AN EXPLORATION OF THE GENDERED NATURE OF FISHERFOLK ADOPTION AND USAGE OF MOBILE MONEY SERVICES

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POWER TO THE FISHERS PROJECT

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Cover Photo

Photo taken during fieldwork in the Shama District – A fish processor smoking fish and displaying her wooden money box [Credit: Dorothy Addo (CDO)]

ACRONYMS

CDO	CERATH Development Organization
EU	European Union
PTF	Power to the Fishers
CSO-RISE	Civil Society Organization in Research and Innovation for Sustainable Development
GoG	Government of Ghana
GSS	Ghana Statistical Service
CRC	Coastal Resources Center
FoN	Friends of the Nation
WB	World Bank
SDGs	Sustainable Development Goals
IFC	International Financial Corporation
NFIDS	National Financial Inclusion and Development Strategy
NBFIs	Non-Banking Financial Institutions
GSMA	Global Systems for Mobile Communications
IMF	International Monetary Fund
AFI	Alliance for Financial Inclusion
CGAP	Consultative Group to Assist the Poor
DFS	Digital Financial Services
ATMs	Automated Teller Machines
SMS	Short Message Service
QR	Quick Response
MoMo	MTN Mobile Money
UEW	University of Education, Winneba
COVID-19	Coronavirus Disease 2019
GHS	Ghanaian Cedis
NDMW	National Daily Minimum Wage
GCB	Ghana Commercial Bank *(formerly)*
KYC	Know-Your-Costumer

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ACKNOWLEDGEMENT

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EXECUTIVE SUMMARY

The need to broaden access to financial services is key to sustainable and inclusive development, as it has the potential to translate economic growth into shared progress and better livelihoods for the majority. This is more so for informal economies, the poor and women who are often disadvantaged in their access to financial services. Traditional financial service providers have often excluded such populations. The growth in financial technologies, however, has opened up opportunities for increased financial access for them. In Sub-Saharan Africa, where mobile money is the most widespread financial technology, it is driving financial inclusion and reducing the gender gap in account ownership. Thus, an exploration of mobile money adoption and use among coastal fisherfolk whose work is greatly dependent on women's labour and characterised by informality and low incomes is significant in understanding fisherfolk financial inclusion towards inclusive economic development.

CERATH Development Organization (CDO), under its European Union funded 4-year Power to the Fishers (PTF) project which aims at enhancing the socio-economic livelihoods of fishing communities within selected districts of the coastal savannah zones of Ghana conducted research into the financial inclusion of fisherfolk. The research explored the gendered nature of fisherfolk's adoption and usage of mobile money services. It aimed at examining the extent and degree of women and men fisherfolk's financial inclusion through mobile money in PTF project communities. The research which was conducted in twenty-six (26) communities across five districts in the Central and Western Regions of Ghana targeted both men and women in the sector as respondents. The study employed a mixed method approach. Three primary data collection techniques were employed – survey with a sample size of 500, informal conversations that allowed further understanding into fisherfolk answers to survey questions, and nine (9) expert interviews. The study defined financial inclusion via mobile money for fisherfolk in terms of individual access, and ability to effectively use appropriate services to meet their financial needs. It favoured a micro level analysis and centred the perspectives of the fisherfolk.

The findings generally speak in accord with the literature on the gendered nature of access and use of mobile money in Sub Saharan Africa including Ghana. The research reveals that mobile money account ownership is responsible for the financial inclusion of many women fisherfolk. Additionally, it confirmed a gendered gap in financial inclusion within the fishing communities. It revealed that financial inclusion through mobile money is happening at a faster rate for fishermen than it is for fish processors. Women fisherfolk are disproportionately excluded in both the access to and use of mobile money services with implication for their adoption of mobile money and for the quality of use for those who are able to access them. If this is not addressed, there will be a cycle of gendered financial exclusion manifested in the gender gap in account ownership and women's use of services towards the meeting of their financial needs despite the potential of mobile money for women's financial inclusion. The research also found that about a third of the respondents interviewed did not have access to any form of financial service. A majority of respondents signed on to mobile money services considered the service as convenient, safe and faster in money transactions. About 70% of the respondents frequently used their mobile money account to make payment, receive and send money, with only 19% using their account to save and 2% for borrowing. The research revealed access to mobile phones as the major barrier to mobile money adoption particularly for fish processors. In the quality of use of mobile money, the study found that the majority of fish processors, 62.14% were unable to operate their phones independently as compared to 47.73% of fishermen.

This report points to financial literacy trainings and fisherfolk capacity building in mobile phone technology use as a way to encourage their adoption of mobile money, and improve their quality of its use.

1. BACKGROUND AND INTRODUCTION

The need to broaden access to financial services or financial inclusion is considered key to sustainable and inclusive development, as it has the potential to translate economic growth into shared progress and better livelihoods for the majority (Gammage, et al., 2017; Triki & Faye, 2013; Allen, Demirgüç-Kunt, Klapper, & Martinez Peria, 2012; Donovan, 2012). However, there seems to be a situation of mainstream national and gloabal financial systems that exclude many people particularly the poor and women from accessing financial services in most developing countries. To rectify this, it has become important to understand the extent and degree to which marginalised sections of society are able to access and use financial services to promote inclusive and sustainable growth. Financial inclusion is used to reference individuals, households and businesses, regardless of their income levels, having access to and are able to effectively use the appropriate financial services they need to improve their lives. These services must add value, be affordable, secure and must be sustainably delivered. Thus, financial inclusion encompasses access, usage and quality of services with emphasis on often-excluded businesses and groups including rural dwellers, persons with disabilities and women. It is argued to enhance people's contributions to and gains from economic growth through improved formal access to credit, savings, and risk mitigation products (Triki & Faye, 2013).

Consequently, it is assuaging that the global growth in financial technologies has created opportunities for increased financial inclusion for the excluded (Gammage, et al., 2017). In Sub-Saharan Africa, where mobile money is the most significant and widespread financial technology, it is driving financial inclusion and reducing the gender gap in account ownership (Delaporte & Naghavi, 2019; Klapper, Ansar, Hess, Singer, & World Bank, 2019; El-Zoghbi, 2018). According to the 2017 Global Findex Report, mobile money adult account ownership in the region nearly doubled, to 21 percent, and with a narrower gender gap from 2014. Through mobile money, populations historically excluded from the formal financial sector because of factors including income levels, gender, location, type of economic activity, or literacy levels, can have access to varied financial services to meet their financial needs. Low-income earners, women, rural folks, informal workers and illiterates can easily access mobile money services.

Mobile money services are provided using cellular and distribution networks of mobile network operators thus they are offered over a mobile device connected to a mobile wallet account (Gammage, et al., 2017). In Ghana, the services are principally accessed via SIM-based short code applications[1] and SMS notifications, smartphone-based applications, and over-the-counter transactions. Account holders are able to conveniently receive payments into, and transfer money directly from a mobile wallet, as well as make transfers, deposits and withdraw cash from their account through mobile money agents at transactional points. With the high and growing mobile phone penetration, an enabling regulatory environment, and public acceptance of mobile money as a convenient means of payment, mobile money services in Ghana stand out favourably in meeting the financial needs of low-income earners especially women. In 2018, the country introduced the mobile money interoperability system which now allows seamless transfer of funds between mobile wallets across different mobile networks and different banks. Increasingly, traditional financial service providers and micro insurance institutions are in partnerships with mobile money providers to extend their outreach. Ghana also launched a digital financial services (DFS) policy in 2020 to ensure the effectiveness of COVID-19 related digital payment

[1] This is technically known as Unstructured Supplementary Service Data (USSD) or "quick codes".

measures, and to, among others, drive the success of the national financial inclusion goal. These have included the introduction of QR code acceptance technology to simplify mobile money payments.

Notwithstanding the expansion of mobile money services in the country and the potential for inclusive growth, research shows that their access and use remain unequal (World Bank, 2019). Women tend to face barriers in the access and use of the services to meet their needs. As the services rely on mobile communications networks, being able to access and use mobile technology conveniently, for instance, is essential for financial inclusion through mobile money. Hatt, James, and Lucini (2017) estimates that women are 16% and 17% less likely than men to own a mobile phone in Ghana, and in Sub-Saharan Africa respectively. Additionally, women, on average, use a smaller range of services than men do (Rowntree & GSMA,[2] 2019). What is its implication for women's access to mobile money services and how can they be helped to overcome barriers in the access and use of mobile money services to achieve their financial needs? The recent study conducted among coastal fisherfolks confirms the unequal gendered access to financial services and mobile technology. Financial inclusion through mobile money is happening at a faster rate for men fisherfolk than it is for women fisherfolk with a 5% gap. Additionally, in the use of mobile money services, the study found that women fisherfolk were about 15% more likely to be unable to operate their phones independently than the men fisherfolk were. The study revealed access to mobile phones as the major barrier to mobile money adoption particularly for women fisherfolk. Men fisherfolk who did not have mobile money were 8% more likely to own mobile phones than were women fisherfolk who did not have mobile money. Fewer women having access to financial services and making decisions about their use have consequences for women's benefits and contribution to growth in the sectors of the economies within which they participate. Women fisherfolk capacity building in mobile phone technology use is considered vital in encouraging their adoption of mobile money, and improving their quality of use.

