

Impact of Digital Financial Technology on Women in Sierra Leone. Case Study: Women in the Western Area of Sierra Leone

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Abstract: *Digital financial technology (DFT) is the use of information technology and communication to complete a series of financial transactions such as: payment, online lending, enquiries, crowdfunding, remittances, insurance etc. Digital financial technology is a key enabler to reduce extreme poverty and being able to have access to a transaction account is a first step toward broader financial inclusion, since a transaction account allows people to: store money, make payment, access to credit facilities, send and receive payments. Globally, women in low medium income countries (LMICs) are 33 percent less likely than men to have a mobile money account. In Sierra Leone, despite having 14 commercial banks, 17 community banks and above 50 active microfinance institutions (MFIs), five of them deposit taking, three Mobile Money Operators, and 59 Financial Services Associations (FSA), account ownership among the adults' population, especially women, in Sierra Leone remain low. This is because most financial institutions are concentrated in the capital, Freetown, and secondary urban areas, leaving most people in other parts of the country cut - off from the financial system. Reasons include the high operating cost for institutions going into the rural and under - served areas of the country. The adoption rate to financial technology in Sierra Leone has been gradually improving over the years. However, faced with challenges such as requirement to open an account. Account opening requirement is an impediment for a very large number of the population, as banks and mobile money operators requires one to have valid national ID, proof of address and passport pictures in some cases to have an account opened. These requirements in most cases cannot be fulfilled by women as a result of their economic status that does not allow them to obtain accounts registered in their names. They are therefore found using mobile money accounts registered in other names which could further down the chain serve as a bottleneck in the entire chain. This research follows a mixed method of quantitative and qualitative approach. The study depict that women are significantly more likely to rely on others when using financial technologies. Without concerted efforts to reduce women's reliance on others, this is likely to limit the way they engage platforms and services. More needs to be done to provide training resources to women at the point of signing up to DFT platforms and ensure the information they receive is comprehensive and correct.*

Keywords: Digital financial technology (DFT), Inclusive digital financial service (IDFS). Information technology, low medium income countries (LMICs), Global system for Mobile Communications (GSMA), microfinance institutions (MFIs), Mobile Money.

1. Introduction

Digital financial technology (DFT) is the use of information technology and communication to complete a series of financial transactions such as: payment, online lending, enquiries, crowdfunding, remittances, insurance etc. Inclusive digital financial service (IDFS) deploys low cost - saving digital means to reach financially excluded and underserved populations with a range of digital financial technologies suited to their needs and are responsibly delivered affordably.

Digital financial technology is a key enabler to reduce extreme poverty and being able to have access to a transaction account is a first step toward broader financial inclusion, since a transaction account allows people to: store money, make payment, access to credit facilities, send and receive payments etc. This can only be achieved using DFT for which account ownership is a fundamental requirement. Account ownership is the gateway that equips men and women to use digital financial services in a way that facilitates development. Owners of accounts whether those accounts are with a bank or regulated institution such as credit unions, microfinance institutions, or mobile money service providers are able to store, send, Pay and receive money. It also enables the owners to invest in health, education, and businesses. Account holders are better able to avoid a slide into poverty because they find it easier to rely on savings or receive financial resources from friends or relatives in the event of a financial emergency. Individuals and businesses that have access to DFT services for payments, savings etc. are better

able to withstand financial shocks than those that do not. People without by contrast, manage their money using informal mechanisms that may be less safe, less reliable, and more expensive.

1.1. Country Context

Sierra Leone officially the Republic of Sierra Leone, informally Salone, is a country on the southwest coast of West Africa. It is bordered by Liberia to the southeast and Guinea surrounds the northern half of the nation. Sierra Leone has a total area of 71, 740 km² and a population of 7, 548, 702 (Male = 3, 727, 747 (49 percent) Female = 3, 820, 955 (50.6 percent) with an average annual population growth rate of 2.1 percent from 1963 when the first post - independence census was held.

