

Inclusive E-Government Services in Ghana: Enhancing Women's Access and Usage

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GSMA

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The Central Insights Unit (CIU) sits at the core of GSMA Mobile for Development (M4D) and produces in-depth research on the role and impact of mobile and digital technologies in advancing sustainable and inclusive development. The CIU engages with public and private sector practitioners to generate unique insights and analysis on emerging innovations in technology for development. Through our insights, we support international donors to build expertise and capacity as they seek to implement digitisation initiatives in low-and middle-income countries through partnerships within the digital ecosystem.

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Acronyms and abbreviations

B2G	Business-to-Government	MNOs	Mobile Network Operators
CICO	Cash-in Cash-out	MoCD	The Ministry of Communications and Digitalisation
ECG	Electricity Company of Ghana	MoFEP	Ministry of Finance and Economic Planning
G2B	Government-to-Business	MoGCSP	Ministry of Gender, Children and Social Protection
G2G	Government-to-Government	MSMEs	Micro, Small and Medium Enterprises
G2P	Government-to-Person	NCCE	National Commission for Civic Education
GCNET	Global Context Networks	NDPC	The National Development Planning Commission
GHIPSS	The Ghana Interbank Payment and Settlement System	NGOs	Non-Government Organisations
GIFEC	Ghana Investment Fund for Electronic Communication	NHIS	The National Health Insurance Scheme
GIP	GHIPPS Instant Pay	NITA	National Information Technology Agency
ICT	Information, Communications and Technology	P2G	Person-to-Government
ISEWE	ICT Skills for Entrepreneurial Women Empowerment	P2P	Person-to-Person
LEAP	Livelihood Empowerment Against Poverty	PIN	Personal Identification Number
LMICs	Low- and Middle-Income Countries	SDGs	Sustainable Development Goals
MISTT	Mobile Internet Skills Training Toolkit	SMS	Short Messaging Service
MMI	Mobile Money Interoperability	USSD	Unstructured Supplementary Service Data

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Executive summary



Ghana's national digital agenda seeks to promote an inclusive digital society

The government of Ghana is committed to strengthening digital transformation in the country. The introduction of a draft digital economy policy seeks to serve as a blueprint for achieving the five main objectives of universal broadband access for all, enhanced digital skills, efficient public service delivery through a user-centric digital government model, increased growth opportunities for local technology innovators, and faster adoption and use cases for emerging technologies.

Investments have been made to advance these goals. One example is the Ghana Investment Fund for Electronic Communications, which seeks to expand broadband connectivity to 2,000 rural communities (with a target of ensuring that at least two-fifths of beneficiaries are women), and increase national mobile coverage of the population to 95% by the end of 2023.

The high cost of mobile devices and inadequate digital skills contribute to the digital gender divide

Although the digital gender gap is shrinking in Ghana, and it is less significant than in most low- and middle-income countries (LMICs), Ghanaian women are still less likely than men to own internet-enabled devices, use the internet, access government e-services, or make digital payments.¹ The gender gap poses a challenge for Ghana's digital inclusion goals. Affordability barriers and inadequate digital skills are the two key barriers to closing this divide. The average earned income of women in Ghana is less than a third of their male counterparts.²

Subsidies and innovative financing schemes are required to help disadvantaged women in Ghana, especially those in the Northern region to access

smartphones and digital services. Industry-specific taxes and levies imposed on mobile operators and users further contribute to the high cost of mobile transactions. A review of the cost-benefits of these taxes is important.

Meanwhile, digital literacy initiatives targeting women, especially informal business owners, are largely inadequate. A draft Gender in Education Policy is underway and should be used as a vehicle for faster results in creating innovative digital training content and programmes for women.

E-government services are more widely available, but low awareness prevents large-scale adoption

Through the eTransform Ghana Project, the government of Ghana has been working towards increasing the availability of e-government services and better serving the public. Several initiatives and platforms have been introduced, such as the Ghana.GOV website (a platform hosting most of the e-services), mobile membership renewals for beneficiaries of the National Health Insurance Scheme (NHIS), digital payments of cash transfer interventions, and a national digital identification card system.

Although the mobile NHIS service is popular among women, other e-government services suffer from low awareness and use. For instance, less than 7% of women surveyed by GSMA know about the Ghana.GOV platform or business license e-registration, and less than 1% use both regularly.

To boost adoption, it is paramount that the government and development partners prioritise awareness campaigns of e-government services. The use of popular characters from radio and TV shows to promote e-government services has proven to be successful at promoting specifically the time and cost-saving benefits of digital services.

1. Jeffrie, N. (2023). [The Mobile Gender Gap Report 2023](#). GSMA.

2. World Economic Forum (2022). [Global Gender Gap Report 2022 Insight Report](#).

Despite growing adoption of digital payments enabled by mobile money, many payments for government services and fees are still not digitised

Ghana has a mature mobile money industry, with the potential for adoption of e-government services and payments. Two-thirds of the female population are financially included through non-bank (other formal) financial access points, with mobile money being the primary channel.³ However, women’s mobile money accounts are less frequently used than men’s due to perceived high transaction costs, safety and security concerns, and insufficient knowledge on how to

use mobile money without assistance from family or agents.^{4, 5}

The majority of the Ghanaian women surveyed for this report do not use digital channels for person-to-government (P2G) and business-to-government (B2G) payments. In the Northern region, less than one in five women (16%) have made a digital P2G payment, compared to an average usage rate of 42% for male respondents in the country.⁶ The 1% levy on mobile transactions is a major indirect impediment to furthering the use of mobile money for P2G and B2G payments by the overall population, and especially by women.⁷

Cooperation between public and private sector actors is needed to address demand and supply side barriers affecting women’s adoption of e-government services

Demand-side	Supply-side
<ul style="list-style-type: none"> ➔ Insufficient knowledge and skills to access and use digital solutions ➔ Inadequate step-by-step guides and real-time support on how to use e-government services ➔ Limited access to or lack of ownership of smart devices ➔ Scepticism over the benefits of e-services ➔ Distrust and concern for online safety against scammers 	<ul style="list-style-type: none"> ➔ Lack of end-to-end solutions, thereby requiring manual or physical interventions ➔ Not all e-government platforms are mobile-friendly ➔ Remote locations experience slow broadband network connection and poor coverage ➔ Frequent downtime of e-government platforms

E-government modules should be embedded in digital literacy programmes, including mobile phone-based training, to increase knowledge on how to use e-government services. These programmes can also include extensive information in local languages on the measures users can take to reduce the risks of online fraud.

In addition, e-government service platforms should be designed with a human-centred approach and have real-time support mechanisms for users, such as visual flow charts and live chat support.⁸ E-government service providers must make digital processes more appealing by providing user-friendly, reliable and interactive end-to-end e-services, and incentivising users with faster processing times and reduced fees where possible.

3. Government of Ghana Ministry of Finance (2021). [The Official Ghana Demand Side Survey 2021](#).
 4. Raithatha, R. et al, (2023). [The State of the Industry Report on Mobile Money 2023](#). GSMA.
 5. GSMA field survey in Ghana, 2023.
 6. *Ibid*.
 7. Although mobile money payments to the government are exempted from the levy, the levy discourages frequent use of mobile money services in general, thereby having a knock-on effect on the adoption of P2G and B2G payments.
 8. This can be done in partnership with private sector technology firms and donor organisations.

1. Introduction



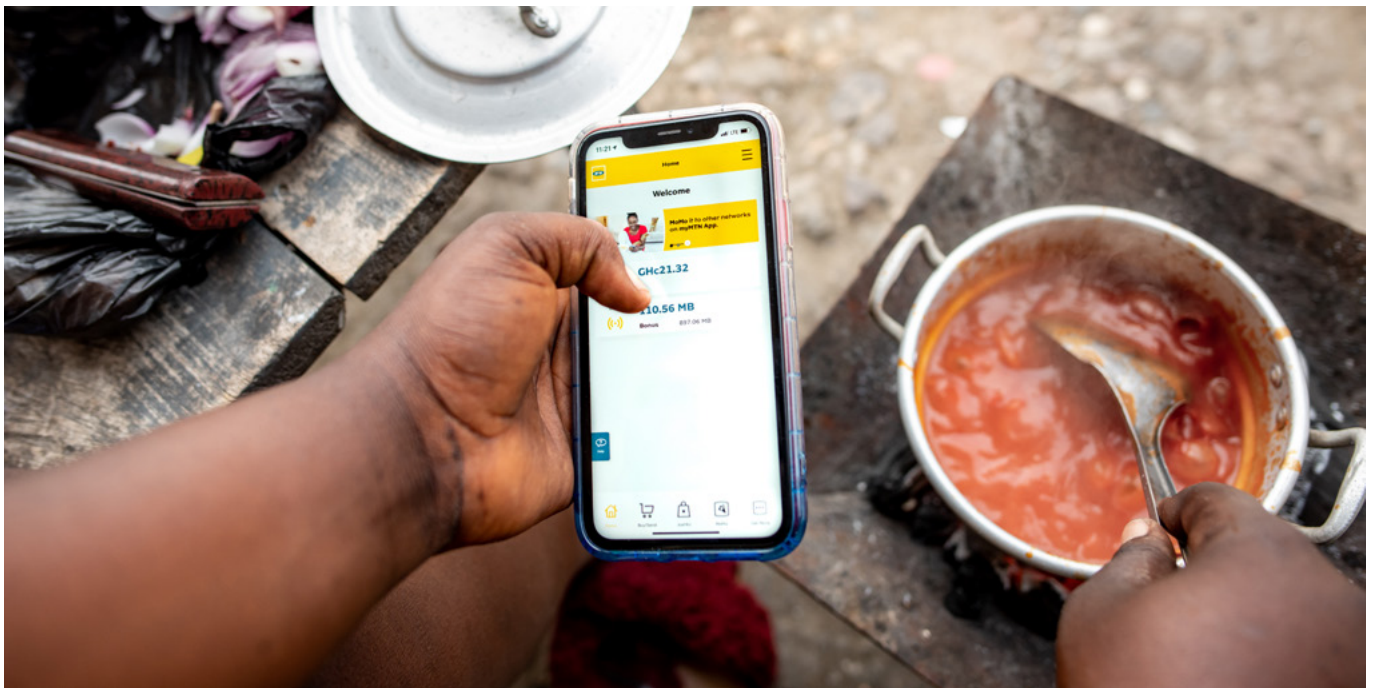
The primary purpose of Ghana's national e-government initiative is to improve public service delivery. E-services, however, are always at risk of serving the needs of some users and neglecting the needs of others, thereby failing to engage them. National e-government initiatives must consider the different realities and needs of vulnerable and disadvantaged groups. Women are more likely than men to have lower levels of education, less financial independence or a lower income and limited access to internet-enabled devices. Gender inclusion in e-government systems, therefore, requires the institutionalisation of a strategic approach to gender equality and the integration of a gendered perspective into design and implementation.⁹

Digitalisation is changing the way public services are delivered, with the introduction of [Ghana.GOV](#) – a digital service and revenue collection web-based platform that serves as a single access point to e-government services available in the country. Ghana is eager to accelerate the digitisation of all government-related receipts and payments, increase revenue generation and transparency, discourage corruption, promote greater efficiency and convenience, and formalise the economy. Despite these ambitious targets, the benefits of easy and efficient access to basic services via digital channels continue to be out of reach for segments of the population who are digitally excluded.

The steady growth of Ghana's digital financial services ecosystem presents an opportunity to use mobile money to broaden access to e-government services, potentially making these services far more reaching and inclusive, with positive benefits for financial inclusion and the empowerment of lower-income households.

Driven by its progressive policy and regulatory reforms, Ghana has one of the most mature mobile money markets in the world, which has improved financial inclusion for its people.¹⁰ As the gender gap in mobile phone and mobile money account ownership and usage shrinks, this can have a significant positive impact on women. For example, women-led households can gain greater and easier access to person-to-government (P2G) payments for healthcare services, and women-led microenterprises can benefit from seamless business payments for government-issued licences or fees.

However, women often face challenges when accessing mobile internet services or utilising the full suite of financial solutions that mobile money provides, beyond core services such as airtime top-up or person-to-person (P2P) money transfers.¹¹ A deeper understanding of these barriers and their implications for inclusive digital public services is therefore necessary.



9. E-Government for Women's Empowerment in Asia and the Pacific (2016). [Unit 5.2. A framework for a whole-of-e-government assessment on gender inclusion](#). UN ESCAP.

10. GSMA (2022). [Mobile Money Metrics: Prevalence Index](#).

11. Lowe, C. et al (2022). [Exploring women's use of mobile money in Ghana: The user journey, entrepreneurs and the impact of COVID-19](#). GSMA.

Research objectives and methodology

This report assesses the extent to which women as economic agents or lead contributors to household incomes in Ghana access and use digital government services via mobile platforms (especially mobile money) for business, family

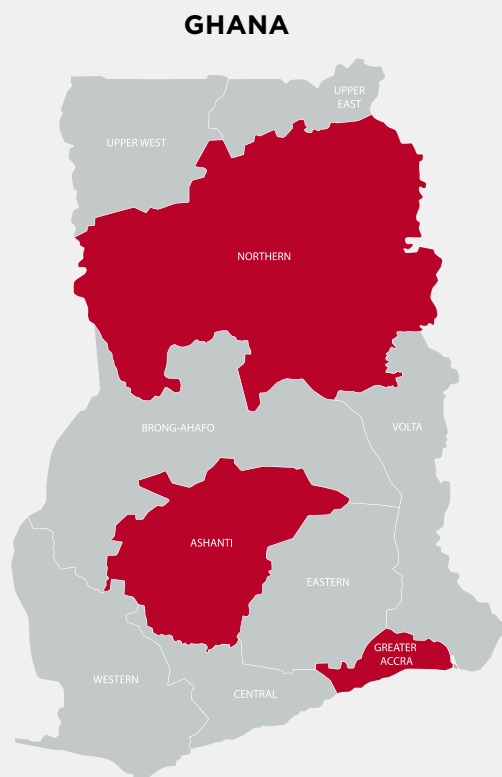
and personal needs, and the opportunities available to foster inclusive delivery of public services for women's financial inclusion and economic empowerment.