Working within the fisheries sector which is greatly dependent on women, and seeking to address the questions above, CERATH Development Organisation (CDO) conducted an exploratory study on the gendered nature of fisherfolk's adoption and usage of mobile money services. The study is in keeping with the principal objective of CDO's European Union (EU)-funded Power to the Fishers (PTF) project to enhance the socio-economic livelihood of selected fishing communities in Ghana.[3]

1.1 Objectives of the study

The study aimed to examine the extent and degree of women and men fisherfolk's financial inclusion through mobile money in PTF project communities. Specifically, the study sought to:

i) Assess the gendered nature of access to financial services via mobile money among fisherfolk in PTF communities,

ii) Find out the gendered fisherfolk user habits and attitudes in the adoption and usage of mobile money services in meeting their financial needs, and

iii) Identify the barriers to mobile money adoption and usage among the women fisherfolk

[2] Global System for Mobile Association – the global association of mobile network providers
[3] Section 1.2, below, introduces CDO and the context of the PTF project.

1.2 Rationale and Limitations of the Study

Studies on mobile money services in Africa mainly address the broader economic aspects of mobile money and its potential for financial inclusion and development (Kim, 2020; Ahmad, Green, & Jiang, 2020; Kakra, 2018; Aker & Wilson, 2013), drivers for its adoption (Akinyemi & Mushunje, 2020; Senyo, Osabutey, & Seny Kan, 2020; Coulibaly, 2020), barriers to access and use (Rowntree & GSMA, 2019; Hunter, 2018; Zimmerman & Arnold, 2013; Dzokoto & Mensah, 2012), and fraud (Akomea-Frimpong, Andoh, Akomea-Frimpong, & Dwomoh-Okudzeto, 2020). There is also a considerable number of discussions on implications for women and gender equality (Delaporte & Naghavi, 2019; El-Zoghbi, 2018; Gammage, et al., 2017). The literature seldom contextualises different sectors of the economy that hosts excluded populations with implications for distinct financial needs that mobile money services address for users. This study is situated in the broader literature on the access and usage of mobile money services in terms of its potential for financial inclusion and meeting financial needs with specific attention on gender and fisherfolk in coastal fishing communities in Ghana. The term, financial needs, is used in reference to what fisherfolk 'use money for and how they pay for those costs' (Yu & Ibtasam, 2018).

As a study grounded in the PTF project, it contextualises financial inclusion in Ghana's coastal fishery sector and affords the project team the opportunity to influence changes towards the promotion of inclusive and sustainable development. It is also a window into the particular empirical nature of financial inclusion via mobile money among coastal fisherfolk in Ghana. The project context was important for the examination of the financial inclusion of an often-excluded population, the gendered nature of their inclusion through mobile money, and the identification of barriers to their inclusion.

As a limitation, this study and the discussions it presents are aimed at gender-sensitivity in financial inclusion with a focus on women's financial inclusion. Although there is a recognition for the need to challenge underlying barriers that constrain women's lives and livelihoods, and the need to improve men fisherfolk's financial inclusion as well, the study is limited to changes in the skills, knowledge and self-identity of women fisherfolk, and their access to and control over financial resources at the individual and collective level. This is necessary for limiting the effects of the barriers to women's financial inclusion, and as a building block towards gender transformative approaches to financial inclusion. The PTF project works mostly with fish processors who are essentially women, particularly towards the promotion of efficient fish smoking technologies and in the project learning groups. The study favours micro level analysis and centres fisherfolk perspectives in defining what their financial needs are and, in the adoption, and use of mobile money services towards meeting those needs.

1.3 The Context of the Power to the Fishers (PTF) Project and the Project Communities

This report documents findings from a research conducted by CDO among its PTF project participants and in the project communities. This section presents the PTF project and brief socio-economic profiles of the project districts which host the communities.

CDO is a developmental organization focused on rural and urban poor development in Africa through intervention pathways that include agriculture, fisheries, renewable energy and inclusive finance. The

organization is implementing an EU-funded four-year fisheries management project under the EU Civil Society Organization in Research and Innovation for Sustainable Development (CSO-RISE) programme. The project dubbed Power to the Fishers (PTF), is being implemented in twenty-six (26) communities across five districts in the Central and Western Regions of Ghana, and aims at enhancing the socio-economic livelihood of selected fishing communities in the coastal savannah zones of Ghana. It contributes to the overall vision of the CSO-RISE programme through youth and women empowerment and community-based capacity building towards sustainable fishing and fish processing practices. PTF focuses on five main intervention areas including stakeholder engagements for advocacy, promotion of efficient fish smoking technologies, capacity building and communities' education on climate change, enhancing fisherfolk access to social protection services, and documentation of project outcomes for learning and scaling. In the project, the conceptualisation of social protection involves both a protection and a promotion agenda and financial inclusion is recognised as a key element of the promotion agenda (Kidd & Development Pathways, 2020; Parker, 2010). As financial inclusion enables improvements in the terms by which individuals, households and groups take part in society, it is in essence an issue of inclusive and sustainable growth.[4]

The small-scale fisheries sector in Ghana within which the PTF project is contextualised employs about 2.5 million people within the coastal landscape (MOFAD, 2015). The sector is characterised by informality, high dependence on marine resources, seasonal and low-incomes, and often low educational levels. The sector is also characterised by a sharp gendered division of labour in which men essentially harvest fish, and women undertake post-harvest practices including processing and marketing. Therefore, the fisheries value chain is highly dependent on women's labour. Additionally, there are often very few alternative livelihoods in fishing communities. The PTF project Baseline Report (CDO, 2019) suggests savings and access to credit as important financial needs to fisherfolk in the project communities. Mobile money presents fisherfolk with a range of financial services they can employ to meet their financial needs including savings and access to credit.

In the first year of the project, CDO conducted a baseline survey and the report produced established the socio-economic contexts of fisherfolk in the project communities. This present report on the gendered nature of the adoption and use of mobile money services is the result of research that was conducted in the second year of the PTF project implementation. It points to areas that the project can work in towards influencing the quality of women fisherfolk's financial inclusion.

1.4 Organisation of the Report

The remaining part of the report contextualises this study in the literature on the assessment of financial inclusion of a population, the gender gap in financial inclusion and the barriers to financial inclusion via mobile money in Ghana. Following that is a presentation of the research methodology. The study employs a mixed method approach to data collection andanalysis. The subsequent session discusses the research findings. The last section concludes and recommends the capabilities of fisherfolk be prioritised to help women fisherfolk employ mobile money access and usage towards improvements in meeting their financial needs.

[4] See http://www.worldbank.org/en/topic/socialdevelopment/brief/social-inclusion

2. LITERATURE REVIEW

The present study is an exploration of the gendered nature of fisherfolk adoption and usage of mobile money services. This review of literature is informed by texts from development organisations and practitioners, some academic journals and blog posts. It centres the present study in the work on financial inclusion through mobile money services and focuses on the measurement of financial inclusion, and on the gender gap in, and barriers to financial inclusion via mobile money.

2.1 Mobile Money and Ghana's Approach to Financial Inclusion

Financial inclusion has been used to reference individuals and businesses having affordable access to and able to effectively use formal financial services that meet their needs of transactions, payments, savings, credit and insurance delivered in a responsible and sustainable way (Gammage et al., 2017; Triki & Faye, 2013; World Bank, n.d.[5]). These services are to meet customer needs and provide them with value. On a macro level, financial inclusion is posited to entail all initiatives that enable availability, accessibility and affordability of formal financial services to all segments of the population (Triki & Faye, 2013). They include improved access to credit, savings and risk mitigation products as well as an effectively functioning financial infrastructure that allows individuals and businesses to engage actively in the economy, while protecting users' rights and offering opportunities for informed usage. With emphasis on often-excluded businesses and groups including rural dwellers, persons with disabilities and women, financial inclusion has been touted as a tool for the facilitation of social mobility, poverty reduction and social and economic inclusion. It is recognised by the World Bank as enabling for 7 of the 17 sustainable development goals (SDGs).