The country is divided into four first - order administrative divisions three provinces (Eastern Province, Southern Province, Northern Province and one area called the Western Area). The provinces are further sub - divided into 16 districts at second - order level. The Country is a secular nation with the constitution providing for the separation of state and religion and freedom of association. Religious tolerance in the West African nation is very high and is generally considered a norm and part of Sierra Leone's cultural identity. (Permanent Committee on Geographical Names PCGN, 2014)

1.2 Problem Analysis

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As mobile money became a vital tool in supporting livelihoods, those without access found themselves even more marginalized. For women, including women entrepreneurs, had a disproportionate impact. Globally, women in low medium income countries (LMICs) were 33 percent less likely than men to have a mobile money account (Lindsey, D.2020). Global system for Mobile Communications (GSMA) Consumer Survey in ten LMICs found wide - ranging gender gaps in account ownership, from 7 percent in Kenya to 71 percent in Pakistan (Christopher L et al, 2022).

In Sierra Leone, despite having 14 commercial banks, 17 community banks and above 50 active microfinance institutions (MFIs), five of them deposit taking, three Mobile Money Operators, and 59 Financial Services Associations (FSA), account ownership among the adults' population in Sierra Leone remain low. This is because most financial institutions are concentrated in the capital, Freetown, and secondary urban areas, leaving most people in other parts of the country cut - off from the financial system. Reasons include the high operating cost for institutions going into the rural and under - served areas of the country.

Among the numerous research work currently available on financial inclusion and DFT in Sierra Leone. There is little information on gender participation rate most especially on that of the female sex that represent 51 percent of the country's total population. Access by women to DFT will help to achieve Sustainable development Goals (SDGs) for Sierra Leone. It is therefore imperative at this point to clearly be able to understand how women's lives are impacted by digital financial technologies. Branchless banking and Digital Financial technologies (DFT) hold promise to overcome this challenge.

In Sierra Leone, the adoption rate to financial technology has been gradually improving over the years. However, faced with challenges such as requirement to open an account. Account opening requirement is an impediment for a very large number of the population, as banks and mobile money operators requires one to have valid national ID, proof of address and passport pictures in some cases to have an account opened. These requirements in most cases cannot be fulfilled by women as a result of their economic status that does not allow them to obtain accounts registered in their names. They are therefore found using mobile money accounts registered in other names which could further down the chain serve as a bottleneck in the entire chain. This piece of work is therefore targeted at assessing the impact of digital financial technologies on women in Sierra Leone as a first step to achieve financial inclusion of women in Sierra Leone through DFT.

1.3 Research Goal and Objectives

The goal of this work is to contribute to the already established gains made in the area of financial technology in Sierra Leone with focus on female gender specific issues for improve livelihood and equal opportunities in the DFT space.

The following objectives are pertinent to this study: (a) To determine adoption Rate of DFT, (b) To determine the level of DFT Education Among Women, (c) To assess policies

supporting women participation to DFT and (d) To evaluate women perception about DFT transaction cost

2. Research Methodology

2.1 Research Design

In this design the descriptive qualitative and descriptive quantitative techniques were used: Descriptive qualitative provides an insight as to how financial technology have impacted the lives of women in Sierra Leone and the descriptive quantitative helps to clearly outline cause of the slow adoption rate to financial technologies by women

2.2 Research Approach

This research follows a mixed method of quantitative and qualitative approach. This approach allows for the concurrent analysis of both quantitative and qualitative data. Quantitative and Qualitative data collection was done through the admission of close - ended and open ended questionnaire for respondents to give additional information relevant to the study.

The data collected was statistically analyzed using SPSS

2.3 Area of Study

Sierra Leone is a Country in West Africa bordered by Libera and Guinea. The study is particularly conducted in the Western Area of Sierra Leone that comprises of Western Area Urban and Rural District.

2.4 Study Population

In this study the target population was one hundred (100) women of ages 18 years and above were randomly selected from the western area of Sierra Leone. The randomly selected women are asked to complete a questionnaire that is used to analyze the impact of DFT on their lives.

