never considered obtaining a wallet to use other forms of digital transactions. On the other hand, nearly 30 percent of mothers in the nudge group may have experienced some constraints to realizing their objective of using their wallets beyond PESP. The reasons for this include factors such as lack of trust in digital systems and require further investigation.

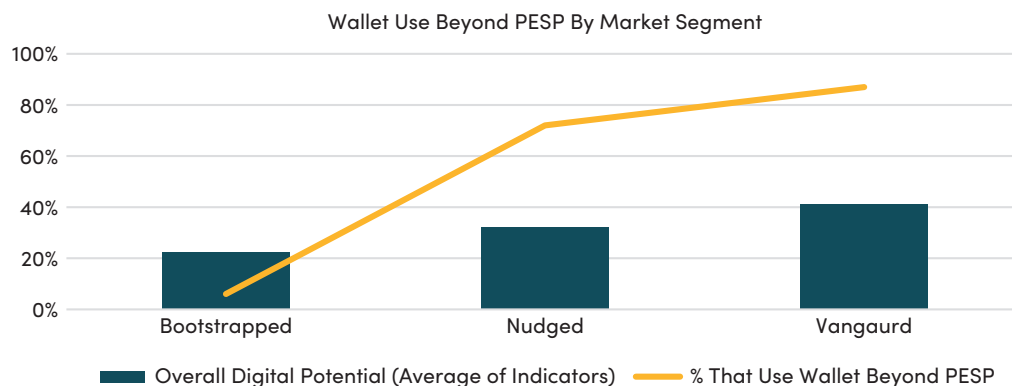
The use gap between groups is smaller for other digital services, such as social media, messaging and online shopping. This reflects the overall low level of engagement with the wider digital ecosystem by PESP beneficiaries, and women in the lower socio-economic strata of the population more generally. However, the gap between the bootstrap and nudge groups is still statistically significant; taking the average of the six digital potential indicators as an overall measure, Figure 7 contrasts the steady increase in the measure with the sharper jump in wallet use between the bootstrap and nudge groups. Because of correlations between these indicators, we are not able to break down the causal effects further, for example to understand whether an improvement in one element, for example, housing, is associated particularly strongly with use of financial services beyond the delivery of benefits. However, together, the indicators are a useful predictor of use of financial instruments and digital communications.

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7 In addition, seven positive differences are statistically significant (Chi-square tests) while none of the negative ones are.

8 Seventy two percent of the nudge group and six percent of the bootstrap group as outlined in Table 4.

**FIGURE 7. Segment-wise change in the use of digital wallets beyond PESP**



### Spillover onto competition in financial markets

Given the nationwide scope and scale of a program like PESP, a move towards digital payments could have significant repercussions on the overall digital financial system of the country depending on how it is implemented. PESP did not contract with the dominant mobile money provider to deliver stipends but with newer entrants to the mobile financial services market—first SureCash and then Nagad.<sup>9</sup>

Although it was only launched in March 2019, Nagad was already the most widely held financial account for the control group. Forty four percent held its wallet, more than those holding the wallets of bKash, Bangladesh’s dominant mobile money provider (Table 3). Most of its customers also held other accounts, but at 17 percent, the share of the control group that held only a Nagad account was appreciable. While the control snapshot taken at the time of the survey does not represent a true comparison against the counterfactual of financial inclusion had Nagad not entered the market, it does suggest that its entry has both increased financial competition and boosted financial inclusion. As described in Section 4, our survey findings indicate a high level of satisfaction with Nagad’s services among those receiving PESP stipends. Only 3 percent of respondents would prefer to have more choice of providers, including bKash, to receive their transfers.

These conclusions are supported by data on the wider payment ecosystem. While PESP has formed the core of its initial roll-out and customer acquisitions strategy, Nagad has expanded far beyond this base. At 58 million, it claims a number of accounts comparable to that of bKash (Nagad). While the volume of payments processed by Nagad is far lower than that processed by bKash, it is around 50 times larger than the payments generated directly by PESP stipends.

However, whether the policy choice of a designated PSP for a large G2P program like PESP will stimulate market competition over the long run is an open question, one that is of interest not

<sup>9</sup> There is no monopoly on G2P payment services: other G2P programs, such as the Secondary School Stipend and the Freedom Fighters Allowance are paid through other PSP’s.

only for Bangladesh but also other countries undergoing the cash-to-digital transition for social assistance transfers. Given the dynamic nature of the mobile financial services market, including the evolution of the regulatory framework and the prospective entry of digital banks (Nagad itself has obtained approval for a license), it is difficult to predict whether the “Nagad effect” will continue in the future or not. But as of now, our survey results indicate that it has resulted in a significant gain in digital financial inclusion and increased market competition in digital financial services. PESP’s design and implementation arrangements have had a role to play in both.