There is substantial evidence that increased access to financial services has positive effects on key development outcomes for poorer households, businesses, and women (Ahmad, Green & Jiang, 2020; Gammage, 2017; Mohammed, Mensah, & Gyeke-Dako, 2017; Swamy, 2014). Although traditionally provided by banks, the growth in financial technologies have enabled innovative platforms of financial services that provide increased access to many around the world. Jack and Suri (2011) argue that mobile money service provision is one of the most apparent and innovative platforms for improved access to financial services resulting from its convenient and easy to use features. Mobile money is considered safe (when well supervised), and cheaper (Donovan 2012). Donovan (2012) presents an overview of the mobile money ecosystem which involves a diversity of stakeholders including banks and mobile network operators. He broadly defines the mobile money service as the provision of a range of financial services including payments, finance and banking via mobile devices through a cash-in, cash out infrastructure produced through a network of agents (cash merchants) at transactional points. Transactions can be made through a variety of means including text messaging to transfer value and the use of "contactless" technologies such as QR codes and near field communication (NFC).

In Ghana, mobile money services are provided using existing cellular and distribution networks of mobile network operators thus they are offered over a mobile device connected to a mobile wallet

[5] https://www.worldbank.org/en/topic/financialinclusion/overview

account. There are three service platforms, namely AirtelTigo Money, MTN Mobile Money (also MTN MoMo), and Vodafone Cash currently operational in the country. MTN MoMo is the most subscribed and the oldest mobile money service on the market having begun in 2009. The mobile money services are principally accessed via SIM-based short code applications[6] and SMS notifications, smartphone-based applications, and over-the-counter transactions (cash-in, cash-out infrastructure). Account holders are able to conveniently receive payments into, and transfer money directly from a mobile wallet, as well as make transfers, deposits and withdraw cash from their account through mobile money agents at transactional points.

In relation to mobile money services and its contribution to financial inclusion and development in Africa, the literature converges on the idea that mobile money has the potential to advance economies through its impacts on "financial and food security, employment, and on financial, human and social capital accumulation" (Ahmad, Green & Jiang, 2020, p. 1). Access to mobile money services enables people to generate income, build assets, manage financial risks, and become economically resilient. At the macro level, it is also observed that high financial inclusion engenders high economic growth and reduces income inequality and economic vulnerability (Gammage, 2017; Osore, 2015; Triki & Faye, 2013; Allen, Demirgüç-Kunt, Klapper, & Martinez Peria, 2012). Therefore, many governments in Africa have adopted financial inclusion strategies as an avenue to accelerate economic growth and development (Republic of Ghana, 2018; Lwanga & Adong, 2016).

In Ghana, the National Financial Inclusion and Development Strategy (NFIDS, 2018-2023) specifically seeks to increase the adult population's access to formal financial services by 27 percentage points by 2023 with a focus on excluded groups towards the creation of economic opportunities and poverty reduction (Republic of Ghana, 2018). With a focus on opportunities to increase inclusion by shifting from cash to digital payments – a "cash-lite" economy, mobile money becomes vital in achieving the goal of the NFIDS. Mobile money is the largest driver of access to financial inclusion in the country. In 2015, 58% of Ghanaians, up from 41% in 2010, had access to formal financial services (a 17-percentage point increase) with mobile money alone accounting for 7 of the percentage points of the increase (Republic of Ghana 2018). The use of mobile money and non-banking financial institutions (NBFIs) including regulated microfinance institutions and insurance companies together accounted for 8 percentage-point increase while banks only accounted for 2 percentage-point increase. Additionally, Delaporte and Naghavi (2019) and Connected Women (2018) posit that mobile money is driving financial inclusion at a lower cost comparative to traditional branch-banking, and also reducing the gender gap in account ownership. Rural residents, women, and the poor are reported to generally use mobile money and NBFIs more than they use banks (Republic of Ghana, 2018). This notwithstanding, Ghana lags behind some of its African peers, including South Africa, in mobile money account ownership (Republic of Ghana, 2018).

It is, therefore, a step in the right direction that the Government of Ghana (GoG) has created a favourable regulatory environment for operations and growth of mobile money in the country.[7] The introduction of mobile money interoperability which allows seamless transfer of funds between mobile wallets across different mobile networks and different banks, and the digital financial services (DFS) policy, have further strengthened the potential of mobile money for increased financial inclusion in the country. The recent introduction of QR code acceptance technology which simplifies mobile money payment services by eliminating the need for customers to manually enter merchant numbers during

[6] Also known as Unstructured Supplementary Service Data (USSD) and are sometimes referred to as "Quick Codes" or "Feature Codes"

[7] https://www.modernghana.com/news/950191/how-mobile-money-is-driving-financial-inclusion.html

payments is a case in point. The DFS policy is to ensure the effectiveness of COVID-19 related digital payment measures, and to, among others, drive the success of the NFIDS goal (Buruku & Kudowor 2020).

Despite these efforts, investments and developments in mobile money platforms, and the potential for inclusive growth, research shows that access and use of mobile money services remain unequal (World Bank, 2019). A gender gap exists in financial inclusion through mobile money services. Women tend to face barriers in their access and use to meet their financial needs. As the services rely on mobile communications networks, being able to access and use mobile technology conveniently, for instance, is essential for financial inclusion through mobile money (Grammage et al., 2017). Yet, Rowntree, et al. (2020) estimates that women are 8% less likely than men to own a mobile phone, and women, on average, use a smaller range of services than do men. It is against this background that the present study sought to examine the extent and degree of women and men fisherfolk's financial inclusion through mobile money.

2.2 Measuring Financial Inclusion via Mobile Money

There have been a number of discussions on the concept of financial inclusion and efforts to measure it. These identify the dimensions of financial inclusion – access, usage and quality – and discuss indicators for their measurement. They also include recent global indicators developed to standardise their measurement from both the supply and demand-sides of financial services (Cámara & Tuesta, 2014; World Bank, 2015; Nielsen, 2014; AFI,[8] 2013b; Demirguç-Kunt & Klapper, 2013). It is noted that measurement of financial inclusion must account for both the supply and demand sides of finance, and also for the different dimensions. The relevance of these discussions on measurement of financial inclusion is to examine who remains excluded and the why and how of their exclusion to inform strategies of inclusion. The examination of financial inclusion through mobile money follows the same dimensions and indicators outlined in the aforementioned discussions.

Until recently, financial inclusion, around the world, was measured using supply-side information and 'focused on density indicators, such as the number of bank branches or ATMs per capita.' Although they provided basic information on the availability and use of financial services, these indicators limited knowledge on 'the extent of financial inclusion and the degree to which groups such as the poor and women were excluded from formal financial systems (World Bank, 2016; AFI, 2013a). For instance, it does not provide information on how many people have accounts due to multiple accounts held by some individuals or businesses, and about why categories of people do or do not use formal services. The growth of digital financial services and in particular mobile money has also introduced different aspects into the measurement of financial inclusion. The gap in data has now been addressed with the inclusion of demand-side indicators and the development of standardised global indicators. These demand-side indicators related to account ownership, payments, saving, borrowing, and risk management, are now collected as part of the data to examine financial inclusion of populations. This kind of data aids in understanding both the met and unmet financial needs of financial services' end-users as well as the barriers they encounter in their access of formal services and products. Demand-side data also provide information on users' socio-economic and demographic characteristics to help

[8] Alliance for Financial Inclusion

in the examination of the degree of financial inclusion by characteristics such as income, occupation, age and gender groups (World Bank, 2015; AFI, 2013a).

Supply-side data originates from providers of financial services. Generally, they come from financial regulators, including national central banks who gather the information from deposit taking institutions, microfinance institutions, insurance providers, and others such as mobile network providers. The literature points to some multi-country level supply-side data surveys, mainly aggregated by multilateral institutions, as contributing to the standardisation of indicators to measure financial inclusion (World Bank, 2015; Nielsen, 2014; AFI, 2013a). Examples of these are the IMF[9] Financial Access Survey, GSMA Mobile Development Intelligence surveys, and the CGAP Financial Access report. According to Nielsen (2014), these have developed and extended to focus on sub-national/micro-level data and to include more indicators. Triki & Faye, 2013 (2013) argues that although supply-side data is relatively available in Africa, there still remain challenges particularly in politically fragile countries.