2.5 Sampling Design and Procedure

The researcher adopted simple random sampling to give potential respondents an equal chance of being involved in the study. In the process of sampling, the researcher kept in mind different groups of women to meet the objective of the study. This is achieved by ensuring women are randomly selected across the entire study area i. e., Western Area Urban and Rural District.

Table 1: indicate number of respondents in the western area urban and rural District of Sierra Leone

NO	Area	Number of Respondants	Sex
1	Western Urban	50	Female
2	Rural District	50	Female
	TOTAL	100	

2.5 Data Collection Methods and Instruments

In this study, the researcher employs data collection methods that is based on the administration of questionnaires and Key Informant Interview (KII). These techniques were employed by the researcher to get in - depth information on the impact

of DFT on women in Sierra Leone. The Questionnaire was design for scheduled interview, for which most of them were self - administered with both open and closed ended questions to the women. The questionnaire focused on meeting the research objectives and answering the research questions. The Key Informant Interview (KII) technique was used by the researchers for women that cannot read. Hence, the questions were read out, interpreted and responses on how financial inclusion and DFT have impacted the lives of women in Sierra Leone and such responses were recorded accordingly for further analysis and interpretations.

2.6 Data Analysis Procedures

Data was analyzed by using Excel and Statistical package for Social Sciences (SPSS) and presented in tables and graphs for interpretations.

3. Discussions of Results

3.1 Adoption rate to DFT by occupation

Figure 1 shows an analysis of occupation as against DFT usage among women i. e., clearly pointing out the level of usage of DFT based on their various occupations.

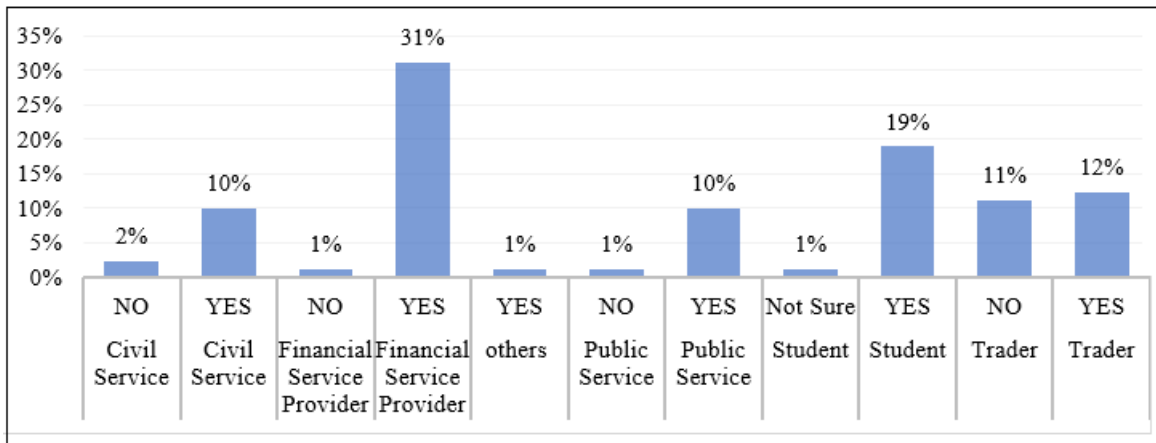


Figure 1: Occupation and DFT Usage

The result obtains as captured in the graph above shows that more women in the financial services industry are using DFT representing 31 percent of the entire result obtain, followed by students representing 19 percent of the total result obtain and traders 12 percent. Only 10 percent of women in Civil service are using DFT and 1 percent in Public service. Hence creating the opportunity to convert women in the civil and public service space of Sierra Leone. It is revealed that more women in the financial services industry are knowledgeable in DFT, they know exactly the purpose for which DFT channels are used. However, only 12 percent of the total respondent who are traders indicated that they are using DFT and 11 percent indicated not using DFT.