## 6. Women’s empowerment and control over PESP stipends

As noted in Section 1, evidence to support the proposition that digital G2P programs targeted at women beneficiaries improve their empowerment is limited (Garz et al., 2020). Empowerment itself is a complex concept conditioned on socio-economic processes and cultural norms. It is hard to observe the ‘treatment effect’ of digital G2P transfers on women’s intra-household bargaining power through proxy indicators, especially decision-making power over financial matters in general and over the use of stipends in particular. Also, while PESP has school attendance and performance as conditions for receiving benefits, the stipend can be spent for any purpose. We have, therefore, taken a direct approach by asking women whether their lived experience indicates an improvement in their agency, ability and influence over such decisions or not.

On financial decisions within the household, a significant majority of mothers reported taking decisions jointly with male members (65%) while only 13 percent did so independently. However, responses were very different when asked about decisions on PESP stipends. Nearly one-third of mothers took those decisions independently, while less than 10 percent reported the male member being the decision-making authority on stipends, compared to over 20 percent for general financial matters. Joint decision-making still remains the most common arrangement for stipends, less so than for the overall household budget (Table 5).

**TABLE 5. Intra-household financial decision-making percent [N = 979]**

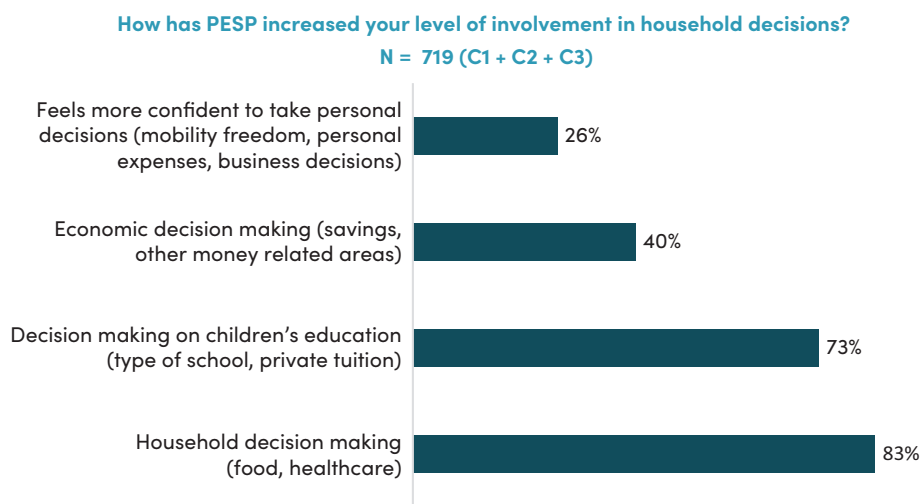
Decision	Financial Decisions (A)	PESP Stipend (B)	Difference (B – A)
Woman	13	33	(+) 20
Man	22	10	(-) 12
Joint	65	57	(-) 8
Total	100	100	

The results in Table 5 are in line with international evidence on conditional cash transfer programs which noted similar duality within the household (reported in Section 1). It is likely that this type of behavior conforms to existing gender and social norms that assign different decision-making

authority over the general budget on the one hand, and areas that fall under the purview of women (nutrition, education and health) on the other.

Recognizing the constraints, we tried to investigate further whether the PESP stipends (the “treatment”) have made a difference to women’s perception of increased involvement in household decision making. Our results are encouraging. Almost three-quarters of women reported an increase in their role overall. As expected, this has been most significant for those decisions that fall directly in their domain, family nutrition and children’s schooling (83% and 74% respectively, see Figure 8). However, significant proportions of respondents also mentioned an increase in their decision-making role vis-à-vis household savings (40%), and more importantly, greater self-confidence in taking decisions on personal consumption, travel and business-related expenses (26%). This provides beneficiary level evidence that PESP transfers have improved women’s economic empowerment, defined as the “the ability to act on their own preferences” (Kabeer, 1999).

**FIGURE 8. Reported influence of PESP stipends on mother’s economic empowerment**



## Empowerment and digital tools

The literature on gender-responsive cash transfer programs also alludes to the role of (perceived or actual) control over the resources as a means of enhancing and sustaining their bargaining power (Kabeer, 1997). In the case of PESP, we can compare whether the transition from cash to digital is reported to have been able to transform this power dynamic, and if so, how. Our survey data shows that almost 75 percent of respondents report a greater degree of control if the stipend is transferred digitally to their account (Figure 9). Very few reported the opposite, and in all of these cases husbands withdrew the money for them.