Demand-side data on financial inclusion originate from end user perspectives. These involve data from surveys and interviews with end-users of financial services and products – individuals, households, and businesses – and are vital for understanding financial inclusion, and in complementarity to supply-side data (Cámara & Tuesta, 2015). Available multi-country level demand-side data influencing the standardisation of indicators to measure financial inclusion include the World Bank's Global Findex which concentrates on individual access and usage of financial services. Others are Finscope which emphasizes individual use and perceptions of financial services, and Financial Diaries which focuses in-depth analysis of financial portfolios and behaviours of low-income individuals and households (AFI, 2013a). This is the data space within which the current report is situated. It is concerned with individual access, use and perceptions of mobile money financial services among fisherfolk in selected coastal fishing communities in Ghana.

In addition to paying attention to differences in demand- and supply-side data, there is a need to distinguish between access to and the use of financial services in the measurement of financial inclusion (World Bank, 2016). Information on access may be gathered from providers of financial services but actual use is easier to observe through empirical studies. It is noted that some individuals and businesses although may have access to services may choose not to use some financial products. Another issue that makes the distinction necessary is that some individuals may have indirect access, for instance in the situation when individuals may be using other people's financial accounts. Yet others may not use financial services because they consider them as not needed or because of cultural or religious reasons (World Bank, 2016).

2.2.1 Measuring Access as a Dimension of Financial Inclusion

Access as a dimension of financial inclusion relates to the depth of outreach of financial services, that is, the availability of formal financial services in terms of proximity and affordability – to rural areas, low-income earners and women (World Bank 2015, AFI 2013a, AFI 2013b). To determine levels of access, therefore, a study might have to identify and analyse potential barriers to opening and using a financial account including cost and physical proximity of service points including branches, agents in the case of mobile money services, and point of sale devices/ATMs, etc. (AFI 2013b). Financial account

[9] International Monetary Fund

ownership which is a variable for the usage dimension of financial inclusion can be used as proxy in the assessment of access. Once an individual owns a financial account, the assumption is that there was minimal barriers of proximity and affordability. Additionally, a formal account provides an entry point into the formal financial sector (Demirguç-Kunt & Klapper 2013). This facilitates the transfer of money, remittances, and payments and can encourage formal saving and open access to credit. Measurement data on access could, therefore, be collected from financial institutions.

Caution is raised in relation to access data from user perspectives. For demand-side surveys that may seek to overcome challenges with supply data on access, particularly with regards to a user population in the informal sector, AFI (2013a) points to the Access Strand used by FinScope surveys. The Access Strand is important in the way it disaggregates financial account ownership. It distinguishes between people who own bank accounts, those who have other regulated financial products such as mobile money accounts, those who use informal financial products such as savings and loans, and those who are excluded and use no financial products. Again, at a household level, AFI (2013a) notes that demand-side inquiries into access to financial services must take into consideration people who may have access to financial services through accounts not registered in their names. An assessment of financial inclusion through mobile money account ownership that takes into account the caution raised and the advantage of the Access Strand used by FinScope surveys will likely produce a detailed picture of access to financial services.

2.2.2 Measuring Usage as a Dimension of Financial Inclusion

Determining usage as a dimension of financial inclusion requires gathering information on the extent and scope of use of financial services and products in terms of regularity, frequency and duration of use over time (Cámara & Tuesta, 2015, World Bank, 2015, AFI, 2013a, AFI 2013b). Essentially, it is an attempt to measure "active" accounts in formal financial institutions – savings balance, number of transactions per account within specified timeframes, number of payments made from or received into accounts.

Financial accounts facilitate the use of financial services to achieve financial needs and the recent growth in mobile money has enabled many people who were otherwise excluded from the formal financial system to perform financial transactions fairly cheaply, securely, and reliably. Rowntree, et al. (2020) records 50 million new registered accounts in Africa in 2019 and a total of 163 million registered mobile money accounts in West Africa alone, representing a 14.5 percentage increase, for the sub-region, from the previous year. About a third of this number of accounts is recorded as active over a 90-day basis.

The literature on usage as a dimension of financial inclusion emphasises "resources, preferences, social norms, and financial literacy as determinants of use" (Gammage, et al., 2017, p. 21). These are measures of quality. Grammage et al. (2017) observe that issues such as trust or security, technological literacy, and privacy get significant attention in the literature on usage of digital financial inclusion such as inclusion via mobile money services. Although usage data could be collected from service providers, demand-side surveys are likely to provide more details on usage of mobile money services.

2.2.3 Measuring Quality as a Dimension of Financial Inclusion

The quality dimension of financial inclusion is considered a complex topic both conceptually and in terms of measurement (AFI, 2013b). Quality relates to how well tailored financial products and services are to demand-side needs including in terms of procedures (AFI, 2013a; AFI, 2013b). According to AFI (2016, p. 2), this dimension of financial inclusion is not a forthright attribute, and can be affected by factors including "the cost of services, consumer awareness, the effectiveness of redress mechanisms and consumer protection services, the security of funds, transparency and competition in the market" as well as consumer trust. The measurement of quality as a dimension of financial inclusion typically requires the use of qualitative indicators and demand-side surveys.

AFI (2016) identifies eight indicators of quality as a dimension of financial inclusion. The assessment of quality as a dimension of financial inclusion includes the measurement of how expensive it is for low-income earners particularly, to keep an account; clients' access to all relevant information on products and services in a clear and easy-to-understand language to enable them make informed decisions on usage, and clients' perspectives on the ease and comfort of accessing and using financial services (AFI, 2016; World Bank, 2017). Others include clients' perceptions of fair treatment at financial institutions, including responses to situations that they consider problematic, and the protection of consumer rights. The three remaining categories are concerned with measurement of financial literacy – knowledge of basic financial terms and the ability of users to plan and budget their income, borrower's repayment default, and the ability of clients to choose services or products from a range of options.

Cámara & Tuesta (2015) suggest that the minimisation of involuntary financial exclusion should be used as proxy of quality of financial inclusion. In such a case, minimization of perceived barriers is to be measured by the obstacles for individuals who do not participate in the formal financial system. The present study assesses the quality of fisherfolk financial inclusion via mobile money using the barriers to access and challenges to usage of mobile money services in relation to the indicators of affordability, transparency, convenience, fair treatment, consumer protection, financial literacy, indebtedness and choice. The barriers to financial inclusion via mobile money are discussed in section 2.3.

2.3 Gender Gap and Barriers to Financial Inclusion via Mobile Money

2.3.1 Gender Gap in Mobile Money

There has been far-reaching progress in financial inclusion worldwide with increase in the number of adults who have formal financial accounts. However, this progress is not experienced equally. Men and the non-poor or wealthy are more likely to have mobile money accounts than women and the poor (Klapper, Ansar, Hess, Singer, & World Bank, 2019; Republic of Ghana, 2018; Gammage, et al., 2017). This has colossal implications for low-income earning women who are doubly disadvantaged accessing financial services.

According to the Global Findex 2017, there is an unyielding gender gap that manifests through pronounced differences in the way men and women access financial services, including account ownership (Delaporte & Naghavi, 2019; Demirguc-Kunt, Klapper, Singer, Ansar, & Hess, 2018) despite some slight change since 2014. It is noticed that although the gender gap in mobile money access is

significantly smaller than the gap in bank account ownership in many countries, in Ghana, Chad, Cote D'Ivoire, and Uganda, there is very little difference between the two for women (El-Zoghbi, 2018). Adopting a financial service is an initial step towards use of the service. Owning a mobile money account registered in one's name enables active usage but we observe a gender gap in account ownership that disadvantages women (Chamboko, Heitmann, & Van Der Westhuizen, 2018). Across low- and middle-income countries, it is reported that women are 33% less likely than men to own a mobile money account comparative to 36% in 2014. A research conducted by the International Financial Corporation (IFC) in Ghana, in 2015 pointed to a 30-percentage point gap in the usage of mobile money services between men and women (Chamboko, Heitmann, & Van Der Westhuizen, 2018). Despite significant subsequent improvements, the gender gap persists. Registered mobile money accounts doubled to 40% in 2016, yet there remains a 17% gender gap in account ownership (Connected Women, 2018; Hatt, James, & Lucini, 2017).

In addition to the gender gap in mobile money account ownership, there are differences in how women and men employ mobile money services. The latter manifest and are reflected by the variance in the types of products men and women use as well as in the differentiated frequency of use (Rowntree, et al., 2020; Delaporte & Naghavi, 2019; Chamboko, Heitmann, & Van Der Westhuizen, 2018). Delaporte and Naghavi (2019) observed from a study conducted in Côte d'Ivoire and Mali that women's awareness of mobile money services did not inevitably translate into use of the services. They note that inadequate understanding of the service, "perceived lack of need, low levels of digital skills and literacy, and lack of trust were the main barriers that need to be addressed to move women along the mobile money customer journey" (Delaporte & Naghavi, 2019). Additionally, Chamboko, Heitmann, and Van Der Westhuizen (2018) and Rowntree, et al. (2020) point to data that indicates that men use mobile money more regularly than women and use a larger range of services than do women. The data also indicates that men send money as well as buy airtime more than women while women use mobile money more to receive remittance and to save than men do.