In a separate study conducted by (Lowe et al, 2022) ‘Exploring women’s use of mobile money in Ghana’ indicated that there is an increase usage of mobile money by female entrepreneurs but more restricted to core services, such as sending or receiving payments. Findings suggest that most entrepreneurs’ mobile money users in the qualitative research mentioned that mobile money has made it easier to save, both in terms of the convenience compared to traditional savings channels and compared to saving in cash, which many felt was more difficult. The result in this study shows that 48 percent of total number of women traders interviewed are not

using DFT for transactions. This is showing a great opportunity to increase women traders using DFT in Sierra Leone to accept payment and Save through DFT platforms available.

Adoption Rate per DFT Channel.

Derived from data analyzed, the most frequently used channel by women in Sierra Leone taking western area as the study area is Unstructured Supplementary Service Data (USSD) widely accounting for usage performance of 47 percent, followed by mobile app of 28 percent and Automated teller Machine (ATM) of 11 percent. POS accounting for only 1 percent. Result clearly shows that a larger number of women are focus on the use of USSD compared to the other channels, POS usage being the very least among all the available channels. Only 1 percent and 2 percent are using mobile app and ATMs respectively and at the same time not willing to recommend such channels to potential users. Providers across various financial sectors has the opportunity to grow usage of other channels by women in Sierra Leone. This is because, over 90 percent of the women confirms that they are happy to introduce the channel they are using to potential users creating an opportunity for providers to deepen usage by using existing customers.

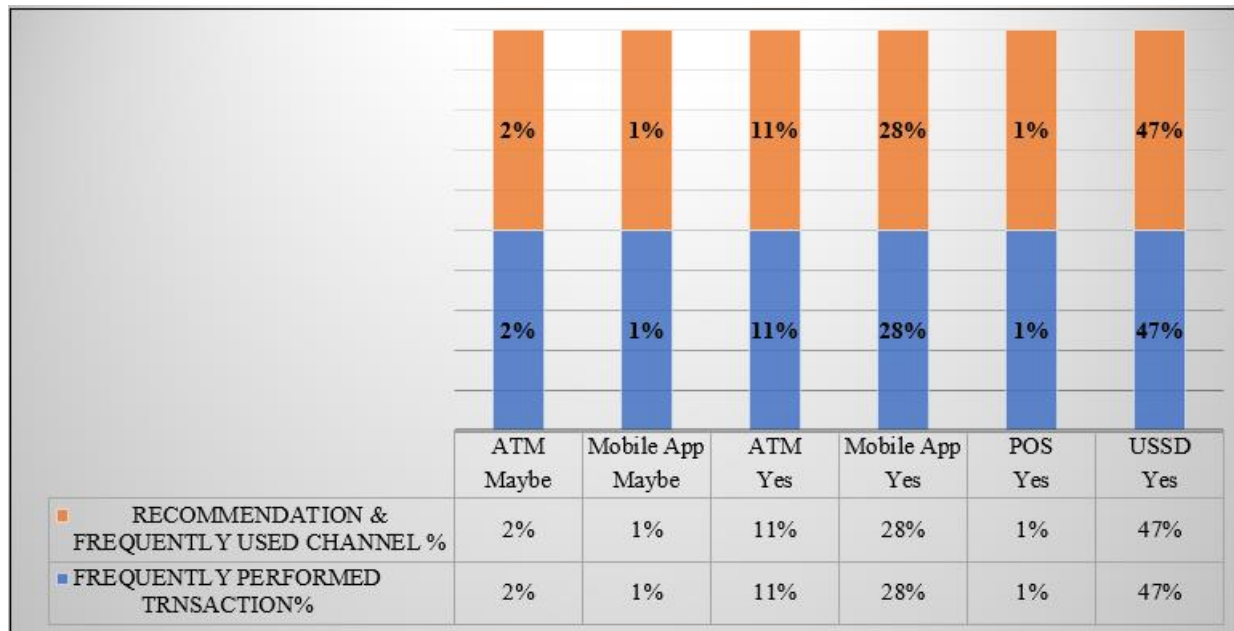


Figure 2: Channel Used and Frequently Performed transactions.