Specifically, the study seeks to:

1. Highlight the role of government in Ghana's digital transformation agenda.
2. Provide a landscape overview of the digital gender divide in the country.
3. Investigate the adoption of e-government services to understand barriers to access and usage.
4. Provide an overview of the state of digital financial inclusion in Ghana, bringing to light current challenges and levels of exclusion of women.
5. Identify opportunities for leveraging mobile technologies to facilitate access to digital public services for women in Ghana to improve their wellbeing. In addition, assess the extent to which women in Ghana use mobile money to access public services, such as payments for healthcare and education services, social protection receipts and taxation.
6. Recommend strategies that best promote gender-sensitive digital inclusion policies and initiatives to support women in using mobile money for public sector services.

To accomplish these objectives, we conducted a six-month study, adopting a mixed method approach that incorporated an extensive literature review and field surveys in the Greater Accra, Ashanti and Northern regions of Ghana, as well as focus group consultations with women in various roles and contexts (e.g., by locality or region, income source or business size) and semi-structured interviews with actors involved in Ghana's digital ecosystem.¹² Data collected was disaggregated to provide a nuanced understanding of women's use of online public (e-government) services and mobile money.

The qualitative phase of the data collection and analysis provides further context and explanation for the quantitative results, as well as the investigation of outlier cases. Further details of sample size, stakeholders consulted and focus group discussion participants are presented in Annex 4.



This study may serve as a guide to inform future interventions for gender-sensitive digital transformation in Ghana, in line with the

government's priorities and building on previous and ongoing technology innovation projects in the country.

12. Information gathering was conducted between January and May 2023.

2. National digital agenda



Promoting digital transformation to grow a country's digital economy can help accelerate progress towards achieving the United Nation's sustainable development goals (SDGs). Adoption of digital technologies can unlock opportunities for poor and vulnerable groups to gain access to and benefit from economic resources and basic services, empower women and girls towards greater gender equality, develop resilient infrastructure, and foster innovation.¹³ Digitalisation can however contribute to widening socioeconomic gaps for those who lack connectivity, affordable devices or requisite skills to benefit from digital services. It is therefore critical for national governments to have a clear vision and action plan to shape digital policy and frameworks that optimise the benefits that digital technologies can deliver for all.¹⁴

Ghana's digital agenda is supported by various policies highlighting the importance of using digital technologies to transform public sector operations and processes, with the objective of making the government more transparent, accountable and open to citizens¹⁵ (refer to Annex 5 for a list of some relevant policies). These policies seek to promote an inclusive digital society so every segment of the population, regardless of location or status, has access to digital services and can contribute to and benefit from a mature digital economy.

The office of the Vice President, alongside the Ministry of Communications and Digitisation (MoCD), has been charged with the responsibility of leading the country's digital agenda and the implementation of associated initiatives. These initiatives include championing the goal of nationwide digital inclusion and progress monitoring. The National Information Technology Agency (NITA), an agency under MoCD, acts as the national e-government implementation and coordination body. The National Development Planning Commission (NDPC) also supports Ghana's digital transformation agenda by facilitating coordination among all responsible ministries and agencies.

In 2023, the MoCD submitted a draft Digital Economy Policy to the cabinet for approval in a bid to strengthen the government's efforts and provide more comprehensive and coordinated strategic digital policy planning and implementation.¹⁶ The draft policy hinges on enhancing five key pillars:¹⁷

- **Universal access and connectivity:** *Continue* efforts to extend last-mile connectivity for unserved and underserved areas, as well as consolidate existing backbone network infrastructure.
- **Digital skills:** *Empower* the workforce so they can productively participate in the fast-changing digital economy. Emphasis will be on capacity, capability, research and development to harness novel areas of opportunity.
- **Digital entrepreneurship and innovation:** *Enable* the local ecosystem of tech innovators to provide solutions that address local challenges across priority sectors, supporting Ghana's ambition to be a regional digital hub and support job creation.
- **Digital government:** *Establish* an agile and user-centric digital government model. Ensure that digital service delivery by the government is underpinned by efficiency, security, trust and responsiveness. Support standardised enterprise architecture and interoperable systems for efficient, transparent service delivery. Ensure that e-government can also contribute to improved revenue generation.
- **Data and emerging technologies:** *Harness* the new and fast-growing national data assets with adequate frameworks to protect and derive value, and provide an enabling regulatory environment for the adoption of new technologies that drive national goals.

To achieve these objectives, the government recently embarked on a major nationwide digital transformation intervention through its Ghana Digital Acceleration Project 2022 - 2027 (supported by funding from the World Bank), which aims to expand access to broadband infrastructure - especially in rural communities, promote digital inclusion for women and persons with disabilities, enhance the efficiency and experience of selected digital public services, and strengthen the digital innovation ecosystem. The main project objectives are highlighted in Table 1.

13. ITU (2021). [Digital technologies to achieve the UN SDGs](#).

14. OECD (2019). "[Developing a digital transformation strategy](#)" in *Going Digital: Shaping Policies, Improving Lives*. OECD Publishing, Paris.

15. Republic of Ghana, NDPC (2017). [Long-term National Development Plan of Ghana \(2018 to 2057\)](#).

16. GhanaWeb (2023). [Digital Economy Policy submitted to Cabinet for approval - NITA](#). (accessed 26 June 2023).

17. Essah, N.K., (2022). [Digital Economy, How It's Going and Ghana's Digital Economy Policy](#). Public Sector Global.

Table 1
Ghana Digital Acceleration Project objectives

S/N	Indicator	Target (2027)
1	People provided with new or enhanced access to broadband internet	6 million (40% female)
2	Newly connected publicly accessible broadband access points in lagging rural areas	120
3	Digital service transactions completed through Ghana.GOV and Citizen App	1.5 million/year
4	Number of new/re-engineered transactional services digitised and available to citizens and businesses for a user-friendly and citizen-centric digital public service delivery ¹⁸	15
5	User satisfaction with the new public digital services hosted on the Ghana.GOV portal (% of users)	85%
6	Number of women—excluding civil servants—to receive digital skills training	2,800

Source: Ghana Digital Acceleration Project Implementation Report¹⁹

The government of Ghana, through its Ghana Investment Fund for Electronic Communications (GIFEC), is also undertaking a rural connectivity programme with the goal to extend mobile voice and data coverage to 2,016 rural communities (approximately 3.4 million residents) and increase

national mobile coverage of the population to 95% by the end of 2023.²⁰ The project is funded by the government of Ghana and supported by private sector and development partners.²¹ At the time of this report, about 50% of the programme objectives have been completed.²²

18. At least 50% of these services will also be accessible to persons with disabilities.

19. The World Bank (2023). [Ghana Digital Acceleration Project \(P176126\) Implementation Status & Results Report](#).

20. GIFEC. [Rural Connectivity Programme](#). (accessed 26 June 2023)

21. The project is supported by the Export-Import Bank of China and implemented through a strategic agreement with Huawei and the China National Technical Import and Export Corporation.

22. At least 1,008 new rural telephony sites have been constructed. See: <https://gifec.gov.gh/gifec-shares-universal-access-experience-with-agence-de-gestion-du-fonds-daccess-universel-gefau-mali>.

3. The digital gender divide in Ghana

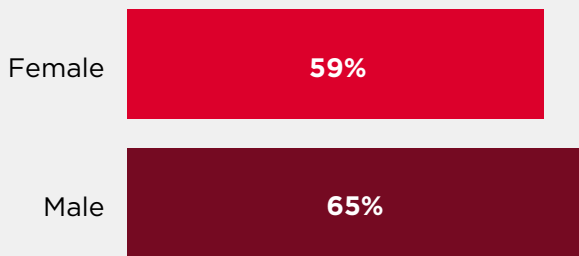


Mobile connectivity is the primary means for people (especially women) in low-and-middle-income countries (LMICs) to access the internet, and is therefore a key platform for ensuring digital inclusion and access to basic utilities and life-enhancing services.²³ Mobile and digital adoption can empower women, for example by enabling access to health information they may otherwise not have been privy to, or by conducting financial transactions more conveniently via digital financial services. However, a 2021 survey by the Ministry of

Finance and Economic Planning (MoFEP) showed that less than a third of Ghana's adult population used the internet frequently, and only 42% owned a smartphone.²⁴

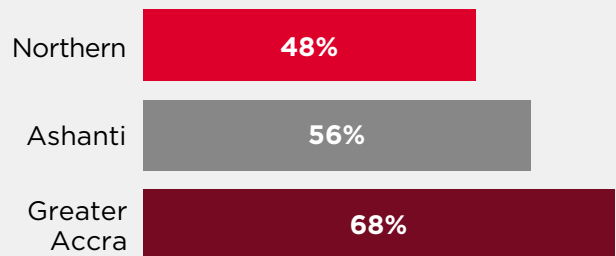
The digital gender gap in Ghana, although less significant than in most countries in the region, still poses a challenge to the achievement of Ghana's digital inclusion and transformation goals.²⁵ Figures 1 to 4 highlight some of these gaps as experienced by Ghanaian women.

Figure 1a
Smartphone ownership
(% of surveyed population aged 18+)



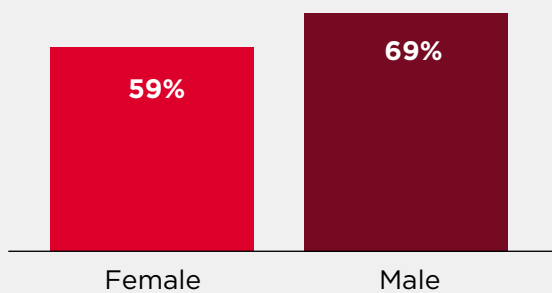
Source: GSMA Ghana Field Survey, 2023

Figure 1b
Smartphone ownership among women
(% of surveyed women aged 18+)



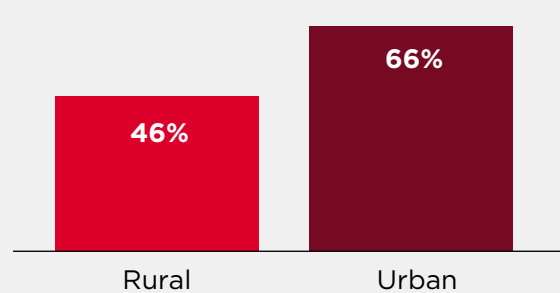
Source: GSMA Ghana Field Survey, 2023

Figure 2a
Mobile internet usage in the last three months
(% of surveyed population aged 18+)



Source: GSMA Ghana Field Survey, 2023

Figure 2b
Mobile internet usage among women
(% of surveyed women aged 18+)



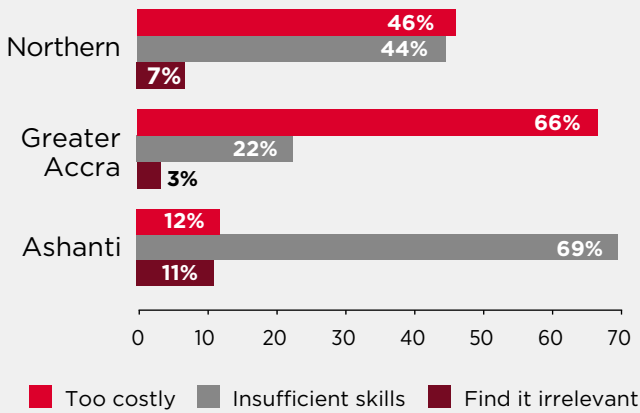
Source: GSMA Ghana Field Survey, 2023

23. GSMA (2022). [2022 Mobile Industry Impact Report: Sustainable Development Goals](#).

24. Government of Ghana Ministry of Finance (2021). [The Official Ghana Demand Side Survey 2021](#).

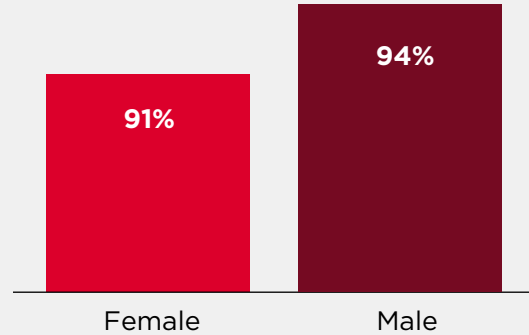
25. Jeffrie, N. (2023). [The Mobile Gender Gap Report 2023](#). GSMA.

Figure 3
Factors impeding mobile internet use
(% of surveyed women aged 18+, non-users)








Source: GSMA Ghana Field Survey, 2023

Figure 4
Mobile money account ownership
(% of surveyed population aged 18+)



Source: GSMA Ghana Field Survey, 2023

To understand the contributing factors or underlying cause(s) of the gender divide, particularly in mobile internet usage, it is important to investigate the following issues:

 <p>Literacy and digital skills</p>	<ul style="list-style-type: none"> For example, insufficient knowledge or support on how to use a mobile phone, how to access/use the internet, difficulty with reading and writing etc.
 <p>Affordability</p>	<ul style="list-style-type: none"> Includes high handset and data costs in comparison with average income levels.
 <p>Safety and security</p>	<ul style="list-style-type: none"> Exposure to harmful content, contact from strangers, and poor information security.
 <p>Relevance</p>	<ul style="list-style-type: none"> For example, inadequate content in local language.
 <p>Access</p>	<ul style="list-style-type: none"> Comprises poor network coverage, slow connection, phone battery issues and lack of family consent, among others.

Closing the mobile and digital gender gap will benefit society, the economy and women and their families, while also contributing to achieving Sustainable Development Goal 5 on gender equality and the empowerment of all women and girls.²⁶

Existing research on Ghana suggests that barriers to bridging the digital gender gap manifest in two major dimensions^{27, 28}: (1) affordability barriers and (2) inadequate literacy and digital skills, which are consistent with the findings from this study. Both barriers are discussed in more detail below.

26. IISD (2017). [What is the Gender Digital Divide, and Why Should it Matter for the SDGs?](#)

27. Jeffrie, N. (2023). [The Mobile Gender Gap Report 2023](#). GSMA.

28. Chair, C. et al (2020). [Women's Rights Online: Closing the digital gender gap for a more equal world](#). Web Foundation.