The literature discusses explanations for the gender gap in the adoption and use of mobile money services and recommendations towards bridging the gap (Chamboko, Heitmann, & Van Der Westhuizen, 2018; Gammage et al., 2017). Chamboko, Heitmann, and Van Der Westhuizen (2018), for instance, explain the gap by a gender bias at all levels of society that disregards women's perspectives, needs and experiences in financial inclusion. The discussions focus on the barriers that prevent women from accessing and using financial services from both the supply-side and the demand-side. Many factors are noted to continually hinder women from enjoying equal access to mobile money services. On the demand side, limited access to phones and internet connectivity, lack of/inadequate knowledge considering women's likelihood to be uneducated comparative to men, limited participation of women in the paid labour force, and women's lower social-economic status have been cited as barriers (Chamboko, Heitmann, & Van Der Westhuizen, 2018; Gammage et al., 2017). Supply-side barriers cited include regulatory environments that put limitations on women's access to financial accounts, and financial product designs that disadvantage women's use.

Women have disproportionate experiences of vulnerability and exclusion because of the unequal divisions of labour and their lack of control over economic resources. The gender gap in financial inclusion, therefore, is an issue of critical consequence for gender equality, women's empowerment and for inclusive and sustainable development (Holloway, Niazi, & Rouse, 2017). From the perspective of Holloway, Niazi and Rouse (2017), differences in men and women's mobile money adoption and use cases are explainable by the gender differences in financial needs with implications for the re/design of products and services that match women's needs; gender expectations and discriminatory norms,

both in laws and regulations and at the level of households and communities. The role of intra-household dynamics and social norms in shaping differential access to and use of financial products and services are highlighted in this perspective. Service providers are tasked to introduce products and services as well as access routes that better support women to engage financial services. However, limited consideration, is given in the literature, to the negative impacts and unintended consequences that could result from women's adoption and use of digital financial services (Gammage et al., 2017). These impacts could explain why some women would not adopt and use the services.

When women have ownership of mobile money accounts, the accounts facilitate their access to savings mechanisms and other financial services that aids them with capabilities to take charge of their earnings and to take on productive and personal expenditure (Chamboko, Heitmann, & Van Der Westhuizen, 2018; Gammage et al., 2017). (Doepke & Tertilt, 2011) posit that when women have improved access to finance, they are more likely than men to spend on matters that result in improvements in the health and productivity of their families including education, food and healthcare. Access to finance makes women well-positioned to make more and better choices about time use, income-generating activities, and have substantive control over their lives in terms of decision making in areas of employment, education and marriage (Suri & Jack, 2016). Additionally, women with access to financial accounts may be better able to start or grow their businesses, to choose where and how to work, and to increase their productivity and incomes and reduce their chances of being poor (Suri & Jack, 2016). Suri and Jack (2016) found out that access to mobile money services helped women-headed households in Kenya to reduce poverty, and enabled strategic changes in their livelihoods as the access provided opportunities to change livelihoods from farming to other business.

Therefore, when women's access to and use of financial services are limited or truncated in any way, development cannot be said to be inclusive or sustainable. Consequently, it is imperative for researchers, policy makers and development practitioners, as well as all those interested in development to consider the factors that make it difficult for women to access and use financial services towards meeting their needs. This will include the examination of the barriers that make it difficult for women particularly low-income earners to access financial accounts and services and to work towards reducing these barriers and their effects on women. Calls are made in the literature for laws and regulations that integrate women's experiences and needs, and to fight against gender discrimination at all levels of governance and socio-economic relations. Gammage et al. (2017) suggest that understanding women's needs or how they use financial services is important to ensure that innovation and the provisioning of mobile money, for instance is enhanced to meet those needs.

A growing body of literature also calls for gender transformative approaches to financial inclusion (BanqIn, 2020; IDRC,[10] 2018; Gammage et al., 2017). These call for interventions that bring changes in gender discriminatory norms at all levels of society. Norms shape people's understanding and viewpoints on what is acceptable attitudes and behaviours. Whether codified or implicit, norms are proven to influence an individuals' ability to employ their capabilities and take advantage of economic opportunities. Discussions in the literature identify the influence of norms and social institutions, including as receptacles of gender-based discrimination that underlies and stimulate the social, economic and political constraints and inequalities women encounter.

Some attention is also given, in the literature, to the necessity to equip women with skills to reduce the effects of some of these barriers. Holloway (2017) highlights that, in the short term, interventions

[10] International Development Research Centre

designed in relation to specific gender-based barriers in mind can make it easier for women to adopt and use financial services to overcome gender norms that limit their economic lives. She points to evidence that equipping women with abilities to overcome issues of privacy and control over their funds and accounts can increase their financial inclusion and their economic bargaining power in the longer term. Equipping women with the necessary capabilities to bridge literacy issues and their convenient use of mobile phones, for instance, is an important demand-side way of ensuring that women not only access and use financial services widely but also benefit more from their use, both for themselves and for their families, communities and for country and regional development.

2.3.2 Barriers to Financial Inclusion through Mobile Money

On the supply-side, regulatory environments, mobile money business model type, availability of trained agents, education of users and agents, and technological limitations often present the major barriers to access and usage of mobile money services (GSMA, 2020; Faye & Triki, 2013). In relation to mobile money business model type, GSMA (2020, p. 24) notes that a "payment as a platform" model which encourages sustainability and revenue diversification with less reliance on customer fees is more advantageous for service providers as businesses and for users, particularly low-income earners as transaction costs will not be the main source of revenue for service providers. GSMA (2020) suggests that this model will lead to increased accessibility and greater integrations into digital financial ecosystems, and commercial sustainability of the mobile money service as a business.

On the demand-side, the literature points to a diversity of barriers of access and use in the general context of financial inclusion. In relation to digital financial services (DFS) and in particular mobile money, these barriers include access to digital technology or mobile phones, poverty and/or lack of money, lack of access to required identification documents, low literacy and technological skills, issues of privacy, safety and trust of the system, and individual preferences. Evidence show that women experience these barriers disproportionately. This disproportionate and gendered experience of access and use is argued to principally account for the gender disparity in financial inclusion via mobile money despite its potential for women's financial inclusion towards achieving their financial needs.

The 2019 GSMA Intelligence Consumer Survey (GSMA 2020, p. 7) records top nine barriers to mobile money adoption across the globe. They surveyed adults with knowledge of mobile money, and access to mobile handsets and SIM for at least a month. According to the survey, what stops existing mobile network customers from registering mobile money accounts include preference for cash, family disapproval, lack of necessary identification documentation, and issues of inaccessibility of agents, and affordability. Other identified barriers were safety and trust of the mobile money system, lack of money, low financial literacy and skills, and the existence of alternative avenues to transfer money. A regional disaggregation of the data points to low financial literacy and skills principally, safety and trust of the system, preference for cash, lack of money, and alternatives to transfer money as the top five barriers of mobile money adoption in Africa. Faye and Triki (2013) also highlight low levels of financial literacy as a major barrier to the adoption and use of mobile money services on the continent.

2.3.1 Access to digital technology or mobile phones

Mobile money services are provided using mobile communications networks. Therefore, being able to access and use a mobile phone conveniently is essential for financial inclusion through mobile money. In the exploration of drivers for the uptake of mobile money and the barriers to uptake among women in Sub Saharan Africa, (Chamboko, Heitmann, and Van Der Westhuizen (2018) and Rowntree & GSMA

(2019) note that access to phones and connectivity remain a challenge with women lagging in mobile phone ownership. Hatt, James, and Lucini (2017) indicate that the gender gap in mobile phone ownership stand at 16% in Ghana and at 17% in Sub-Saharan Africa. Additionally, research in Ghana indicates that apart from the gender gap in mobile phone access, men are twice as likely as women to have more than one mobile phone and corresponding SIM cards that enable a diversification of their usage of mobile money services and products from different service providers (Chamboko, Heitmann, & Van Der Westhuizen, 2018). Fewer women having mobile phones means fewer women with the ability to register mobile money accounts in their names. This, in turn, prevents them from fully accessing various financial services, and making decisions about their use (Gammage et al., 2017).