However, according to (Hanouch & Chen, 2015) stated that USSD is the primary mechanism for communication between customers and their mobile payment platforms in various markets, especially for unbanked and low - income consumers. Examples include M - Pesa in Kenya, Kash in Bangladesh, Wing in Cambodia, EasyPaisa in Pakistan and EcoCash in Zimbabwe. The result agrees with what is obtained in Sierra Leone as data analyzed in this research indicated that the most frequently used channel is unstructured supplementary service data (USSD) that does not require internet access and can be used on any mobile device. USSD has become the default channel to perform financial transactions such as cash withdrawals, Bill payment, airtime, data purchase etc.

3.2 Level of DFT Education

The level of education determines DFT awareness among women. It helps to identify transactions for which women requires help to perform i. e., they cannot perform without getting assistance from third parties which includes: agents, friends, family etc. In this study 49 percent indicated that they

require help to perform agent transactions 29 percent of the respondents said they do not require help to perform agent transactions. 8 percent of respondents using ATM stated that the requires help to do transactions on ATM followed by 7 percent for bill payment, 5 percent POS transactions and 2 percent card payment transactions. To depend on third party to perform DFT transactions comes with its own risk of fraud and losses as third parties always find ways of exploiting their victims. The increase dependency is because DFT Providers and their agents do not take time to educate the customers at the point of onboarding. The are more critical about adding to their customer base at the stage without paying keen attention to adequate training of customer to perform transactions afterwards.

In a publication on “Enabling Women’s Financial Inclusion through Digital Financial Literacy” by (Highet, 2020) stated that Women face unique risks: Besides having more to lose in the case of a mistake or a fraudulent transaction, women require more trust - building and may seek additional assurance from agents or frontline staff as they sign up for new digital products and services.

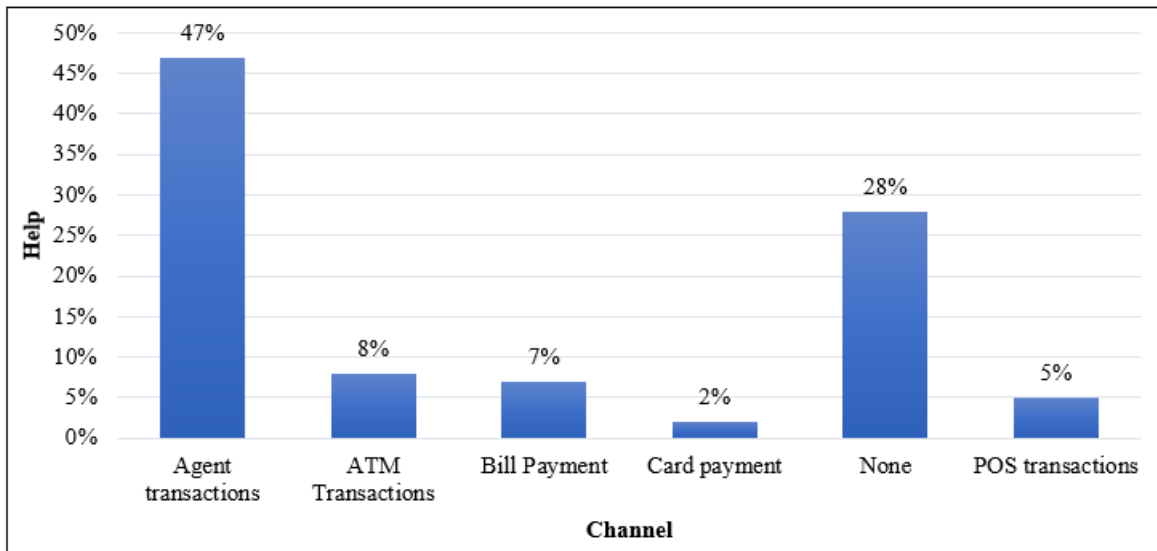


Figure 3: DFS Transactions for which help is required to perform

3.3 DFT Transaction Cost

Transaction cost refers to extra charge incurred by customer for performing a transaction using DFT. This is a value deducted from the transaction amount of the customer. In this study 48 percent of the respondents confirms that the charges for DFT transactions are high. However, 37 percent said the current charges are low and 11 percent indicated they are not sure of what to indicate whilst that of 3 percent said that the pricing structure is fair and that charges needs to be maintained. This is because prices continue to vary across various channels and at some point getting users confuse. A woman said that “at any time I buy electricity through a mobile money agent in my neighborhood, I am charged extra fees of two Leones (NLe2.00) thereby increasing the cost of my transactions. This has increased my cost of buying electricity for my prepaid meter” the above is a common occurrence in Sierra Leone most especially by umbrella agents on the street corners.