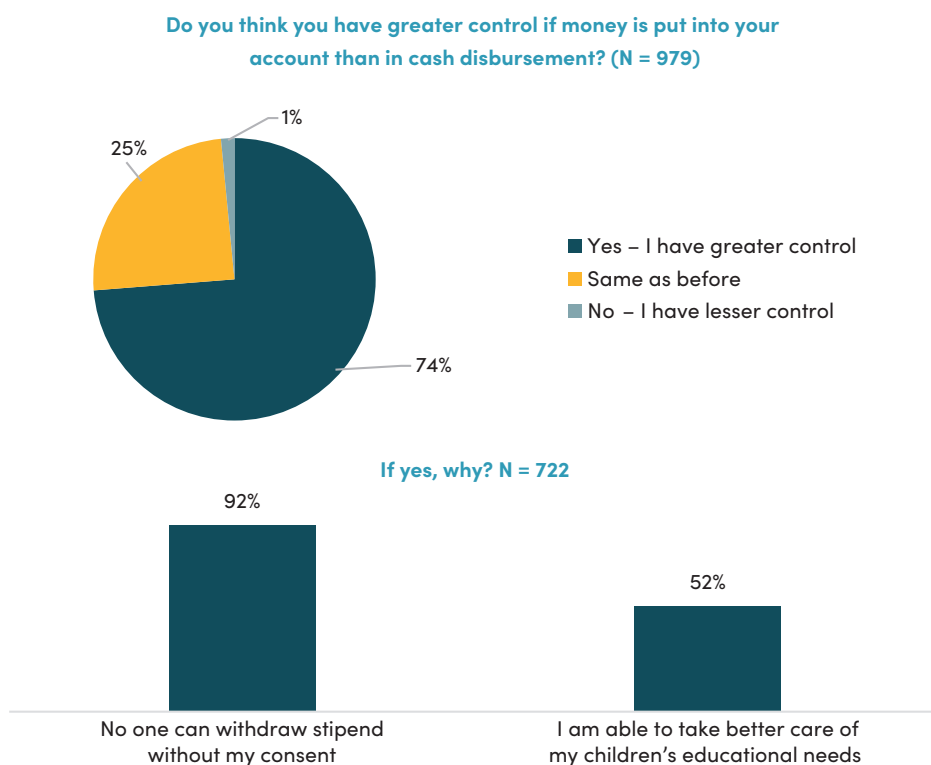
As to the reasons, of those reporting a greater degree of control, over 90 percent cited that nobody can cash out without their consent (Figure 9). Considering the results presented in Figure 3, this



is surprising since over two-thirds of mothers do not cash out independently; they are either accompanied by a male member or they share their PIN with them to withdraw on their behalf.

More importantly, it seems that PESP beneficiaries make a distinction between the physical act of withdrawal, and the control they exercise by providing their 'consent' to do so. If this is the case, the rules of withdrawal of digital G2P payments add another channel through which women can exercise their power over resources, even if they lack the access to the tools, face restrictive social norms or lack the capacity to independently interact with the new system.

**FIGURE 9. Perception of control over digital payments vis-à-vis cash**



Further evidence on the importance of access to digital channels comes from comparing decision-making power for mothers who receive stipends on their own mobile phones (74 percent of the sample) relative to those who receive them on household (joint) phones or phones belonging to their husband. For the first group, the ratio between those reporting that they decide on the use of the stipend to those who report that the decision is made by their husband is 1.49. For the second group it is 0.71, and for the third it is only 0.26. While the device on which the stipend is received does not appear to determine overall views on the program, it strongly affects perceptions of control over the resources it provides.

In summary, our survey provides beneficiary-level evidence to support the claim that digital G2P payments can improve women's empowerment, as reported by beneficiaries, at least in its economic

dimension. We recognize that the survey is focused narrowly on a particular program design, implementation mechanism and decision-making within households and that it does not address any possible impact of such transfers on the broader processes, particularly change in social and cultural norms, that have a significant bearing on women's empowerment.

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## 7. Conclusion

The experience of PESP provides a significant example of how digital payments can be used to deliver G2P transfers at scale. It addresses many of the complexities and challenges that have dogged the transition from cash to digital modes of G2P payments as well as the global scale up of “digital first” social assistance to mitigate the impact of COVID-19. As such, it provides a playbook and a roadmap for countries that intend to modernize their existing G2P payments and institute new ones that leverage digital technologies to improve access to financial accounts.

PESP's transition from cash to digital payments was relatively smooth. In terms of direct before-after comparison, over 6 million additional women (out of 10 million served) have access to a digitally enabled financial account as a result of the transition. Indirectly, about 13 percent of women with socio-economic characteristics similar to PESP beneficiaries have been added to the share of those with a financial account because of the rapid growth of the PESP payment provider. The impact of the G2P transition has been significant both for beneficiaries and women more generally.