Another interesting issue in the literature with regards to the gender gap in access to mobile phones relates to men and women's life cycles. Although Gammage et al. (2017) observe that majority of studies that examine women's access to financial and DFS services are age-blind, the characteristic of age is shown to have implications for men and women's financial inclusion. In a study conducted in DR Congo (Chamboko, Heitmann, & Van Der Westhuizen, 2018) and in Kenya (Savannah Foundation, 2018), a clear age gradient on mobile money account ownership was noticed. It was noted that while younger men adopted the service earlier than did younger women, account ownership decreased for men as they grew older and increased for women as they grew older even as the gender gap persisted. As mobile money has become central to Sub Saharan Africa's financial inclusion achievements, further progress is argued to be partly contingent on ensuring that everyone, particularly women who lag behind have access to this important technology (Chamboko, Heitmann, & Van Der Westhuizen, 2018). Additional attention must be paid to younger women.

2.3.2 Poverty/Lack of Money

The lack of financial resources, particularly money to open an account, and cost of transactions have been identified as reasons why women low-income earners do not have financial accounts (Chamboko, Heitmann, & Van Der Westhuizen, 2018; Gammage et al., 2017). According to Gammage et al. (2017), this lack of funds originates from women's disproportionate experience of poverty and their low and unpredictable incomes. They point to women's lower participation in the paid labour economy and a gender gap in wages when they do participate, as evidence. Women who participate in the labour market are often concentrated in lower-paying activities and get lesser rewards for the efforts they put into their work (ILO, 2017). Therefore, women often earn lower incomes and are more likely to not have any financial assets. People with higher incomes or assets are more likely to have sufficient money to engage services with transactional costs and these tend to be men.

Grammage et al.'s (2017) review of literature highlights how DFS including mobile money have been found to reduce transaction costs, both in time and in monetary terms. They, however, note that analyses that point to the triumph of DFS over cost related barriers are not contextualised in the broader norms that outlines women's ways of being, and doing. They argue that the simple reduction in transactions costs alone may not produce the outcomes desired for women's financial inclusion. Furthermore, although mobile money services provide lower cost of transactions and minimum fund requirements for opening, maintaining and use of an account, lack of money and low incomes remain a critical driver of women's mobile money services adoption and use. In 2015, when non-users of mobile money in Ghana were asked why they were not using the service, Chamboko, Heitmann, & Van Der Westhuizen (2018, p. 8) reports that "women overwhelmingly stated lack of money as the primary reason." Connected Women (2018) also observe that Ghanaian women have lesser

disposable income comparative to men and consequently "tend to be more price sensitive, often preferring cash over mobile money."

The literature calls for the promotion of women's entry into the paid labour market and strategic steps to address the gender bias that disproportionately affect women at the different levels and spaces of society, and in the labour market (Chamboko, Heitmann, & Van Der Westhuizen, 2018; Gammage et al., 2017). The argument is that women's engagement in economic activity makes them economic actors of interest to financial service providers and women who are engaged in income generation activities are more likely to seek financial products and services, and be financially included. Women's and girls' economic empowerment are also called for in this regard (Gammage et al., 2018). Additionally, Grammage et al. (2017) point to the body of research that examine the role of gendered norms and social institutions in shaping women's financial inclusion and outcomes, and call for further research in this area. They opine that financial management skills which can be taught to help women low-income earners adopt financial services can be helpful towards their access of accounts and initiation of savings to aid them out of poverty.

2.3.3 Lack of required identification documents

A lack of identification documents remains a critical barrier of access to mobile money services for many women in low- and middle- income countries. The Global Findex 2017 shows that 20% of financially excluded individuals mention a lack of identification as the main reason ((Demirguc-Kunt, Klapper, Singer, Ansar, & Hess, 2018)). The know-your-customer (KYC) requirement and international anti-money-laundering initiatives set by financial regulators makes the taking and verification of clients' identities critical for mobile money service providers (Hunter 2018). Donovan (2012) notes that regulators are justly concerned about criminal and terrorist financing and issues of monetary policies related to illegal transborder remittance flows. However, poorer individuals and households may not be able to obtain the documents. Not having the necessary identification requirement excludes many individuals from access to financial services. This is particularly the case for women's access to mobile money services "in Chad, where the gender gap in mobile money reaches 45%, [and] only 21% of women have a proof of identity compared to 55% of men" (Delaporte & Naghavi, 2019).

Delaporte and Naghavi (2019) argue that close collaboration between regulators and mobile money service providers to introduce innovative and simplified processes for customer identification is the way out. This, they say, will help increase the chances of driving adoption of mobile money among women.

2.3.4 Issues of privacy, safety and trust

BanqIn (2020) notes that a lack of trust in the financial sector is one of the reasons why people do not adopt and use financial services. The mistrust is argued to be a result of a lack of understanding of how financial products and services operate. People hesitate to hand over their monies without knowing what happens to them. For women whose monies may not be much, and in a context of frequent reports and experiences of fraudulent activities in the mobile money system, mistrust of the system becomes a significant obstacle in the adoption and/or extent of use of mobile money services. A GSMA study conducted in Ghana found that fear of fraud and the related security of funds in mobile money wallets presented a barrier to mobile money use, particularly among women (Delaporte & Naghavi, 2019). Akomea-Frimpong et al. (2020), in their discussion on the control of mobile money fraud in

Ghana, highlight that the forms and sources include system's fraud that originates in the mobile money technology itself, fraud perpetrated by some subscribers and those by agents and employees of service providers.

Further, Gammage et al. (2017) note that the issues of privacy and safety feature prominently in the literature on the barriers to women's use of DFS. They note that while part of the literature focuses on how DFS afford women more security and privacy from their families in their financial transactions, another part argues out how women could have less security and privacy, because of their lower levels of technological literacy or their reliance on family, friends, and agents to use DFS.

To increase women's trust in mobile money, Delaporte and Naghavi (2019) suggest that transparency on the part of mobile money providers is critical. They note that many service providers in Africa have adopted key principles of mobile money certification and invested in sensitization campaigns to educate consumers about safety and security and how to protect their personal information and money from fraudulent persons. BanqIn (2020), following a similar opinion, points out that service providers must be involved in the creation of awareness on how financial services work and how one can securely make transactions. BanqIn (2020) suggest that the awareness must be created through financial education programmes with the aim to increase the financial literacy levels of the unbanked population to alleviate mistrust of the financial system.

2.3.5 Individual Preferences

Women's individual preferences impact the demand for and use of various financial products and services. Despite its conceptualization and exploration at the level of the individual, Delaporte and Naghavi (2019) note that preferences are influenced by a set of interrelated factors including norms that may prescribe what women can do, feel, or be. Expounding on studies that have explored preferences with that lens, they observe that such studies suggest gendered preferences in risk taking, cash liquidity, and privacy as underlying factors for the adoption and use of financial services. They also note that part of the literature explores the issue of trust in financial institutions as a key underlying factor that shapes individuals' financial behaviour.

It is also observed that some people may not use financial services because they consider the services as not needed or because of cultural or religious reasons. The World Bank (2016) highlights that although nonusers do not constitute a problem from a policy making viewpoint since their non-use is likely driven by a lack of demand, financial literacy is important for the increase in awareness and to generate demand. Again, the World Bank (2016) indicates that non-use resulting from religious reasons can be overcome by allowing entry of service providers with religion-compliant products including for instance, Sharia-compliant financial products.

2.3.6 Low literacy and technological skills

The literature that addresses gendered issues of access to financial products and services give much attention to the subject of literacy and education (Gammage et al., 2017). It follows that because Africa is the region with the lowest literacy rates in the world, its population's ability to understand technology-based financial services is not the best (Gammage et al., 2017). However, part of the literature differentiates between general literacy and financial literacy, and identify both as barriers to mobile money access. With women less likely to be educated than men, women are more likely to be financially excluded as a result of literacy levels. The literature also raises concerns about "women's

technological literacy—their ability to use the technology independently once they have access to it" (Gammage et al. 2017, p. 22).

To bridge these literacy issues for women, Chamboko, Heitmann, and Van Der Westhuizen (2018) point to the simplification in the design and provision of mobile money to guarantee that the less literate is able to interact and apply it. Additionally, they call for the technology to be simple and compatible with simple phones while ensuring safety and security (Chamboko, Heitmann, & Van Der Westhuizen, 2018).