3.1 Affordability

More than nine out of every 10 internet users in Ghana use mobile phones to access the internet.²⁹ 58% of male internet users access it via mobile exclusively compared to 75% of female internet users,³⁰ highlighting the key role of mobile across the population, especially women. However, the cost of smartphone devices is a major barrier, preventing lower-income individuals from participating in Ghana's digital economy. The average cost of a smartphone is estimated to be \$41, which translates to about a quarter of the average monthly income in the country.³¹

GSMA's 2023 field surveys show that affordability is a major barrier to accessing the internet for up to 38% of female respondents, compared to 30% of male respondents. Meanwhile, the average earned income for females in Ghana is less than a third of the average income of males.³² This contributes to why women in Ghana are 10% less likely to own a smartphone, and 14% less likely to have used mobile internet services.^{33, 34} When women have access to a mobile internet connection, they are less likely to use it than men, due to cost implications.³⁵



The type of phones that can be used to access e-government platforms are expensive, not all of us can afford it. Even the 'yam' (basic phones) are now expensive. But for me I use the basic phone."

Focus group participant, Northern region

The cost of mobile internet services is further impacted by significant sector-specific taxes imposed on mobile network operators (MNOs), which reduces their resources for infrastructure investment and their ability to drop service prices.^{36, 37} Mobile services are also subject to VAT, national health insurance levy, and communications services tax.

In addition, an e-levy of 1.5% (subsequently reduced to 1%) was introduced in 2022 on mobile money P2P transfers above GHC100 (~\$8).³⁸ The exemption of the cumulative transfer or the initial GHC100 was intended to protect lower-income consumers. The e-levy is largely unpopular with mobile users.³⁹ In May 2022, when the e-levy became operational, it resulted in a 25% reduction in P2P mobile money transactions.⁴⁰ Initiatives to reduce associated costs and improve affordability are therefore essential, as women's inability to afford basic digital services means a large part of Ghana's population is excluded from actively participating in the digital economy.



I cannot go and buy an expensive phone and also be paying for data when I need to provide food for my hungry children."

Focus group participant, Northern region

29. NCA (2019). [Household Survey on ICT in Ghana 2019](#).

30. Source: GSMA Consumer Survey 2022

31. Pricing data is provided by Tarifica, with retail prices captured as of Q2 2022, including all relevant taxes. Also see: <https://a4ai.org/research/device-pricing-2022>.

32. World Economic Forum (2022). [Global Gender Gap Report 2022 Insight Report](#).

33. See Figures 1 and 2.

34. Gender gap here is calculated as:
$$\frac{\text{male users/owners} - \text{female users/owners}}{\text{male users/owners}}$$

35. Ghana has the cheapest comparative average data price per TGB in Sub-Saharan Africa. See: <https://www.cable.co.uk/mobiles/worldwide-data-pricing/#pricing>.

36. Ghana Chamber of Telecommunications (2022). [Total tax contribution of telecoms industry rises by 19% to hit GH¢ 4.3 bn in 2021](#). (accessed 26 June 2023).

37. See Annex 6 for more details on relevant taxes and levies.

38. Republic of Ghana, Ministry of Finance (2022). [Draft 2023 Budget Speech](#).

39. Afrobarometer (2022). [Majority of Ghanaians oppose e-levy, not confident it will fund development programmes, new Afrobarometer study shows](#). (accessed 26 June 2023).

40. Penteriani, G. (2023). [The E-levy in Ghana: Economic Impact Assessment](#). GSMA.

3.2 Literacy and digital skills

At least three-quarters of women who do not use mobile internet services in Ghana have attained only a primary education or less. Further, more than a third of the women surveyed who do not use mobile internet attribute insufficient skills as a barrier to being digitally included.⁴¹



I do not know how to use the phone to make calls properly, how much more using the internet and or even visiting these government websites you are talking of.”

Focus group participant, Northern region

In Ghana, digital literacy initiatives primarily target young people, with the objective of facilitating access to work in formal employment or a business setting.⁴² Such initiatives largely exclude self-employed/informal business owners (34%) and those involved in farming (25%) who make up the greater part of Ghana’s workforce, as well as people aged 61 years and above (9%).⁴³ Digital skills training interventions for these segments of the population are therefore a necessity. GIFEC has partnered with development organisations and is leading the nationwide project ICT Skills for Entrepreneurial Women Empowerment (ISEWE). The initiative seeks to expand the digital capabilities of disadvantaged women through capacity building, education and awareness

to help them grow their own businesses and access opportunities. So far, the project has trained 15,000 artisans (including hairdressers, tailors, market women, and mechanics) and 720 women entrepreneurs in basic digital skills.⁴⁴ The courses expose beneficiaries to basic skills such as how to use the internet on their phones, how to search for new styles and trends to improve customer service, and how to complete a mobile money transaction. In addition, they offer advice on precautions to reduce the risk of online fraud, guidelines on security and information, communication and technology (ICT) essentials, how to record basic business activities such as a digitised seamstress notebook, and how to market products/services via social media platforms.

Despite these efforts, Ghana is far from achieving the levels of digital literacy required for universal e-government service delivery. While such training projects have recorded some success in improving digital literacy outside the standard educational system, beneficiaries are often unable to practise new skills beyond the training sessions due to a lack of device ownership.

The focus group discussions conducted for this study suggest that many women do not fully understand the value addition or benefits that acquiring digital skills could bring, and by extension, they do not see how e-government services can be more beneficial than “offline” public service delivery. As a result, women, particularly entrepreneurs, are reluctant or need extra incentives to leave their business operations to attend digital training programmes, even when such sessions are free to attend.



41. GSMA Ghana field survey 2023

42. Jacobs, L. (2021). [Understanding people’s mobile digital skills needs: Insights from India and Ghana](#). GSMA.

43. Government of Ghana Ministry of Finance (2021). [The Official Ghana Demand Side Survey 2021](#).

44. GIFEC. [ICT Capacity Building and Skills Development Programme](#). (accessed 26 June 2023).



Extensive awareness campaigns are therefore necessary to inform women of the benefits of digitalisation for their daily lives. It is also crucial to consider innovative means of delivering digital skills training, especially for women entrepreneurs in the informal sector. An available free tool is the GSMA's widely used Mobile Internet Skills Training Toolkit (MISTT),⁴⁵ developed using a human-centred design in collaboration with MTN Ghana. The toolkit includes a four-module learning pathway specifically developed for micro-entrepreneurs in Ghana in the form of bite-sized videos available in Ga, Twi and English. The videos take users through the basic digital skills needed for business. Another challenge to improving digital skills for women is the availability of appropriate content for the different segments of training participants. To address this challenge,

the Ministry of Education plans to introduce a new Gender in Education Policy. The objectives of the policy are to stimulate nationwide behavioural change in the perception of girls' and women's abilities in ICT, to improve accessibility, knowledge and use of ICT, and to develop online and digital content that is gender-inclusive for women and girls.⁴⁶

This policy could be instrumental in facilitating the co-creation of relevant digital capacity-building content for women. Increasing digital literacy among women not only improves their economic autonomy but also fosters inclusive growth. Suitable content could include examples and images of women and girls using ICTs in a variety of educational, occupational and family-related tasks, challenging stereotypes that tend to portray women primarily as carers.

45. GSMA (2021). [Connected Society Mobile Internet Skills Training Toolkit](#).

46. Jacobs, L. (2021). Understanding people's mobile digital skills needs: Insights from India and Ghana. GSMA.

4. Expansion of e-government services



Digitalising public service delivery allows governments to serve their citizens better. To ensure that these benefits are available to all, e-government services must be inclusive, meaning that e-services must be accessible to all categories of users, regardless of individual or geographical circumstances.

The government of Ghana, through the eTransform Ghana Project (2013 to 2023), has piloted initiatives to improve the efficiency and coverage of government service delivery using digital technologies. Key achievements reported under this project are summarised in Table 2.

Table 2
eTransform Ghana Project results

S/N	E-government service indicator	Baseline (2013)	Actual (Oct 2022)	Target (Oct 2023)
1	Processing a birth certificate (number of days)	15	7	5
2	Processing company registration (number of days)	4	2	1
3	Number of new e-government applications introduced under the project ⁴⁷	3	7	7
4	Number of new e-services available to the public online under the project ⁴⁸	8	15	16

Source: World Bank Project Management Team⁴⁹



47. Four new applications were introduced - e-justice, e-procurement, e-immigration, and integrated system for data projection.

48. Seven new e-services include: authentication of marriage certificate, certified true copy of marriage certificate, marriage certificate search, authentication of birth certificate, authentication of death certificate, birth certificate search and authentication of police report.

49. The World Bank (2022). [GH eTransform Ghana \(P144140\) Implementation Status & Results Report](#).

Here are some examples of e-government services available to residents in the country:

BOX 1

Ghana.GOV



Ghana.GOV is a digital service and revenue collection platform that provides the public with a single point of access to government services. Initially, it was created to maximise government revenue streams for MoFEP, and block leakages. The portal is managed by a consortium of three private local fintech firms,⁵⁰ and NITA.

Currently, the portal enables Ghanaians to apply and pay for various services online, including birth, death and marriage certificates, business registration and permits, online passport applications, vehicle registration and drivers' licenses, among others. Digital payment methods such as mobile money are accepted on this platform, with several government ministries, departments and agencies enrolled onto the Ghana.GOV platform, resulting in increased revenue generation for the government.⁵¹

Table 3

Ghana.GOV uptake

Results	2020	2021	2022
Agencies onboarded	60	140	1,295
Transaction count (mil)	1.61	9.85	10.03
Total receipts (GHC bil)	5.04	40.31	62.76

Source: NITA⁵²

Despite the progress of Ghana.GOV in recent years, public awareness and usage of this platform remains low (see Figures 6 and 7 for more details). The platform is web-based (although a mobile app is in the works) and does not offer end-to-services beyond simple payments. Its limited capacity for end-to-end service delivery restricts the potential value

addition to users, which could deter active engagement and economic transactions. Developing an extensive user-friendly delivery model, ideally through an enhanced mobile app, is a key opportunity to significantly improve the platform, increase public engagement, and stimulate growth in digital economy.

50. Hubtel, ExpressPay and IT Consortium.

51. Republic of Ghana MoCD (2022). [Medium Term Expenditure Framework \(MTEF\) for 2022-2025](#).

52. Information provided during key informant interview with NITA.

BOX 2

National Health Insurance Scheme (NHIS)



The NHIS is a social intervention programme introduced by the government in 2003 to provide access to quality healthcare for residents in Ghana, with over 55% of the population benefitting from the scheme.⁵³

The National Health Insurance Authority introduced the MyNHIS app to enable residents and Ghanaians abroad to sign up for the NHIS and securely pay registration fees from their mobile wallets or bank cards. The app and the mobile platform⁵⁴ allow for membership renewal, making the scheme accessible to more residents. Usage via the MyNHIS app is still very low. However, the easy-to-use mobile renewal option, which has been in operation for longer, is widely adopted. An estimated 80% of membership renewals are done using the mobile short code,⁵⁵ contributing to a

rise of over 50% in active membership since it was introduced.⁵⁶ As of the first quarter of 2023, 70% of provider claims were submitted electronically; the goal is to achieve complete electronic claims management by the end of the year.⁵⁷

User registration remains a key challenge as digital onboarding is not currently permitted and new members typically must still be registered in-person. In addition, while mobile renewal is open to all premium-paying members, members who are fully exempted from paying premiums or fees (e.g., those supported under social protection schemes), are unable to use the mobile channel for membership renewal and must visit district offices in-person to access their exemptions.⁵⁸



53. Ghana Health Sector (2022). [2022 Programme of Work](#).
 54. Renewal short code is *929#
 55. NHIA (2021). NHIA PharmAccess Ghana organizes NHIA Data Day. (accessed 26 June 2023).
 56. Republic of Ghana, Ministry of Health (2022). Health Sector Annual Programme of Work: 2021 Holistic Assessment Report.
 57. Source: Interview with NHIA
 58. NHIS Mobile Renewal Information Pack and Guide

BOX 3

Cash transfer programme⁵⁹**Using mobile technologies in cash transfer programmes has already proved effective in reaching additional vulnerable people quickly and easily.**

In response to the effect of COVID-19 on household incomes, in 2020-2022, the government decided to make cash transfer payments via mobile money to an additional 125,000 individuals, extending beyond the beneficiaries of the country's flagship social protection programme Livelihood Empowerment Against Poverty (LEAP).^{60, 61} Recipients included persons living in alleged witch camps (women accused of witchcraft and banished from their communities), homeless people, head porters (a form of goods transportation conducted almost entirely by young women) and persons with disabilities, among others.

Payments relied on Short Messaging Service (SMS) and interactive voice messaging in three local languages to communicate with beneficiaries before and after the transaction. The scheme also alerted recipients when to expect transfers, communicated the amount credited to their mobile money account, and provided information about mobile money fraud and scams. Post-payment monitoring was done using free SMS surveys to confirm beneficiaries had received the funds and to assess their experience with the process of receiving the funds.

Mobile has proven to be a more cost-efficient and timely platform to disburse cash transfers.

78% of beneficiaries who responded to the post-payment monitoring survey confirmed that they did not have to bear any extra cost to receive the funds.⁶² Mobile money beneficiaries do not have to pay for transport to designated pay points or financial institutions that are often

far away. Beneficiaries also recognise that there are many mobile money agents even in rural areas, and they recognise the added benefit of not having to queue for hours to receive payments. This is particularly relevant for women with disabilities who have accessibility difficulties. Typically, the average transport cost that LEAP beneficiaries must cover to cash out at designated pay points or banks is about GHC10 per trip (approximately \$1). This corresponds approximately to one-tenth of the total amount of monthly transfers to a four-person household.⁶³ Section 5 discusses the state of mobile money transactions in more detail.

The following issues, however, need to be taken into consideration if mobile money is to be used more widely for cash transfer payments in the country:

- ✔ **Lack of individual mobile money accounts:** Some potential beneficiaries initially selected for the additional COVID-19 support were excluded as they did not have a registered mobile money account.
- ✔ **Sharing of phones by household members:** Certain households nominated one person within the household to receive the funds on their behalf. In such cases, it was difficult to independently confirm if all recipients indeed received the funds.
- ✔ **Safety of personal identification number (PIN):** Some elderly recipients found it difficult to remember their mobile money account PIN, and opted to share it with the agents who assisted them in registering their mobile money accounts. This poses a risk of fraud for elderly users.
- ✔ **Low response rate:** Only one-tenth of the beneficiaries responded to the SMS surveys used for monitoring purposes.