As in the previous study conducted in 2019, PESP beneficiaries overwhelmingly support the transition to digital payments. While a modest number consider that cash-out points are too far away, they are in general, satisfied with the convenience of making withdrawals. They also think that they have greater control over PESP funds than other household funds, and that their degree of control is boosted by the shift to digital payment, particularly for those who have their own phone. Taking account of the views of the beneficiaries themselves, our survey provides support to the proposition that digital G2P payments have contributed to an improvement in women's sense of empowerment and their ability to make independent decisions on matters relating to household finances and specifically, for their children. The results confirm the importance of access to digital channels, including the ability to receive payments on the beneficiary's own phone rather than one jointly owned by a household or by the husband.

Beyond convenience, one of the main arguments for making payments through financial accounts is that it will enable recipients to transition from beneficiaries to clients for a wider range of financial services. Evidence on this process is still thin, and some cases suggest that the spillovers into “true financial inclusion” are limited. For PESP, the results suggest that digital payments provide an entry point into a process of diffusion of financial use across beneficiaries. These are not homogeneous; some are better educated, have smartphones, or live in urban areas where there is more likely to be a payments ecosystem. Such attributes make it more likely that a mother will transition to

the wider use of financial services. Indeed, some 28 percent of all PESP mothers in the sample have transitioned from not having wallets to using digital financial services. This is a significant achievement, even though one can hope for improvement. The results of this study are similar to the diffusion patterns found in the recent case of beneficiaries of India's massive PMGKY program (Gelb et al., 2022).

The study provides evidence of severe constraints to using digital financial services autonomously; few of the mothers are able to read SMS and even fewer to write it. Most cannot transact independently on mobiles, and it is more difficult to build trust in a system if people cannot understand it. This constraint appears to be more binding than in the Indian study, and is certainly more so than in Kenya, where an ongoing study of the Inua Jamii program finds that almost all recipients can read and write SMS—which is made easier by Swahili being a phonetic language written in the Roman alphabet. Extra effort will be needed to strengthen women's capability to use mobile devices independently if Bangladesh is to transition to a digital society.

Our analysis suggests that policy choices in the area of payments can have a role in fostering competition in the market for digital financial services as a whole. PESP's strategy of delivering benefits through a new mobile money provider has incentivized a challenge to the established incumbent. Judging by our survey responses, we do not find evidence that this arrangement is disadvantageous to PESP beneficiaries—most seem to be satisfied with the convenience and quality of the service that the assigned PSP provides them. It remains to be seen how Bangladesh's market for digital financial services evolves over time. But for the present, the paradox is that, while PESP beneficiaries do not have choice over their payments service provider, the program has, indirectly, increased choice over providers of digital financial services for the country as a whole.

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## Annex 1. Sample summary statistics

Demographic Indicator	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Sample Total
<b>Age</b>					
Under 25 Years Old	3 1%	15 4%	2 1%	32 14%	52 4%
25–34 Years Old	180 52%	229 66%	131 46%	117 50%	657 54%
35–44 Years Old	141 41%	92 26%	134 47%	81 34%	448 37%
45–49 Years Old	21 6%	12 4%	19 7%	6 3%	58 5%
<b>Educational Attainment</b>					
None	52 15%	40 12%	41 14%	34 14%	167 14%
Less than Primary School	95 28%	75 22%	86 30%	65 28%	321 26%
Primary School	122 35%	140 40%	95 33%	93 39%	450 37%
High School or Higher	76 22%	93 27%	64 22%	44 19%	277 23%
<b>Location Type</b>					
Rural	217 63%	218 63%	172 60%	147 62%	754 62%
Semi-Urban	67 19%	69 20%	59 21%	47 20%	242 20%
Urban	61 18%	61 18%	55 19%	42 18%	219 18%
<b>Dwelling Type</b>					
None	4 1%	7 2%	1 <1%	5 2%	17 1%
Thatched	145 42%	139 40%	111 39%	98 42%	493 41%
Semi-Thatched	127 37%	137 39%	102 36%	86 36%	452 37%
Cemented	69 20%	65 19%	72 25%	47 20%	253 21%
<b>Household Size</b>					
2–4 Members	186 54%	208 60%	134 47%	125 53%	653 54%
5–6 Members	135 39%	125 36%	123 43%	98 42%	481 40%
7 or More Members	24 7%	15 4%	29 10%	13 6%	81 7%

Demographic Indicator	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Sample Total
<b>Phone Ownership</b>					
None/Shares Family Phone	14 4%	8 2%	8 3%	12 5%	42 4%
Owens Basic Phone	265 77%	273 79%	206 72%	178 75%	922 76%
Owens Smartphone	66 19%	67 19%	72 25%	46 20%	251 21%
<b>Sample Total</b>	<b>345 28%</b>	<b>348 29%</b>	<b>286 24%</b>	<b>236 19%</b>	<b>1,215 100%</b>

Note: Totals may exceed 100% due to rounding.