3. RESEARCH METHODOLOGY

In pursuit of the exploration of the gendered nature of adoption and usage of mobile money services towards the enhancement of the socio-economic livelihoods of fisherfolk in PTF project communities, this report is informed by a study that employed a mixed method approach to data. The approach was adopted in relation to the study's timeframe, and for the general purpose of scope and depth of understanding and corroboration (Johnson, Onwuegbuzie, & Turner, 2007). Conducted in all five of the PTF project districts and across twenty-six (26) fishing communities, the study employed three primary data collection techniques – survey with a sample size of 500, informal conversations that allowed further understanding into fisherfolk answers to survey questions, and nine (9) expert interviews. The report defines financial inclusion via mobile money for fisherfolk in terms of individual access, and ability to effectively use appropriate financial services to meet their financial needs. It favours micro level analysis and centres the perspectives of the fisherfolk.

3.1 The Study Area

The PTF communities, that provided the context for the study, are located in the five districts of the PTF project: Awutu Senya, Effutu, Ekumfi, and Gomoa West in the Central Region, and Shama in the Western Region. Generally, fisherfolk in the communities are involved in artisanal fishing and fish post-harvest activities where men essentially harvest fish and women are engaged in post-harvest activities. The communities are mainly characterized by low levels of income and education.

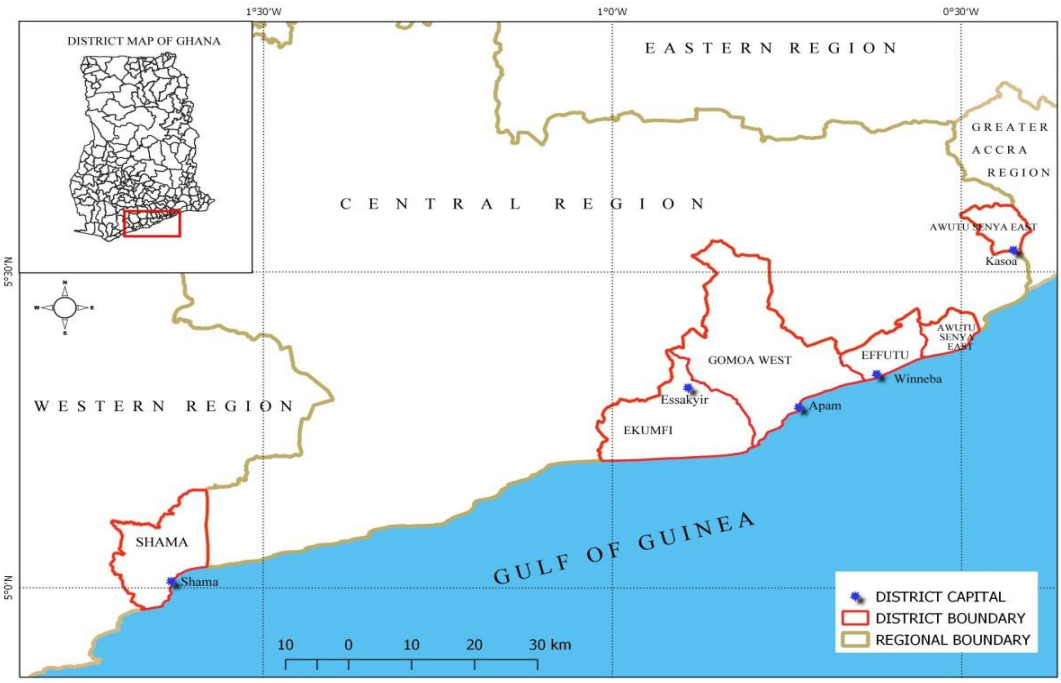


Figure 1: Map showing the PTF project districts

Awutu Senya District

The Awutu Senya District with a population size of about 4880 has only one coastal community – Senya Bereku. The district is very well noted for the vibrant fishing activities in Senya Bereku. The artisanal fishery sector accounts for a greater proportion of the working population in Senya Bereku, rendering fishing activities as a colossal opportunity for the district. The community has a very low educational level with 65% of fisherfolk having no formal educational background. Only 30% have elementary education and 5% have up to secondary education (CDO, 2019).

Effutu Municipality

Winneba is the most prominent coastal community in the Effutu Municipality and serves as its administrative capital. Other fishing communities in the Municipality that were included in the research are Akosua Village and Woarabeba. About 48% of fisherfolk in the Municipality do not have any formal educational background while 42% have had elementary education. The district is widely known for its marketing of smoked fish and sale of fresh fish which lie in the fishery roles of women.

Ekumfi District

In the Ekumfi District, fishing and fishing related activities are the dominant livelihood activities carried out, especially in the coastal areas (Ghana Statistical Service, 2014c). Marine fishing is notably the predominant occupation of the inhabitants of the district with 54% of the fisherfolks having no educational background.

Gomoa West District

Gomoa West has five main fishing communities within which the research was carried out. These are Apam, Mumford, Dago, Mankoadze and Abrekum where landing beaches are situated. The fisheries sector in the District has three (3) main areas of interest – marine fisheries, aquaculture and fish processing. PTF project beneficiaries are within the marine fisheries and fish processing areas. Trading of fresh fish, fish processing and retailing are dominated by women. Notwithstanding, a few men also engage in processing activities such as smoking, salting, drying and frying (Akutse & Samey, 2015). An estimated 60% of fisherfolk in the District have no educational background.

Shama District

Fishing is the driver of the local economy in Shama (Coastal Resources Center / Friends of the Nation [CRC/FoN], 2010). The artisanal fishing industry of the District encompasses eight main coastal zones: Shama Apo, Shama Bentsir, Shama Amena Ano, Anlo Beach, Aboadze, Abuesi, Kesewo Kan, and Broni-Bema landing beach. Broni-Bema is not included in the PTF project communities. All the fish processors in the district are female and mostly process fish by smoking. The PTF project fishing communities in the Shama District have 49% fisherfolk with no educational background and 44% with up to elementary education.

3.2 Sampling Size and Technique

The population of interest for the study included all fisherfolk, and all providers of mobile money services in PTF communities. The fisherfolk sample size was determined to be 500 respondents across the five districts while service providers were selected to represent each district.[11] The research team engaged with the population of interest during the first year of the project implementation, including through the baseline study. Thus, the team had an understanding of the population. This understanding is important in the tracking of changes over the year of implementation to ensure that the changes in data recorded reflect real change across consistent and comparable samples.

Again, as an exploratory study aimed at developming an initial understanding of fisherfolk financial inclusion, non-probability sampling techniques were adequately used. The fisherfolk sample size consisted of 300 fish processors and 200 fishermen guided by statistical data from Ghana Stattistical Service and the Fisheries Commission. Convenience and purposive sampling techniques were used. Convenience sampling was used in selecting fisherfolk respondents in the project districts. On entering the communities, the project team went to landing beaches, homes, fish processing spaces and other locations where fisherfolk are known to be located. Persons who were encountered by enumerators and were fisherfolk willing to participate in the study were sampled. The PTF project has engaged financial service providers including banks across the project district. The research team purposively selected relevant officials from the district offices of these service providers. Additionally, the team went to district offices of mobile money service providers to interview them on their service provision to fisherfolk and on their perspecctives on fisherfolk adoption and use of their services.[12]

The fisherfolk sample size was computed at the district and community levels using data on the population size of the districts obtained from the Ghana Statistical Service (2014a; 2014b; 2014c; 2014d; 2014e) and the size of fisherfolk in the fishing communities obtained from the Fisheries Commission (Dovlo, Amador, Nkrumah, & et al., 2016). Size of respondents from the project districts for the different categories of fisherfolk (fish processors, fishermen) was determined using the statistical sample size formula below with a 95% confidence level;

$$n = \frac{c^2 N \rho_{(1-\rho)}}{(A^2 N) + (c^2 \rho_{(1-\rho)})}$$

Where:

n is the sample size required

N is the whole target population in question

p is the average proportion of records expected to meet the various criteria

(1-p) is the average proportion of records not expected to meet the criteria

A is the margin of error deemed to be acceptable (calculated as a proportion) e.g., for 5% error either way A = 0.05

c is a mathematical constant defined by the Confidence Interval

[11] This determination was based on expedient factors related to the COVID-19 pandemic to reduce the exposure of the project team and the fisherfolk respondents to risks of infections. It was less than a third of the respondents interviewed in the project baseline study.

[12] Preliminary data including from the data collection tool pre-test indicated that Airtel/Tigo Cash and MTN mobile money were the most commonly used mobile money service among fisherfolk. Additionally, attempts to speak to officials from Vodafone Cash were unsuccessful. Officials from MTN and Airtel/Tigo were engaged in the study.