According to (William and Brian, 2022) in a study in Nigeria stated that the price of digital financial services (DFS) can be an obstacle to its adoption and regular use, particularly in low - and - middle income countries (LMIC). High fees and lack of pricing transparency may be a barrier to accessing financial services, especially for low - income and rural populations. Sighting Nigeria, where fees incurred for using digital financial services is lower than in neighboring countries, that is because the Central Bank issued regulations to limit customer fees. However, circumstantial evidence suggests these regulations are not always followed. Researchers conducted a transaction audit to determine whether digital financial services (DFS) providers comply with pricing regulations. The results demonstrate that consumers sometimes pay fees that exceed caps set by the Central Bank. These results have wider implications for consumer welfare, inclusion, and trust in DFT system.

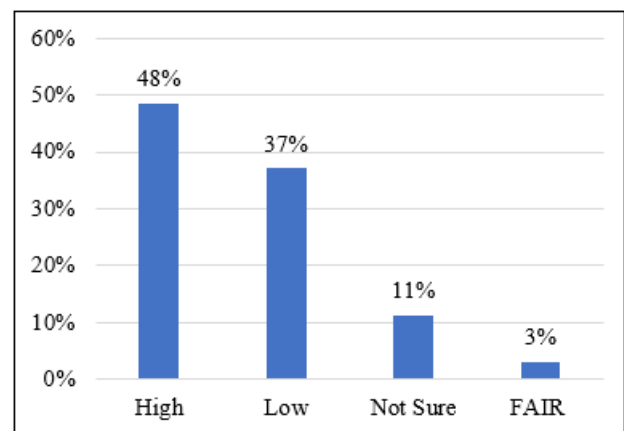


Figure 4: DFS Transaction Cost

3.4 Policies Supporting Women Participation in Digital Financial Technologies

In Sierra Leone Policies are set to gain access and also govern the behavior of participants. In the DFT space it is an important aspect of digital financial services. They are created to ensure that the people in a particular environment operate in a way that is consistent with its values and goals. Policies can be used to guide people on how they should behave in certain situations. They can also be used to guide customers on what they should expect from the Providers. In DFT space there are policies that guides operations. The study assesses the policies that guides DFS space in Sierra Leone and how it affects the female gender. In Sierra Leone many of the women could meet the requirement to access DFT because voter card is widely accepted. However, totally ignorant of any other policies. This has made many women to have access but ignorant of what guides the DFT operating environment. In this study 75 percent of the respondents confirms that they are not aware of rules guiding the DFT space leaving the users at the mercy of providers and their agents because of not understanding what to do in the case of issues that may arise. 19 percent said they are aware of some kind of rules that guides the DFT space in Sierra Leone, such as the Consumer protection guidelines etc. 6 percent indicated that they are not sure. The level of policy awareness among women in Sierra

Leone is low because much is not being done to get the consumers informed about the policies guiding DFT space.

In a study prepared by Haitham et al, 2020 for the G20 Global Partnership for Financial Inclusion stated that having an official identity (ID) either documentary or digital is often a requirement for obtaining regulated financial and mobile services. The report further stated that globally, one in five unbanked women say a lack of ID is one of the reasons they do not have an account and that Countries should work toward implementing policies to remove barriers faced by women. Access to official ID impose extraneous conditions on adult women using ID to access financial services.