59. Source: Interview and supporting internal documents from UNICEF, the lead organisation in the implementation of the additional mobile money cash transfers during and post-pandemic.

60. UNICEF (2021). [Ghana: Being Prepared and Acting Fast](#).

61. The primary mode of cash transfers to LEAP beneficiaries is a smart digital card called E-zwich card.

62. Source: Government of Ghana COVID-19 Cash Transfer Survey Final Report August, 2022.

63. Source: ISSER 2022 Assessment on behalf of World Food Programme, - Women's Access to Digital Financial Inclusion and Review of LEAP Cash Transfer Programme in Ghana.

BOX 4

The Ghana Card



Digital identity verification is a crucial tool to help governments reduce fraud, ensure greater confidence for users, and facilitate interoperability of e-services. The introduction of the national biometric identification card (also known as "the Ghana Card") seeks to achieve this. From July 2022, the Ghana Card became the only official means of identification required for financial transactions with institutions regulated by the Central Bank - Bank of Ghana. The personal identification number linked to the Ghana Card is also used for taxpayer identification and social security purposes.⁶⁴

Currently, the digital identification system appears to pose some digital exclusion risks to

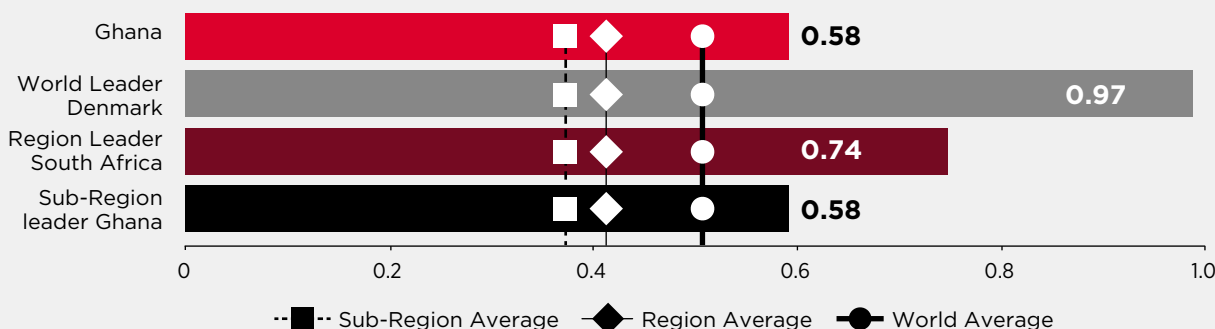
non-card holders. Only 16 million cards have been issued, representing about half the population.⁶⁵ Several women interviewed for this study (particularly those in the Northern region) have registered for the card but have yet to receive it, while others (particularly those residing in more rural and remote areas) find the registration process tedious. Non-card holders are thus prevented from accessing public services, such as being able to register a business or paying taxes. Women living in such regions, or without adequate support, are therefore more at risk as they will continue to be excluded from an ever-growing number of services, as the Ghana Card is linked to various government systems.

Examples of other e-government services in Ghana include e-tax collection and filing, an online passport renewal platform, the national digital property addressing system, GhanaPost GPS, the automated border control system (e-gate), a biometric national identity register, the e-justice system, e-smart driver's license, a mobile money interoperability system, the e-immigration system, the e-cabinet system,

e-parliament, e-procurement and the paperless port operations (GCNET) for management of customs declarations, among others.⁶⁶

Despite the increased supply of digital public services in Ghana, there is still scope for improvement as the country ranks 106 in the UN's e-government survey.

Figure 5
UN e-government survey 2022



E-Government Development Index	2003	2004	2005	2008	2010	2012	2014	2016	2018	2020	2022
Ghana (Rank)	139	143	133	138	147	145	123	120	101	101	106
Ghana (Value)	0.24	0.24	0.29	0.30	0.28	0.32	0.37	0.42	0.54	0.60	0.58

Source: <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/66-Ghana>

64. See: <https://gra.gov.gh/tin>

65. See: <https://nia.gov.gh/statistics>

66. Kpressa-Whyte, M. & Dzisah, J. (2022). *Digitalisation of Basic Services in Ghana: State of Policies in Action and Lesson for Progress*. INCLUDE.

4. EXPANSION OF E-GOVERNMENT SERVICES

To identify areas for improvement with a view to fast-track the anticipated progress of Ghana’s digital government agenda, GSMA assessed the level of public awareness of e-government initiatives, level of uptake and usage of existing e-services, reasons for levels observed, and willingness to adopt more e-services.

Figure 6

Proportion of female respondents aware of key e-government services (%)⁶⁷

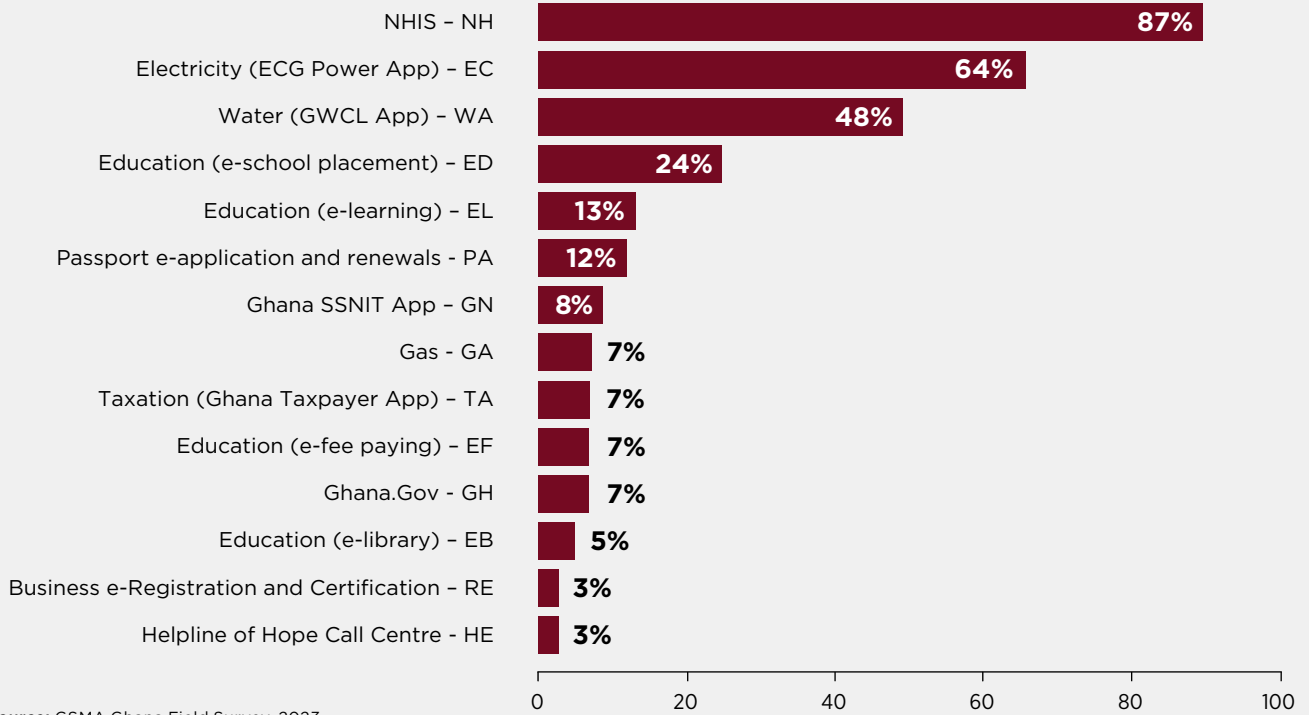
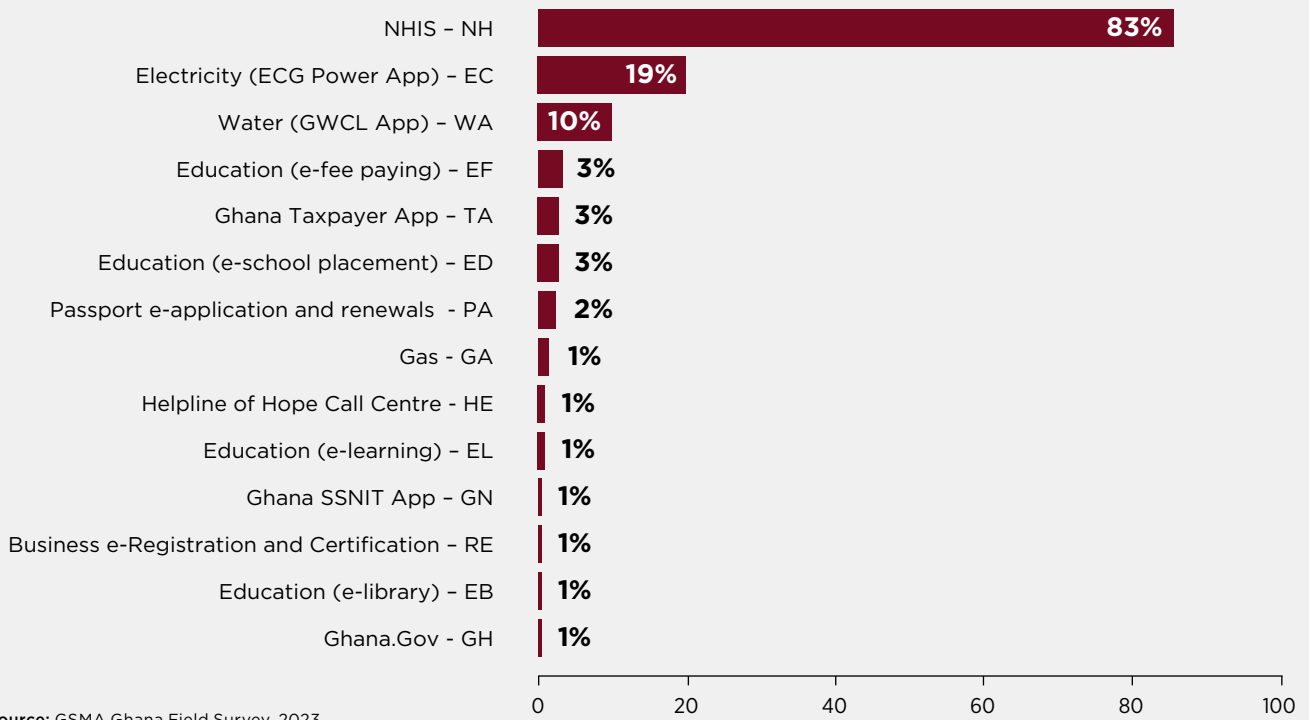


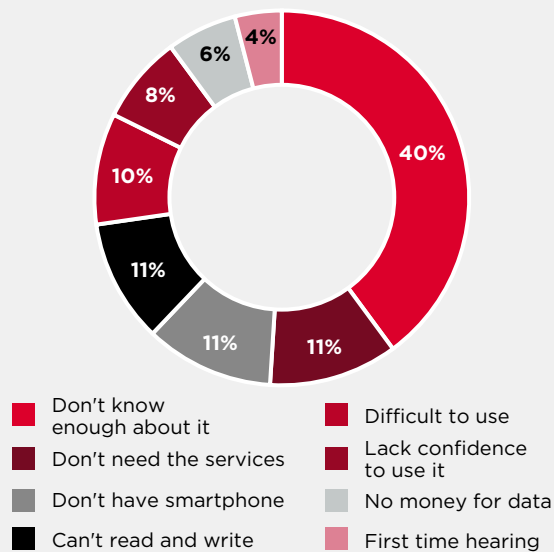
Figure 7

Proportion of female respondents who use key e-government services (%)



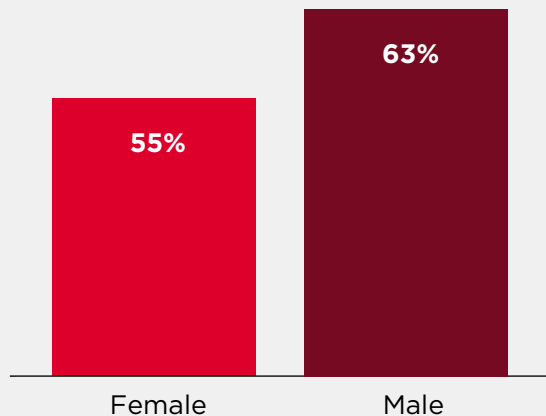
67. Includes users and non-users of e-government services.

Figure 8
Reasons for women’s low level of adoption of e-government services⁶⁸



Source: GSMA Ghana Field Survey, 2023

Figure 9
Proportion of non-users of e-government services willing to use e-services in the future (%)



Source: GSMA Ghana Field Survey, 2023

In Ghana, women are often unaware of existing e-services and do not have visibility on new e-services deployed by the government. GSMA survey results indicate that the NHIS mobile renewal service and mobile payments for public utilities (specifically electricity) are the most familiar e-services. In contrast, the level of awareness of the Ghana.GOV platform is very low (~7%). This poses a substantial challenge to e-government adoption as this platform is intended to serve as the focal point for all e-government services in the country. Inadequate information about e-government services, including Ghana.GOV, make the services less appealing or irrelevant to potential users.

Women’s adoption rate of key e-government services is equally very low at less than 10% (except for e-NHIS),⁶⁹ and these e-government services are not used on a regular basis. Mobile phones are the main channels used by women to access e-services. Women who use e-government services on mobile phones tend to rely on Unstructured Supplementary Service Data (USSD) on feature and basic phones for fee payments, as they consider it a more straightforward and easy-to-use channel.

Women are less likely to process transactions on a web browser or via mobile apps due to insufficient knowledge of how to navigate e-government platforms online and the relatively high costs of smartphones.⁷⁰ Further, several e-government

platforms are designed for desktop use and are not mobile-friendly, a critical issue as most people use mobile to access the internet.



I don't know the procedures for using government services online and how to go about. Since I don't know, if I go to do it, I can be scammed, so I have to be sure before using it. How do I know if it is the right government platform that I am using? If they demonstrate it on TV and teach it I can learn. Most people watch telenovelas so the time they go for commercial breaks they can use it to advertise how to use the e-services."

Focus group participant, Greater Accra region

"The procedure for each e-government service provider is different, this is confusing and difficult to remember."

Focus group participant, Northern region

68. Source: Survey and focus group discussions.

69. NHIS offers fee reductions/exemptions under the maternal healthcare policy, hence several women are incentivised to register under the scheme.

70. Focus group discussions.

The low adoption rate for services such as e-renewal of passports and business e-registration is attributable to lengthy wait times for online approvals. Applicants often complain about parallel manual processes and considerable physical documentation and verification checks, which still need to be done in-person. Frequent downtime of e-government platforms also makes processes slow and increases incurred mobile data costs, which demotivates users.



The passport renewal is very important to me, but since we are filling it online I don't see why I still have to go the office to continue the process and do biometrics and interview, and wait in line for so long, when biometric data has been taken already for our other ID cards. The moment we upload the application, they should be able to know and get all our biometric data information."

Focus group participant, Greater Accra region



For birth certificate, after the online registration is completed, you still have to submit supporting documents at the office. After submitting the printed forms, it can take more than two months before you acquire the birth certificate."

Focus group participant, Greater Accra region



Increasing awareness of existing e-government services and addressing cost, knowledge and service quality barriers can promote faster uptake and usage. At least one in every two women who do not already utilise e-government services are willing to do so, provided the impediments identified in Figure 8 are removed (see Section 6 for suggested actions required to address highlighted barriers). Women are, however, 11% less likely than men to be persuaded to use e-government services.⁷¹

For e-government to be inclusive, the needs of other vulnerable groups such as persons with disabilities must also be considered. Less than 20% of persons with disabilities in Ghana are aware of or able to use most accessibility features on a mobile phone, due to limited capabilities, lack of knowledge on how to use these features, and device cost.⁷² Several e-government platforms also do not have accessibility functions (e.g., e-payslip for government employees), thereby preventing this user group from benefitting from these services and limiting their independence as they are forced to depend on friends or relatives without disabilities for access.⁷³

71. Calculated as: $\frac{\text{male users} - \text{female users}}{\text{male users}}$

72. These functions include; text or font size magnifier, tactile markers on keyboard, braille keyboard, speech-to-text technology, etc. See: <https://www.gsma.com/mobilefordevelopment/resources/closing-the-mobile-disability-gap-in-ghana/>

73. Agangiba, M.A., Kabanda, S., & Brown, I. (2018). *Experiences of Persons with Disabilities in Accessing E-Government Services in Ghana*. Research Papers. 69.

5. Mobile money and digital government payments



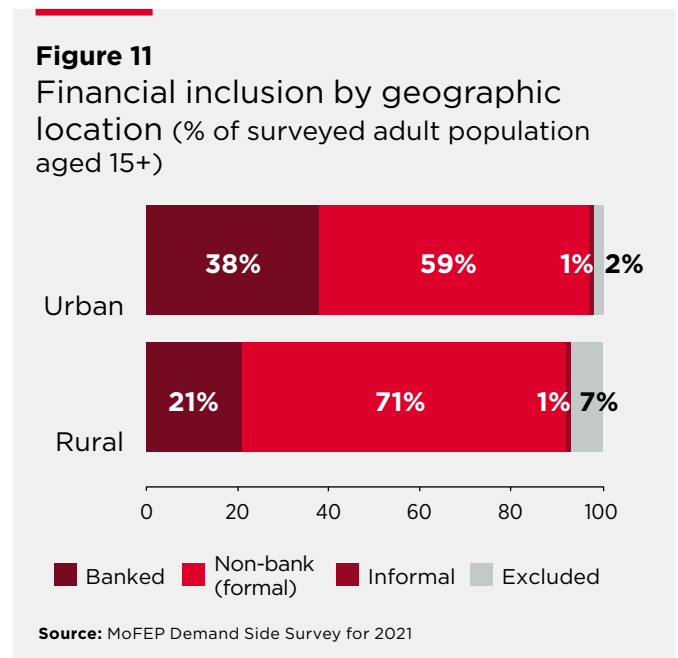
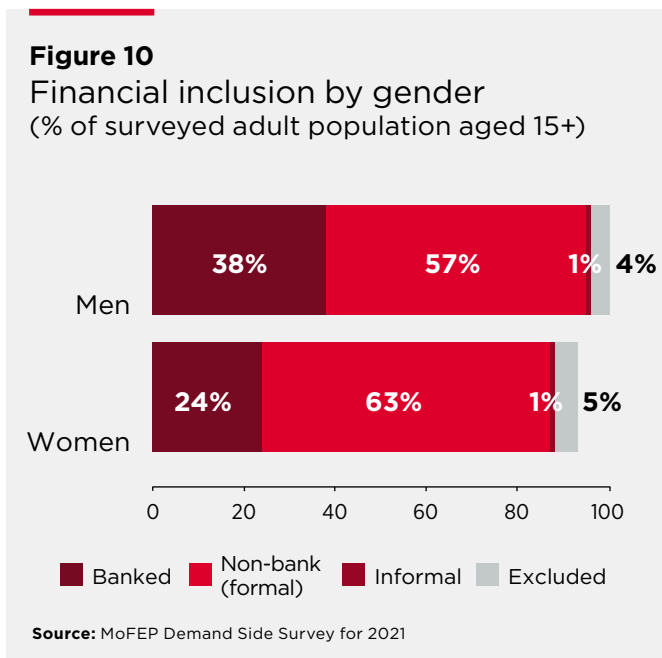
5.1 Financial inclusion and mobile money growth in Ghana

Financial inclusion is a critical tool for women’s economic empowerment and financial independence as it helps to break down social norms that limit opportunities for women, supporting women’s inclusion in household financial decision-making and increasing prospects of financing expansion of women-owned businesses.

Ghana has made significant progress in promoting financial inclusion, not just for

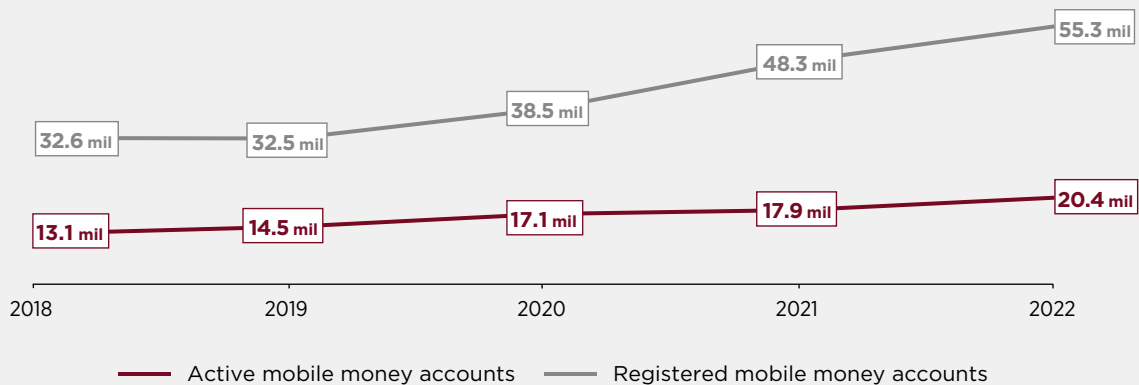
women. Back in 2010, at least 44% of Ghana’s adult population had no access to any formal or informal financial services,⁷⁴ this has dropped to between 4% - 5%.

Mobile money is the core of non-bank (other formal) financial access in Ghana, and has been a game changer in deepening financial inclusion in the country, particularly for women and rural populations as shown in Figures 10, 11 and 12.



74. [Ghana's National Financial Inclusion and Development Strategy \(2018 to 2023\)](#)

Figure 12
Growth in mobile money account ownership (mil)



Source: Bank of Ghana's summary-of-economic-and-financial-data January 2023

Almost all adults in the country are aware of mobile money, and between 76% – 86% of Ghana’s adult population have used mobile money services in the last 90 days.⁷⁵ Mobile money enables financial transactions without the need to have a bank account, representing a vehicle for financial inclusion for poor households. Women have benefitted from increased access to financial services provided by mobile money, which has given them more control over their finances.

Despite the growth in ownership of mobile money accounts, evidence points to the barriers women continue to face in using the full range of financial services that mobile money offers.⁷⁶ For instance, the GSMA Consumer Survey shows that mobile money accounts in Ghana owned by women were used less frequently than accounts owned by men.⁷⁷ Additionally, women entrepreneurs in Ghana lag behind in their awareness and usage of non-core mobile money services other than cash-in and cash-out (CICO) services, which could otherwise add value to their businesses.⁷⁸ Meanwhile, Ghana has one of the highest rates of female-owned businesses

(although borne out of necessity and operating at a small scale), with 37%⁷⁹ of businesses in the country being women-owned.

The rapid growth of mobile money services, as shown in Figure 12, has allowed subscribers to receive money, transfer funds and make payments. This growth is supported by enabling policies and advancements in payment infrastructure and interoperable systems. The Ghana Interbank Payment and Settlement System (GhIPSS), a subsidiary of Ghana’s Central Bank, operates as the national payment systems infrastructure provider. In 2018, GhIPSS created the Mobile Money Interoperability (MMI) platform and the GhIPSS Instant Pay (GIP) platform, which allow the transfer of funds across various telecommunication networks, as well as transfer from mobile banking apps to mobile money wallets.⁸⁰ MMI transactions in the country increased by 367% by the end of 2020, from nine million transactions in 2019 to 43.9 million transactions in 2020, and have grown even further. As of 2022, MMI transactions account for 58% of the total volume of payments facilitated by GhIPSS, but only for 3% of the total value of transactions.

75. Raithatha, R et al (2023). [The State of the Industry Report on Mobile Money 2023](#). GSMA.

76. Ibid.

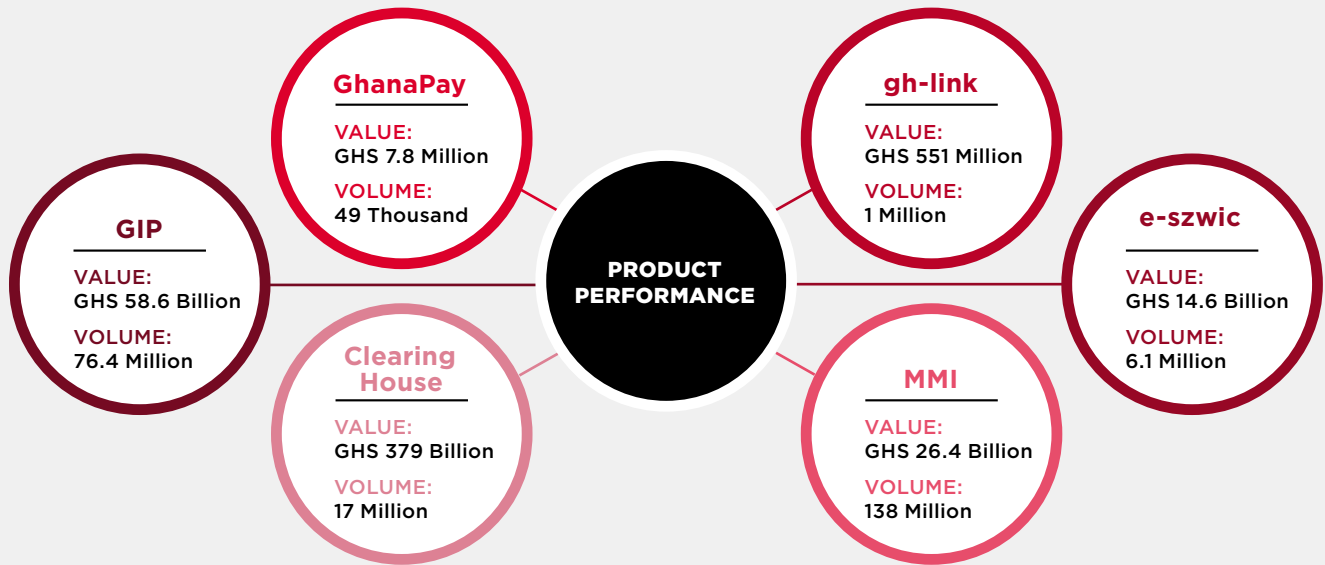
77. Female respondents were 10% less likely to have made a mobile money transaction within a seven day period.

78. Lowe, C. et al (2022). [Exploring women's use of mobile money in Ghana: The user journey, entrepreneurs and the impact of COVID-19](#). GSMA.

79. Mastercard (2022). [The Mastercard Index of Women Entrepreneurs](#).

80. GhIPSS (2022). [The State of Instant and Inclusive Payment Systems in Africa SIIPS 2022 - Case Study](#).

Figure 13
GhIPSS services split by transaction volume and value in 2022



Source: GHIPPS

Ghana has taken the first step towards digitising most government-to-person (G2P) and government-to-government (G2G) payments, which are mostly made via digital channels.⁸¹ For example, the interoperable biometric smart card E-zwich⁸² is used to pay beneficiaries of the LEAP social welfare conditional cash transfer

programme and personnel of the National Service Scheme. A key challenge, however, is how to develop and expand the digital payments ecosystem so that these funds can be used for other digital transactions, rather than being cashed out by recipients.⁸³



81. BFA Global (2017). [Country Diagnostic Ghana: Building an Inclusive Digital Payments Ecosystem: The Way Forward](#).

82. A payment system that offers a suite of electronic payment and banking services accessible from a POS terminal or ATM.

83. Source: ISSER 2022 Assessment of Women’s Access to Digital Financial Inclusion and Review of LEAP Cash Transfer Programme in Ghana.

5.2 Opportunities for leveraging mobile payments to facilitate access to digital public services

While there have been advancements in digitalising government payments and receipts in the country, some government-to-business (G2B) procurement payments are still made via cheque. This is because the Ghana Electronic Procurement System roll-out to public entities is not complete⁸⁴ and needs integration with other systems before contract payment can be effected. Further, while Ghana stands out as a

market with potential uptake of e-government services, the range of mobile payments for government services (P2G and B2G) is still relatively limited.

There are several use cases⁸⁵ for using mobile money or mobile-enabled payments to access government services easily, as shown in Table 4.