4. Conclusions

The study depict that women are significantly more likely to rely on others when using financial technologies. Without concerted efforts to reduce women's reliance on others, this is likely to limit the way they engage platforms and services. More needs to be done to provide training resources to women at the point of signing up to DFT platforms and ensure the information they receive is comprehensive and correct. For example, mobile money providers could incentivize agents to provide hands - on support to women to demonstrate how the services work and how to use independently. Supporting women to use the full range of digital financial technologies independently is likely to deliver substantial and sustainable benefits to the nation as they can be used to onboard the younger generation of men and women. The trend will make adoption easier and faster as the country moves on with her financial inclusion drive.

The study also reveals that the popular channel being used by women for transactions is Unstructured Supplementary Service Data (USSD). Though an old technology but still being widely used for financial transactions most especially by women. Other Channels like mobile app, browser base, POS and ATM usage remains low among women. Card usage on ATM and POS are only frequently found among literate women. This gives an opportunity for cross selling of other channel that can help the female sex improve DFS inclusion rate.

Attention to the elements of financial infrastructure, particularly retail payments, that create a better basis for the expansion of the usage of digital financial technologies by women is appropriate. Today a very large portion of the transactions performed by women are cashed based totally leaving out merchant payment. Hence, leaving the economy with a lot of cash. Moving towards cashless economies requires enhancement of merchant payment services on DFT platforms that support payment. This will reduce the risk of carrying cash at the last mile.

DFT has improve on savings and access to funds by the women in Sierra Leone. Seeing that over 90% of the women in the western area of Sierra Leone do have a wallet use to receive funds from Friends and Families.

The use of digital financial technologies to increase women's access and usage of financial services and consequently increase women's economic participation, autonomy and

empowerment is far from fully realized. Authorities have numerous opportunities to play an enabling role in the emergence and growth of digital financial services that will help meet the needs of underserved and unserved clients, especially women. To achieve this DFT education through awareness is ultimate, Awareness on the type of products and services and policies guiding the DFT space. In this study there is an increase in DFT usage among those women in the financial services industry but very low in other sectors.

5. Recommendations

Following the findings of the study, the following specific recommendations are hereby suggested for adoption by various stakeholders in the DFT space. Digital financial technologies are seen to be growing among women in Sierra Leone leading to increase satisfaction rate among women. However, Stakeholders should see this has an opportunity to grow the base for women use of digital financial technologies by undertaking the right investment.

- 1) Cash transfers are the most familiar type of by women in Sierra Leone, even though there are many services available in the market that providers have deployed for customers, but did not see an uptake for products such as bill pay, airtime, data vending, merchant payment etc. Only few are interested in these other product and services. Over 90% are only interested in cash - out, thereby creating a gap further downstream resulting to having more cash for payment in the market which is expensive to the economy. As we work towards cashless economy, payment options should be made available by improving on merchant payment across the country which will reduce cash transactions. This can be achieved by introducing regulations to reduce the flow of cash and cutting down of fees associated to merchant and vendor payment. Investment into infrastructure is also key to reaching the last mile and accessibility most especially when it comes to accessing mobile device, which is the main tool used for DFT transactions.
- 2) Providers should train their agents to deliver services beyond just performing transactions but also see them as a change factor by enabling them to be in position to educate the customer on how to perform transactions. They should also provide information about product and services rendered by various providers in the market. Agents should be a reservoir of knowledge when it comes to digital financial services. Furthermore, providers should see the need to encourage the recruitment of more female agents. Many of the women, most especially older women are not comfortable engaging opposite sex due to religious and social beliefs.
- 3) The market is totally empty of knowledge about policies guiding DFT operations in Sierra Leone. Policy makers should clearly communicate policies on the use of various platforms, by using the right channels will attract women and improve understanding of DFT regulations and will enable them to understand who to contact if there are issues.
- 4) Transaction cost is said to be high. this is because agents are caught fraudulently adding unapproved fees. To eradicate this threat of additional fees in the market on DFT transactions a policy should be introduced to harmonized fees for similar transactions across all

platforms. Such harmonize prices should be made known to users most especially women through targeted communication channels that are understood by women. Example cash withdrawal at agent, ATM be harmonize and monitored for penalties if anyone is found wanting. This will discourage agents from introducing informal fees in the system.

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