Table 4
Mobile money or mobile-enabled payments

P2G	B2G	G2P	G2B
Tax payments and tax filings to the revenue authority		Tax refund	
Social security payments e.g., national insurance, etc.		Social protection e.g., cash transfers, pension	Procurement contract fees
Government fees e.g., business registration and licences, passport renewal, etc.		Salaries	
Government fines and levies			
Public utilities e.g., electricity, water and gas			
Public healthcare services			
Education fees to government institutions			

Advantages of digitising government payments and services include reduced administrative costs, reduced leakage in government revenue, improved transparency, expanded revenue

collection base, reduced risks and costs for users, improved compliance due to convenience, and easy access to basic services and utilities.⁸⁶

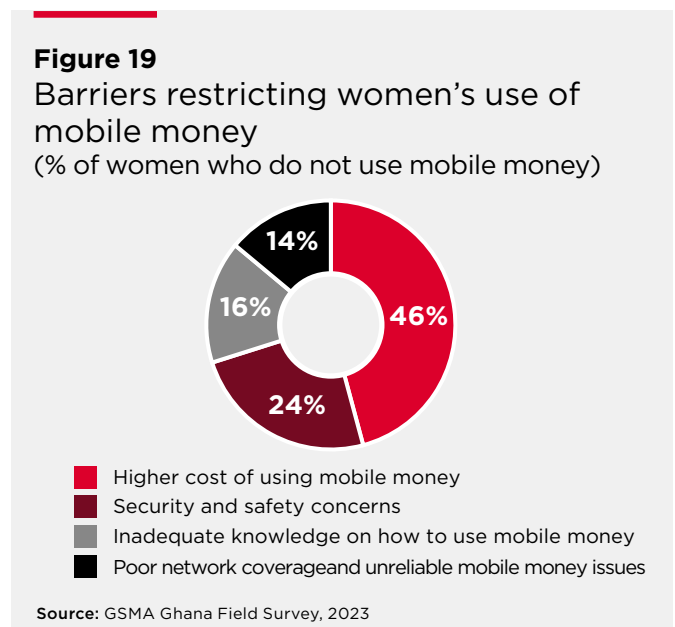
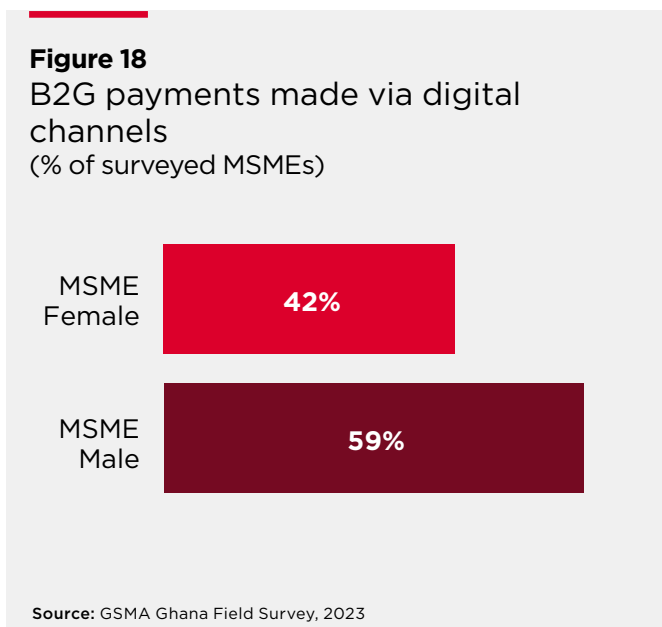
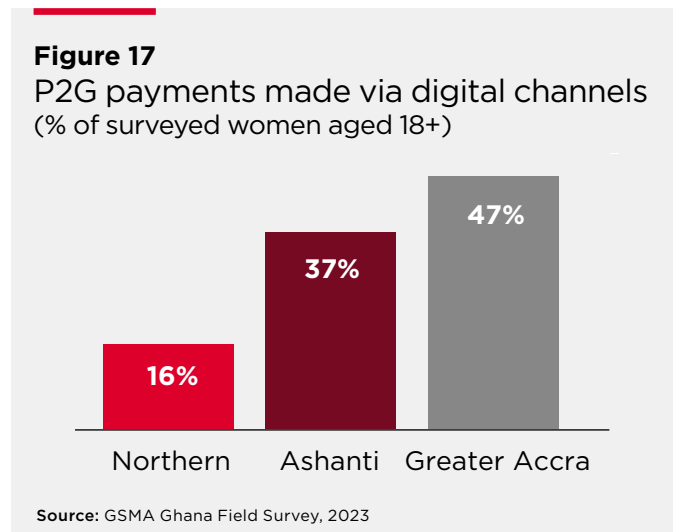
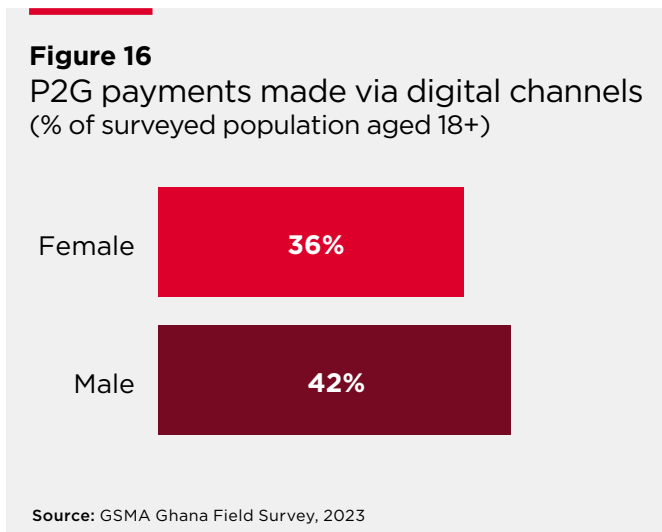
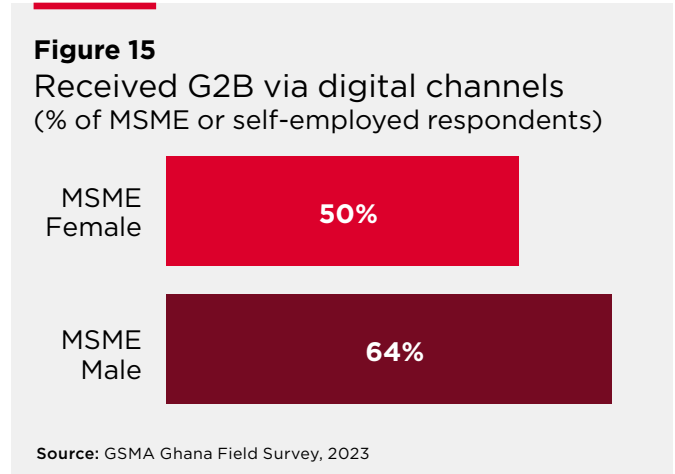
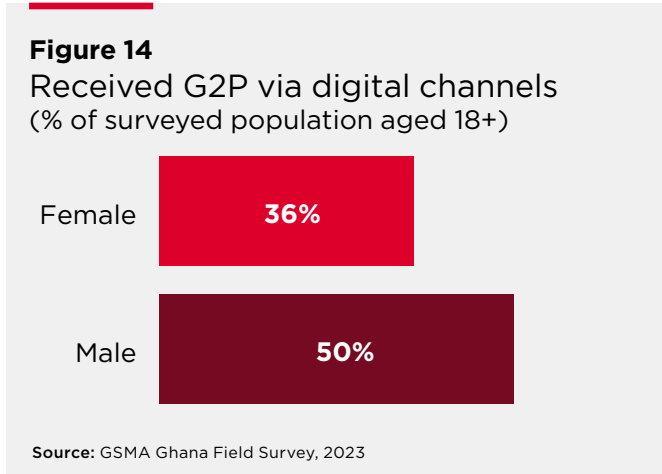
84. Ghanaian Times (2022). [600 entities to go on GHNEPS by 2023](#).

85. Fichers, N. and Nalji, L. (2020). [Digitalising person-to-government payments](#). GSMA.

86. The Bill and Melinda Gates Foundation (2021). [Digitization for Improved Governance: Financial Services for the Poor](#).

5.3 Uptake of digital government payments and receipts

Figures 14 to 19 highlight the extent to which digital channels are used for government payments and receipts in Ghana, and the barriers to active usage.



Fewer women receive government payments (mostly for salaries, allowances, and pensions) through digital platforms; approximately one in three women, as opposed to one in two men. A similar gap is observed between male and female entrepreneurs for government payments to businesses such as for consultancy services and procurement or supplier costs, although in this case there is higher adoption rate – one in two female entrepreneurs versus two in three male entrepreneurs.⁸⁷

While mobile money is used for P2G and B2G payments for public utility bills, taxes, fees and levies, a substantial proportion of users and non-users of mobile money in the country consider the services to be expensive.



We are discouraged from sending money and receiving money via mobile money because of the cost of such services. It is just discouraging, especially the e-levy. I wish the government can look into the e-levy and mobile money charges. Currently they are too high.”

Focus group participant, Northern region

Less than one in five women from the Northern region (16%) have made a digital P2G payment, representing the most digitally excluded of the groups surveyed, compared to their female counterparts in other regions (37% in Ashanti and 47% in Accra regions).



My education is limited and I cannot send or read written text messages, but I can make voice recordings. So I feel I may make a mistake and make wrong payment, so I do not take the risk of making payment on e-government platform, where I might lose my money and not get my refund.”

Focus group participant, Northern region



I prefer the manual process of payment over the electronic, although I have to join a queue before I will be served, but then with the manual they will provide you with receipt as evidence but with the electronic your phone can get lost at any time and you will lose those information. For example, in February I paid my light bill to ECG through my mobile phone and it didn't reflect, so the next month's bill still came with arrears. Whenever government officials from the electricity company pay a visit to our home and want to disconnect us, I can just show them the physical receipt as evidence of payment and immediately they will stop the disconnection.”

Focus group participant, Ashanti region

The mobile money levy implemented in Ghana has increased the tax burden not only for service providers but for consumers, which suggests that the country's fiscal policies are not aligned with its financial inclusion objectives.

There is a need for service providers and regulators to address cost perceptions by effectively communicating the value of mobile money services, emphasising their ability to save time and money, and clarifying the specific associated charges users are expected to incur. There is also a clear opportunity to enhance financial inclusion by increasing knowledge and awareness about exemption policies. For instance, only a few focus group discussants were aware that certain categories of mobile transactions are exempt from levies (implying inadequate awareness of the exemption of transactions below GHC100).

Additionally, fear of being defrauded due to prior negative experiences of loss of funds from reliance on family, friends or agents to operate mobile money accounts has proven to be an impediment to greater mobile money usage. This necessitates further sensitisation campaigns on how to mitigate these risks.

Other barriers include poor network coverage, customer dissatisfaction with mobile money service quality, and delay in the issuance of the Ghana Card. Therefore, more needs to be done to address highlighted barriers (see Section 6 for suggested actions).

87. Mobile money accounts for one-third of these transactions.

6. Actions required to enhance access to inclusive digital public services



Low adoption rates of e-government services and digital government payments and receipts are interlinked with the digital gender gap. Only by addressing the contributing factors behind the gender gap and digital exclusion in general will it be possible to make e-government services more inclusive and drive greater adoption. These factors include affordability of internet-enabled devices, insufficient knowledge and skills to access and use digital solutions, inadequate

awareness campaigns showcasing the benefits of available e-government services, absence of real-time support and user-centric design of e-government platforms, poor network coverage in remote locations, and general decline in the use of mobile money services due to the e-levy on mobile transactions.

Table 5 highlights eight action points needed to tackle these barriers.

Table 5
Eight action points needed to tackle barriers to e-government adoption

Action	Policymakers and regulators	Mobile operators	Donor agencies
1 Increase awareness of e-government services	<ul style="list-style-type: none"> MoCD through NITA should develop and implement comprehensive awareness campaigns in partnership with the National Commission for Civic Education (NCCE), and community leaders/organisations to educate the public about the availability, benefits, and usage of e-government services. 	<ul style="list-style-type: none"> Collaborate with government to promote e-government services via mobile internet and using mobile money, leveraging MNOs' large customer base and communication channels. 	<ul style="list-style-type: none"> Support government in developing an inclusive plan for spreading awareness of existing e-services to excluded groups, including women. Provide financial resources for public awareness campaigns and outreach activities that promote e-government services.
	<ul style="list-style-type: none"> MoCD, in partnership with mobile operators and development agencies, can conduct research and assessments to identify the most effective advocacy channels for improving awareness of e-services. 		
2 Boost women's literacy and basic digital skills	<ul style="list-style-type: none"> The Ministry of Education, Ministry of Gender, Children and Social Protection (MoGCSP) and MoCD should develop and implement national digital literacy strategies and policies that prioritise robust digital skills training for those in the informal sector. The Ministry of Education, in collaboration with MoCD and the Ministry of Local Government and Rural Development, could expand the role of existing community ICT centres and libraries with training facilities for continuous digital learning opportunities for all, and trained personnel who can assist users in navigating online platforms and utilising public e-services. 	<ul style="list-style-type: none"> Co-create innovative digital training programmes in collaboration with the government, educational institutions, and non-governmental organisations (NGOs) to provide hands-on skills and resources. Train and incentivise mobile agents to provide digital skills training and support to customers, such as using GSMA's MISTT. 	<ul style="list-style-type: none"> Support government in researching specific digital needs and skills gaps (e.g., to assess the level of women's abilities to use mobile apps in filling and submitting e-forms, and awareness of how to mitigate or spot online scams), to guide the development of appropriate content for women. Support the development and distribution of digital learning materials and resources that are tailored to the needs of various demographics and regions. Collaborate with local NGOs and community mobilisers or groups such as village savings and loan associations to bring digital literacy programmes to underserved populations and rural areas. Face-to-face training during members meetings might be more effective.

Table 5 continued

Eight action points needed to tackle barriers to e-government adoption

Action	Polymakers and regulators	Mobile operators	Donor agencies
<p>3</p> <p>Increase knowledge on how to use e-government services</p>	<ul style="list-style-type: none"> ✓ Government institutions providing e-services should clearly communicate to users the steps involved in the delivery of such e- services and provide real-time status updates, allowing users to track the progress of their online requests and understand the next steps required. ✓ Ensure that adequate support mechanisms are in place to assist users in real time e.g., providing Frequently Asked Questions (FAQs) and tutorials, live chat support, and helplines. 	<ul style="list-style-type: none"> ✓ Integrate training on e-government service payments into existing mobile money training, through SMS messages or via in-app tutorials. 	<ul style="list-style-type: none"> ✓ Embed e-government modules in digital training programmes offered to disadvantaged groups.
<p>4</p> <p>Address affordability barriers</p>	<ul style="list-style-type: none"> ✓ GIFEC should invest in public WI-FI networks to provide free or low-cost internet access in more community telecentres. ✓ Policymakers should support additional funding of GIFEC to support women within the low-income bracket access subsidies for digital devices. ✓ Establish public-private partnerships with MNOs, device manufacturers or other relevant players to subsidise the cost of smartphones and digital services. ✓ The Bank of Ghana, MoCD and MoGCSP can incentivise financial institutions and local savings groups to provide microloans for women at lower interest rates. ✓ Through the Ghana Revenue Authority, MoFEP should consider reassessing the benefits of taxes on mobile transactions and devices against the impact on reduction in usage of mobile services, including volume of online visits and transactions via e-government platforms. ✓ E-government service providers should mandate designers of e-government apps to develop 'data-light' versions to help reduce internet costs for more price-sensitive users. 	<ul style="list-style-type: none"> ✓ Consider partnering with government to encourage differential pricing strategies for e-government services, such as lower rates during off-peak hours. 	<ul style="list-style-type: none"> ✓ Partner with and support the mobile ecosystem on projects that promote affordable handsets, e.g., handset financing schemes provided through grassroots NGO networks led by women, such as women's savings groups.

Table 5 continued
Eight action points needed to tackle barriers to e-government adoption

Action	Policymakers and regulators	Mobile operators	Donor agencies
<p>5 Enhance security against online fraud</p>	<ul style="list-style-type: none"> ✔ The Cyber Security Authority to review the efficacy and implementation of established regulations on data privacy and cybersecurity to instil trust and confidence in e-government services. ✔ Clearly communicate to users the measures taken by all e-government service providers to protect user data, mechanisms in place for users to report data breaches or seek redress, and tips for new users on how to secure their login details for accessing e-services. 	<ul style="list-style-type: none"> ✔ Implement advanced data transmission security and fraud prevention measures, and communicate the measures taken to protect mobile subscribers' data. ✔ Educate customers on cybersecurity threats, how to keep mobile money PINs safe and monitor transactions on their accounts. This can be done via SMS alerts. ✔ Develop robust monitoring and alert systems to detect and respond to cybersecurity threats in real-time. ✔ Establish effective incident response mechanisms to deal with security breaches and mitigate their impact. 	<ul style="list-style-type: none"> ✔ Support the development of local online safety and security skills by sharing best practices and technical expertise. This could include how to keep passwords/PINs secure, remembering to logout, how to spot and report a scam, and how to verify the authenticity of content and entities.
<p>6 Address the issue of poor network coverage or slow connection</p>	<ul style="list-style-type: none"> ✔ Invest in more public internet access points and community ICT centres. ✔ Prioritise digital inclusion policies to ensure equal access to e-government services, including provisions for marginalised and underprivileged communities. 	<p>✔ MoCD, in partnership with MoFEP, development partners and MNOs, to provide funding and technical advisory and implementation support to GIFEC to speed up the nationwide rural telephony and digital infrastructure development improvement project</p>	
<p>7 Provide end-to-services to make the digital process more appealing</p>	<ul style="list-style-type: none"> ✔ Government institutions providing e-services can incentivise citizens to use digital services by reducing fees or guaranteeing faster processing times. ✔ Make digital services faster and more efficient than their manual alternatives with tangible benefits to encourage adoption. 	<ul style="list-style-type: none"> ✔ Collaborate with government to ensure that digital public services are accessible, reliable, and meet the needs of various segments of the population. 	<ul style="list-style-type: none"> ✔ Provide technical assistance to strengthen the government's digital transformation initiatives to replace manual processes with more effective e-government services.

Table 5 continued

Eight action points needed to tackle barriers to e-government adoption

Action	Policymakers and regulators	Mobile operators	Donor agencies
<p>8</p> <p>Reduce downtime of e-government platforms and lack of interactive/user-friendly interface</p>	<ul style="list-style-type: none"> ✔ NITA and other e-government service providers to conduct regular maintenance and updates to ensure platform stability and minimise downtime. ✔ Ensure that e-government services are designed and optimised for mobile devices. ✔ Implement responsive and agile design principles to provide a seamless and user-friendly experience across various screen sizes. ✔ Implement a human-centred design approach in developing e-services, in conjunction with private sector technology experts and foreign development partners, to create intuitive and visually appealing interfaces that are easy to navigate, with simple/clear instructions and logical flow. ✔ MoCD to address the fragmentation of multiple e-government services and ensure standardisation such that functionalities and user experience is similar across board. 	<ul style="list-style-type: none"> ✔ Collaborate with government agencies to develop user-friendly mobile apps for e-government services, with a focus on simplicity, reliability and localisation. The MyNHIS app can be a starting point, considering the wide adoption of the mobile renewal service. 	<ul style="list-style-type: none"> ✔ Provide technical assistance and funding support for the development of e-government platforms that adopt a human-centred design and allow continuous testing and iterations for rapid customer feedback and improvements.



7. Annexes



Annex 1: Indicators for monitoring gender equality in digital transformation

To integrate a gendered perspective to digital transformation and enhance women's access to digital public services, the following guiding indicators can be used to track and ensure that strategies support digital inclusion for women:

S/N	INDICATOR
1	Integration of gender considerations in strategic vision documents and programme design for e-government systems
	→ Is there a clearly defined digital transformation strategy that depicts a deep understanding of the context of digital inclusion for women and other typically marginalised groups, and spells out sound action plans to be taken?
	→ Is gender equality explicitly mentioned as an intended outcome in the e-government strategy or national digital agenda?
	→ Do strategy documents for e-participation underscore women's right to participate in e-information and e-consultation processes?
	→ Do connectivity policy and programme documents emphasise universal access?
	→ Do strategic documents on e-government consider the appropriate involvement of women's groups and local NGOs in realising the goals of e-government?
	→ Are there enough policy dialogue spaces at the national level to support inter-ministerial coordination on gender mainstreaming in the national digital agenda?
	→ Does the e-government strategy adopt a life cycle approach in e-service design?
2	Gender mainstreaming in e-government
	→ Does the MoGCSP have a digital or ICT policy on e-government for gender equality?
	→ If yes, does the policy adopt a rights-based approach, considering the role of e-government in the advancement of women's social, economic, and political advancement?
	→ Does MoGCSP take the lead in inter-ministerial/inter-departmental collaboration for gender-responsive e-government?
	→ Does the national policy for women's empowerment emphasise women's uptake of e-government and investment in women's digital capabilities?
	→ Does MoGCSP have specialised digital literacy and skills programmes for women and girls?
	→ Are gender perspectives integrated into the manual on e-government implementation?
	→ Is there a gender mainstreaming manual for e-government development?
	→ Are there periodic capacity-building programmes on gender-responsive e-government for officials of MoGCSP and other ministries?
	→ Is gender-disaggregated data on uptake of e-service delivery and access to connectivity available and adequately monitored?

S/N	INDICATOR
3	Gender budgeting
	→ Does the budgetary allocation for the e-government master plan or national digital agenda have a gender budgeting component?
	→ Are all sectoral ministries/agencies bound by gender budgeting norms?
	→ Do financial audits and performance audits of e-service delivery, e-participation, and/or connectivity interventions incorporate gender dimensions?
4	Facilitation mechanisms for supporting universal access to e-services
	→ What percentage of women and men access the internet?
	→ Are there time-bound targets to overcome gender and poverty divides in internet use included in connectivity policy frameworks? Is there a budgetary provision for this?
	→ Are there specific policies to promote free or low-cost public internet access? (This can include budget allocations for internet access in public libraries, schools and community centres, or provisions for spectrum use by community WI-FI options.)
	→ What is the number of free and paid public access points per 100 inhabitants? On average, at each public access point, what is the percentage of women visitors?
	→ Are there women facilitators in e-service delivery kiosks/telecentres? What is their proportion in comparison to male facilitators?
	→ Is the price of one gigabyte of internet data within 2% of the average monthly income of women? (Evidence suggests that this is the range within which data costs become affordable.)
5	Gender responsiveness of open data frameworks
	→ Is government data on gender dimensions of e-government policies and programmes available online?
	→ What is the periodicity of updating gender-disaggregated open data sets?
6	Women's uptake of e-services
	→ What percentage of women internet users access e-service portals?
	→ What percentage of women access e-services through service delivery kiosks?
7	Legislative guarantees
	→ Does existing legislation on freedom of expression adequately guarantee women's rights in online spaces?
	→ Do existing laws on gender-based violence effectively address e-violence against women?
8	Gender-inclusiveness of e-participation initiatives
	→ What percentage of women participate in online consultations?
	→ Out of the total number of online consultations on services/policies, what percentage are specifically directed at women?
	→ Do government agencies publish the outcomes of policy consultations online?

S/N	INDICATOR
9	Digital literacy efforts directed at women and girls
	→ In the design and roll-out of national digital literacy programmes, is there provision for a gender component?
	→ What percentage of women internet users have an adequate grasp of information, media and data literacies?
	→ What percentage of government schools and colleges are equipped with computer labs that are easily accessible to girls?
10	Meaningful use cultures that promote women's empowerment
	→ What are the patterns of internet use of women and men?
	→ Is online content relevant for women users? Are women able to access information that is context-appropriate and in local languages?

Source: Elaboration of the United Nations Economic and Social Commission for Asia and the Pacific's e-government assessment framework,⁸⁸ and policy considerations by the GSMA's Connected Women Programme.⁸⁹



88. E-Government for Women's Empowerment in Asia and the Pacific (2016). [Unit 5.2. A framework for a whole-of-e-government assessment on gender inclusion](#). UN ESCAP.

89. McDougall, P. et al (2022). [Policy considerations to accelerate digital inclusion for women in low- and middle-income countries](#). GSMA.

Annex 2: SWOT analysis – Women's access to e-government services in Ghana

Strengths

- Growing supply of e-government services, with **1,295** agency services available via Ghana.GOV.
- Institutional commitment and investment to enhance **five** key pillars – universal access, digital skills, digital entrepreneurship, digital government and emerging technologies.
- **80%** of NHIS membership renewals are done via mobile short code. Lessons from high adoption of NHIS mobile services can be replicated.
- Mature mobile money market – **91%** of female respondents own a mobile money account.

Opportunities

- GIFEC's plan to expand broadband connectivity to **2,000** excluded rural communities by the end of 2023 (with a specific target of **two-fifths** being female beneficiaries), would promote universal access.
- **55%** of women who do not use e-government services are willing to adopt them, if highlighted weaknesses are addressed.
- **75%** of female internet users access the internet via mobile exclusively, compared to **58%** of male users. This highlights the utility of mobile for people, especially women.
- Ghanaian women are entrepreneurial. Over **37%** of private businesses are women-owned. GIFEC's ICT skills programme for female entrepreneurs has reached **15,000** artisans, and can be scaled up to reach even more women.
- **78%** of beneficiaries of the COVID-19 relief cash transfers made via mobile money confirm no extra costs were incurred to receive the funds. Mobile money can therefore be used more for LEAP payments for cost efficiency and to allow recipients to use the funds for other digital transactions rather than cashing out.

Weaknesses

- Internet-enabled devices are not affordable at approximately **\$41**, which translates to one-quarter of the average monthly income in the country.
- Women are **10%** less likely than men to own a smartphone and **14%** less likely to use the internet.
- More than **one-third** of women who do not use the internet regularly indicate inadequate literacy and digital skills as a barrier.
- Less than **7%** of women are aware of Ghana.GOV and less than **1%** use the platform regularly.
- Although mobile money is widely used, digital government payments remain uncommon - only **16%** of women in the Northern region have made a digital P2G payment.

Threats

- **1%** e-levy discourages mobile money use.
- Only **16 million** Ghana Cards have been issued, representing **half** the population.
- Slow roll-out of the mobile app for Ghana.GOV services (currently web-based).
- Average earned income of women in Ghana is less than **one-third** of their male counterparts.
- Manual or physical interventions for services without end-to-end solutions can frustrate user experience.

Annex 3: Additional data from GSMA surveys conducted for this study

3A
Factors contributing to the low level of adoption of e-government services based on level of education

	No formal education		Primary		Secondary		Degree & above	
	Male	Female	Male	Female	Male	Female	Male	Female
Difficulty reading and writing	13%	38%	4%	8%	1%	2%	-	-
Don't know enough about the service	25%	29%	45%	47%	32%	32%	8%	18%
Don't have right kind of phone to use the services	13%	12%	8%	13%	8%	10%	8%	-
I don't feel confident using these services on my phone	13%	9%	6%	3%	4%	8%	-	-
I prefer to do these things in person	-	9%	22%	13%	17%	15%	38%	29%
Not relevant	-	3%	8%	11%	11%	16%	15%	29%
Difficulty in using my mobile to access the service	-	-	4%	4%	11%	12%	15%	6%
I am concerned about information security and online safety	-	-	-	1%	4%	2%	-	12%
Poor network coverage or speed	25%	-	-	-	8%	2%	8%	-
No money for data	13%	-	4%	-	1%	2%	8%	6%
	100%	100%	100%	100%	100%	100%	100%	100%



3B
Factors contributing to the low level of adoption of e-government services based on age

	18-24 years		25-35 years		36-49 years		50-64 years		65+ years	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Irrelevant	10%	37%	15%	13%	4%	7%	9%	10%	-	-
I don't know enough about the service	35%	29%	26%	33%	38%	38%	45%	37%	33%	50%
I prefer to do these things in person	30%	14%	19%	16%	19%	17%	14%	13%	17%	25%
Don't have right kind of phone to use the services	5%	11%	11%	8%	9%	9%	9%	13%	-	25%
I have difficulty in using my mobile to access the service	5%	6%	6%	8%	9%	8%	9%	7%	33%	-
I have difficulty reading and writing	5%	3%	4%	7%	2%	11%	-	10%	-	-
Poor network coverage or speed	10%	-	6%	2%	4%	-	-	-	-	-
I don't feel confident using these services on my phone	-	-	2%	8%	11%	6%	5%	7%	-	-
I am concerned about information security and online safety	-	-	6%	2%	4%	-	-	-	-	-
No money for data	-	-	4%	2%	-	1%	9%	3%	17%	-
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

3C
Factors contributing to the low level of adoption of e-government services based on source of income

	Full-time employment		Part-time employment		Self-employed		Pension	
	Male	Female	Male	Female	Male	Female	Male	Female
I prefer to do these things in person	26%	30%	-	25%	19%	14%	50%	-
I don't have enough information about the service	39%	26%	14%	50%	35%	35%	-	50%
Irrelevant	13%	13%	43%	-	7%	13%	-	-
It is not easy to use on a mobile	4%	13%	-	8%	10%	7%	-	50%
I have difficulty reading and writing	9%	4%	-	8%	2%	9%	-	-
I am concerned about information security and online safety	-	4%	-	-	2%	2%	-	-
I don't feel confident using these services on my phone or I am worried about making a mistake	-	-	-	8%	6%	7%	-	-
Poor network coverage or speed	4%	-	14%	-	6%	1%	-	-
I don't have the right kind of phone to use the services	-	9%	29%	-	8%	10%	50%	-
No money for data	4%	-	-	-	4%	2%	-	-
	100%	100%	100%	100%	100%	100%	100%	100%

3D

Factors contributing to the low level of adoption of e-government services based on locality

	Urban		Rural	
	Male	Female	Male	Female
I don't know enough about the service	32%	31%	37%	40%
I have difficulty reading and writing	1%	5%	5%	15%
I don't have the right kind of phone to use the services	7%	10%	10%	11%
I prefer to do these things in person	23%	20%	15%	8%
I don't feel confident using these services on my phone or I am worried about making a mistake	4%	5%	6%	7%
Irrelevant	15%	16%	3%	9%
It is not easy to use on a mobile	11%	8%	5%	6%
I don't have enough data to use the services via the internet	2%	2%	5%	1%
I am concerned about information security and online safety	1%	2%	3%	1%
Poor network coverage or speed	2%	1%	11%	1%
	100%	100%	100%	100%

3E

Non-users of e-government services willing to use e-services in the future by age

	18-24 years		25-35 years		36-49 years		50-64 years		65+ years	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Yes	50%	43%	69%	56%	71%	62%	45%	52%	50%	25%
No	9%	19%	6%	9%	6%	12%	-	13%	17%	-
Undecided	41%	38%	25%	35%	23%	26%	55%	35%	33%	75%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

3F

Non-users of e-government services willing to use e-services in the future by locality

	Urban		Rural	
	Male	Female	Male	Female
Yes	60%	59%	66%	48%
No	6%	10%	6%	15%
Undecided	34%	31%	28%	37%
	100%	100%	100%	100%

3G

Factors impeding mobile money use - (non-users by gender and education level)

	None		Primary		Secondary		Degree/ Postgraduate	
	Male	Female	Male	Female	Male	Female	Male	Female
Inadequate knowledge about mobile money or support on how to use it	27%	50%	-	14%	-	3%	10%	-
High cost of using mobile money	18%	21%	50%	71%	37%	41%	20%	33%
Security and safety concerns	27%	14%	38%	-	21%	29%	20%	33%
Poor network coverage and unreliable mobile money issues	27%	14%	13%	14%	37%	24%	40%	33%
I prefer to use cash	-	-	-	-	5%	-	10%	-
Irrelevant	-	-	-	-	-	3%	-	-
	100%	100%	100%	100%	100%	100%	100%	100%

3H

Factors impeding mobile money use - (non-users by age)

	18-24 years		25-35 years		36-49 years		50-64 years		65+ years	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
High cost of using mobile money	50%	50%	17%	46%	36%	29%	100%	100%	-	-
Security and safety concerns	50%	17%	17%	19%	32%	29%	-	-	-	-
Inadequate knowledge about mobile money or support on how to use it	-	17%	11%	12%	8%	21%	-	-	100%	-
I prefer to use cash	-	-	6%	-	-	-	-	-	-	-
Irrelevant	-	-	-	-	-	-	-	-	-	100%
Poor network coverage and unreliable mobile money issues	-	17%	50%	23%	24%	21%	-	-	-	-
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

3I

Factors impeding mobile money non-users - (by locality)

	Urban		Rural	
	Male	Female	Male	Female
High cost of using mobile money	21%	37%	42%	43%
Inadequate knowledge and support	4%	3%	13%	29%
Irrelevant	-	-	-	4%
Security and safety concerns	38%	37%	13%	7%
Poor network coverage and unreliable mobile money issues	33%	23%	29%	18%
I prefer to use cash	4%	-	4%	-
	100%	100%	100%	100%

Annex 4a: Survey and sampling approach

S/N	DETAILS
1	<p>Quantitative survey: Sample size = 1,339</p>
	<p>A multi-stage stratified cluster sampling procedure was adopted for this study:</p> <ul style="list-style-type: none"> ✔ Stage 1: Three districts (strata) each from Greater Accra, Ashanti, and the Northern regions were randomly selected in the first stage. ✔ Stage 2: Selected three communities (clusters) from each of the chosen districts in the given regions, containing MSME women and men, and women and men-led contributors to household income, making a total of nine clusters. ✔ Stage 3: Respondents were selected using a random Probability-Proportional-to-Size sampling procedure based on regional, district, and community population size distributions from the most recent Ghana Living Standards Survey 7. <p>A structured electronic questionnaire, designed in English and translated into four local languages (Twi, Ga, Dagbani, Gonja, and Kasem), was administered to respondents.</p>
2	<p>Focus group discussion: Total = 18 groups of four to six participants</p>
	<p>The qualitative consultations included group discussions with the target participants in eight communities spread across all three regions. The following criteria were used to guide the selection of research sites, ensuring that a diverse mix of communities and respondents were represented in the study:</p> <ul style="list-style-type: none"> ✔ Geographical representation – at least one urban and rural site per region ✔ Users and non-users of e-government services ✔ Users and non-users of mobile money services ✔ Women as economic agents or entrepreneurs ✔ Women as lead contributors to household income

Annex 4b: Demographics

Due to the study's primary focus on women, there was a skew towards females in the overall sample: 64% of the survey sample were women and 36% men.

Indicator	Demographic	Proportion of Female	Proportion of Male
Age	18-24 years	12%	11%
	25-35 years	38%	34%
	36-49 years	36%	37%
	50-64 years	12%	14%
	65+ years	2%	4%
	Total	100%	100%
Education	None	16%	10%
	Primary	34%	28%
	Secondary	43%	46%
	Degree & above	7%	16%
	Total	100%	100%
Source of income	Self-employed	60%	58%
	Others	40%	42%
	Total	100%	100%
Locality	Urban	54%	52%
	Rural	46%	48%
	Total	100%	100%
Region	Ashanti	31%	35%
	Greater Accra	42%	35%
	Northern	27%	30%
	Total	100%	100%

Annex 4c: Key informant interviews

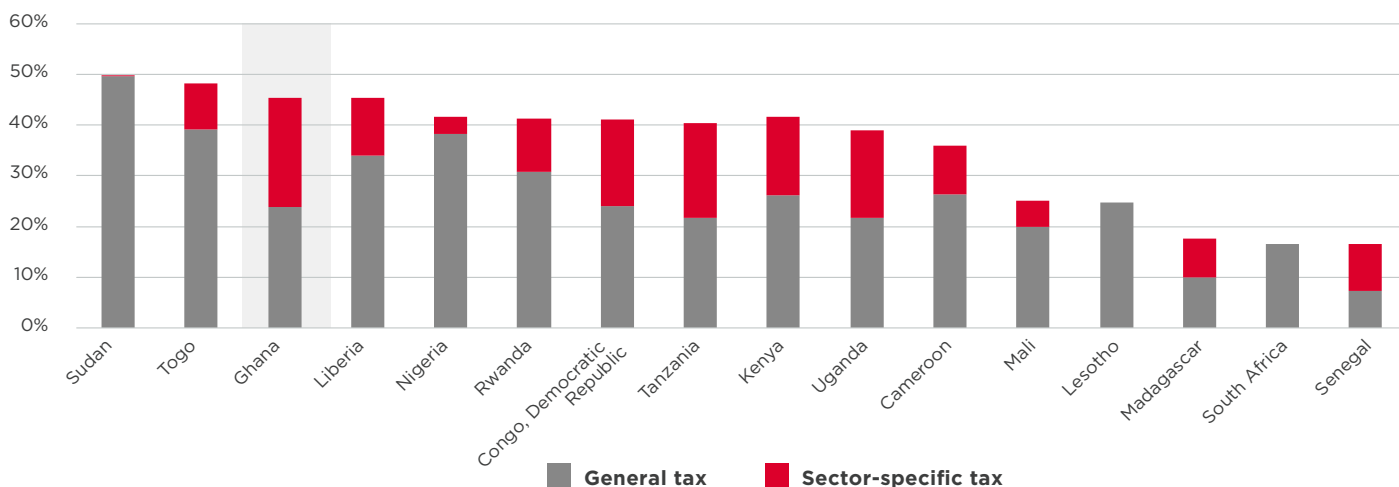
S/N	Name of organisation
1	The Ministry of Gender, Children and Social Protection/LEAP Management Secretariat
2	Ministry of Finance and Economic Planning
3	National Information Technology Agency
4	National Health Insurance Authority
5	Ghana Interbank Payment and Settlement Systems Limited
6	Ghana Investment Fund for Electronic Communications
7	Ghana Chamber of Telecommunications
8	World Bank
9	The United Nations Capital Development Fund
10	World Food Programme
11	Ghana Fintech and Payments Association
12	Abantu for Development
13	United Nations International Children's Emergency Fund

Annex 5: Supporting digital policies

Policies	Description
ICT for Accelerated Development policy (ICT4AD) – 2003	The policy provides rolling plans up to 2022 to target the development of the ICT sector and industry as well as use ICT as a broad-based enabler of developmental goals, with emphasis on the development, deployment and exploitation of ICTs to aid the development of all other sectors of the economy.
Electronic Communications Amendment Act 2011	Provides regulation of electronic communications, broadcasting, the use of the electro-magnetic spectrum and related matters.
National Broadband Policy (2012)	Aims to facilitate digital and virtual services delivery that will also promote seamless application of digitalisation.
Data Protection Act (2012)	Regulates the processing and protection of personal information that can be acquired, kept, used or disclosed by data controllers and data processors by mandating compliance with certain data protection principles.
National Cyber Security Policy & Strategy 2015	Establishes a series of frameworks that ensure the effectiveness of cybersecurity controls over vital assets.
National Financial Inclusion and Development Strategy (NFIDS) 2017-2023	Sets out financial inclusion targets to help create economic opportunities for underserved populations and reduce poverty.
National Development Plan (2018 – 2057)	Ghana's long-term development plan to build an industrialised, inclusive and resilient economy, create an equitable, healthy and disciplined society, build safe, well-planned and sustainable communities and build effective, efficient and dynamic institutions.
National Payment Systems Strategic Plan (2019-2024)	Commits the government to priorities that create a robust payment infrastructure.
Cash-lite Roadmap	Provides steps to build an inclusive digital payment by promoting consumer protection, better access to digital financial services, enabling regulation, etc.
National Digital Financial Services Policy 2020	Outlines the government's vision for the country moving into the next decade, to build on existing technological gains and to create an innovative and mature digital financial ecosystem.
Ghana Integrated Digital Transformation Blueprint	Framework detailing the MoCD's current digital initiatives and future digital transformation agendas.
Ghana Digital Economy Policy (draft)	See Section 2.

Annex 6: Taxes and fees

Taxes and fees as a proportion of market revenue (selected African countries).



Description	Base	Rate
General taxes		
VAT	Imported equipment, devices & services	15%
Customs duty	Handsets, SIM cards, network equipment	0-30%
Corporation tax	Profit	25%
National fiscal stabilisation levy	Profit	2.5%
Ghana Education Trust Fund Levy	Revenue	2.5%
National health insurance levy	Revenue	2.5%
COVID levy	Revenue	1%
Mobile sector regulatory fees		
National Communications Authority revenue share	Annual revenue	1%
Ghana Investment Fund for Electronic Communications revenue share	Annual revenue	1%
Numbering fee	Per phone number	Up to 0.5% per number
NCA 6% cents share	Annual revenue	0.06%
Microwave frequency	Fixed amount	Per link
Sector specific taxes		
Communication service tax	Calls, SMS, data, activation and interconnection	5%
E-levy on mobile money	Mobile money P2G transaction value and withdrawal value	1%

Source: Penteriani, G. (2023). [The E-levy in Ghana: Economic Impact Assessment](#), GSMA

Annex 7: Glossary

Connectivity	Refers to connection to the internet or other communication networks.
Digital economy	Incorporates all economic activity reliant on or significantly enhanced by using digital means, including technologies, infrastructure, services and data.
Digitalisation	Enabling or improving social, business and government processes by leveraging digital technologies and digitised data.
Digital skills/digital literacy	Skills needed to use digital devices, communication applications and networks to access and manage information, from basic online searching and emailing to specialist programming and development.
Digital transformation	The economic and societal effects of digitalisation.
E-government	Involves using ICT to improve processes within the government as well as for the efficient delivery of services to beneficiaries, such as citizens, businesses, and other organisations in all sectors.
Mobile internet	3G, 4G or 5G technologies.
Mobile money	<p>A service is considered a mobile money service if it meets the following criteria:</p> <ul style="list-style-type: none"> – A mobile money service includes transferring money and making and receiving payments using a mobile phone. – The service must be available to the unbanked, for example, people who do not have access to a formal account at a financial institution. – The service must offer a network of physical transactional points, which can include agents outside of bank branches and ATMs, that make the service widely accessible to everyone. The agent network must be larger than the service’s formal outlets. – Mobile banking or payment services (such as Apple Pay and Google Pay) that offer the mobile phone as just another channel to access a traditional banking product are not included. – Payment services linked to a traditional banking product or credit card, such as Apple Pay, Google Pay and Samsung Pay, are not included.
P2G	For this study, P2G payments are defined as any payment from an individual or a business (payer) to a public entity (payee), including payments for public services, taxes and utility services. Such payments can be collected by public entities at the local, regional and national level.

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