3.2.1 Study Respondents

The total survey respondents selected from the five PTF project districts were: 55 (Awutu-Senya), 100 (Effutu), 110 (Ekumfi), 95 (Gomoa West) and 140 (Shama). Figure 2 shows the distribution of respondents across project districts disaggregated by occupation within the fishery value chain. Following from the gendered division of labour in the marine fisheries subsector all the fish processors interviewed in the study were women and all the fishermen were men. Therefore, disaggregation of data by occupation is also interpreted as disaggregation by gender.

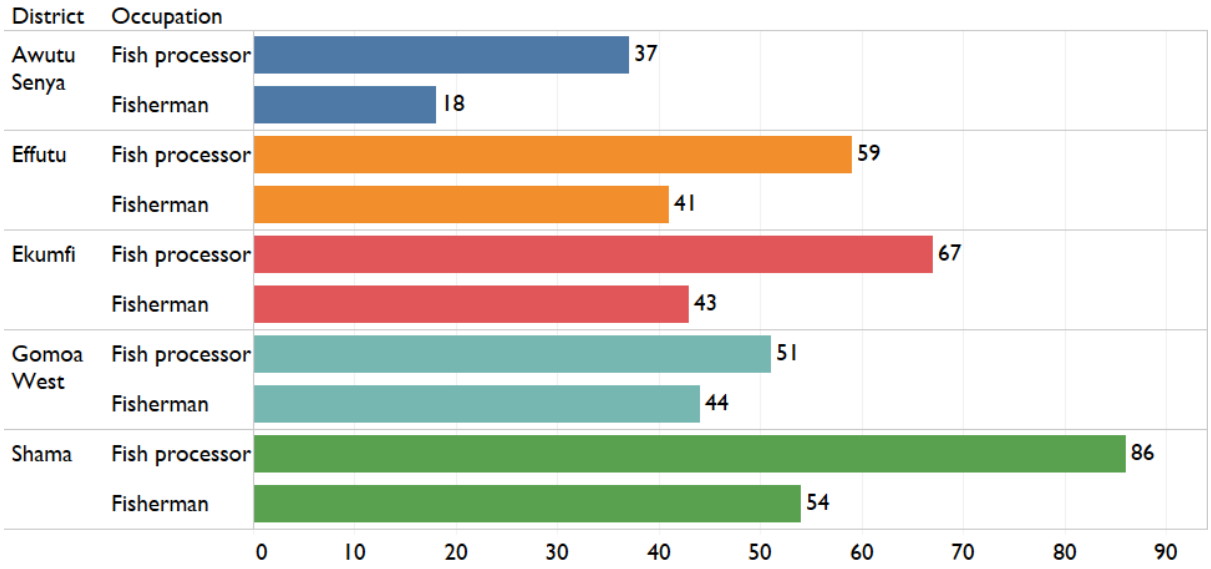


Figure 2: The distribution of fisherfolk respondents by project district and occupation

3.3 Data Collection

The data collection approach was a mix of both qualitative and quantitative techniques. Both primary and secondary data were used for the study. The secondary consisted of a desk review of literature on gender and financial inclusion, mobile money service adoption and usage in Ghana, and the gendered and socio-economic dimensions of coastal fishing communities in Ghana. A significant source of secondary data was the 'PTF' Baseline Survey Report (CDO, 2019), which provided information on the socio-economic profile of the study area and the fisherfolk. The global association of providers and operators of mobile communication systems and networks, GSMA, through their various platforms and publications was also a significant source of secondary data for this study.

The primary data were obtained using two main approaches: a survey and interviews in October and November 2020. The data sources were fisherfolk from across twenty-six (26) communities in the PTF districts – Awutu Senya, Effutu, Ekumfi, Gomoa West and Shama, – and officials of financial institutions and mobile money service providers in the districts. The data were obtained from the administration of five hundred (500) survey questionnaires to fisherfolk, observations from informal conversations with fisherfolk, and through interviews of nine (9) key informants – five (5) branch managers from different universal and rural/community banks, and four (4) management officials from mobile money service providers across the five project districts.

Fisherfolk in PTF project communities and their perspectives, adoption and use of mobile money services are at the centre of this study. Their survey responses yielded data on fisherfolk access to financial services, their mobile money services user-habits and their perspectives on the importance of mobile money. The different universal and rural/community banks present avenues for fisherfolk financial inclusion through mainstream financial institutions. Their perspectives were important for the supply-side data on fisherfolk financial inclusion and for the comparative access to financial inclusion via mobile money services. Mobile money service provision is central to the discussion of the subject matter of this study. Thus, the interviews with mobile money service providers afforded the study an important supply-side viewpoint.

Table 1: Primary data collection summary

DATA SOURCE	DATA COLLECTION METHOD	DATA ANALYSIS METHOD	SAMPLE SIZE	DATA VARIABLES
Fisherfolk	Structured questionnaire	Descriptive statistical analysis	500	The gendered nature of fisherfolk financial account ownership in PTF project communities Fisherfolk perspectives on the importance of mobile money towards meeting their financial needs Gendered usage of mobile money services by fisherfolk Challenges and barriers to fisherfolk adoption and usage of mobile money services
Financial service providers	Expert interviews	Thematic content analysis	9	The gender gap and trends in fisherfolk bank account ownership Fisherfolk adoption and use of mobile money services Perspectives of service providers on the challenges and barriers to the adoption and use of their services by fisherfolk

3.4 Data Analysis

Data from the survey were analysed descriptively and quantitatively using simple statistics such as percentages, frequencies and averages. The data were cleaned and analysed to derive information on fisherfolk bank account ownership, their perspectives on the importance of mobile money and the barriers and challenges they face in its adoption and use towards meeting their financial needs. The analyses were also concerned with fisherfolk mobile money services user-habits. Graphs, tables and charts were used to visually present the results, where appropriate. Additionally, the data derived from informal conversations with fisherfolk and interviews with officials of financial service providers were recorded as notes and analysed using content analysis based on the themes explored in the survey. This was to aid in determining the gendered nature of adoption and usage of mobile money services towards the enhancement of fisherfolk socio-economic livelihoods. It included the establishment of capabilities of women fisherfolk that need to be enhanced to help them translate financial inclusion via mobile money into improvements in their livelihoods.

The data was analysed at the micro level. The analyses emphasise fisherfolk as individuals and as collectives, and the gendered differences in financial inclusion and potential outcomes manifested at the micro level.

4. FINDINGS AND DISCUSSIONS

The main objective of the study was to explore the gendered nature of adoption and usage of mobile money services towards the enhancement of fisherfolk socio-economic livelihoods. Of specific importance was the gendered nature of respondents' financial inclusion via mobile money, their usage of mobile money services including user habits and attitudes, and challenges to their adoption and usage of mobile money.

4.1 Demographic Characteristics of Respondents

This section presents the study findings on the respondents' demographics. Specifically, it shows data on gender, age and income levels. The socio-demographic characteristics shown to be relevant for financial inclusion include gender, age, income levels and education for individuals, and formality for businesses (Cámara, Peña, & Tuesta, 2014). These aspects influence adoption and usage of financial services and products. The small-scale fisheries sector in Ghana is primarily an informal sector.

4.1.1 Gender of Respondents

The study established the gender of respondents who had adopted mobile money. This was important for the assessment of the gendered nature of mobile money adoption, use and related challenges among the fisherfolk. All the fish processors sampled for the study were women while all the fishermen sampled were men. Although a few men have been recorded to engage in fish processing activities particularly in the Gomoa West District (Akutse & Samey, 2015), none of them were sampled for the study. This occurred, naturally as a result of the sampling technique and criteria adopted. Deferring to this established gendered division of labour, the variable of occupation is presented as indicating gender such that fish processors are equated to females/women and fishermen, to males/men. The findings reveal that 65% of male respondents had registered mobile money accounts compared to 60% of the females. This is indicative of a gender gap in financial inclusion through mobile money among coastal fisherfolk in PTF project communities. This gender gap has been related to structures of constraints including disparities in income, education, and stereotypes that disproportionately affect women's access to and relationship to technology and financial services.

4.1.2 Age Distribution of Respondents

The factor of age has been shown to be relevant for the adoption of innovation so this study sought to find out the ages of the respondents. While about a quarter of the respondents (25.35%) were aged 31 – 40 years, 22.13% were aged 41 – 50 years old, 19.32% were aged 18 - 30 years, 18.11% were aged between 51-60 years old, and 14.69% were 61 years or older. The findings also record children fisherfolk aged below 18 years old (0.40%), all fishermen. Additionally, the data show that members of the communities engaged in fisheries were generally spread over the life course implying the significance of fishing activities for livelihoods in the PTF project communities.

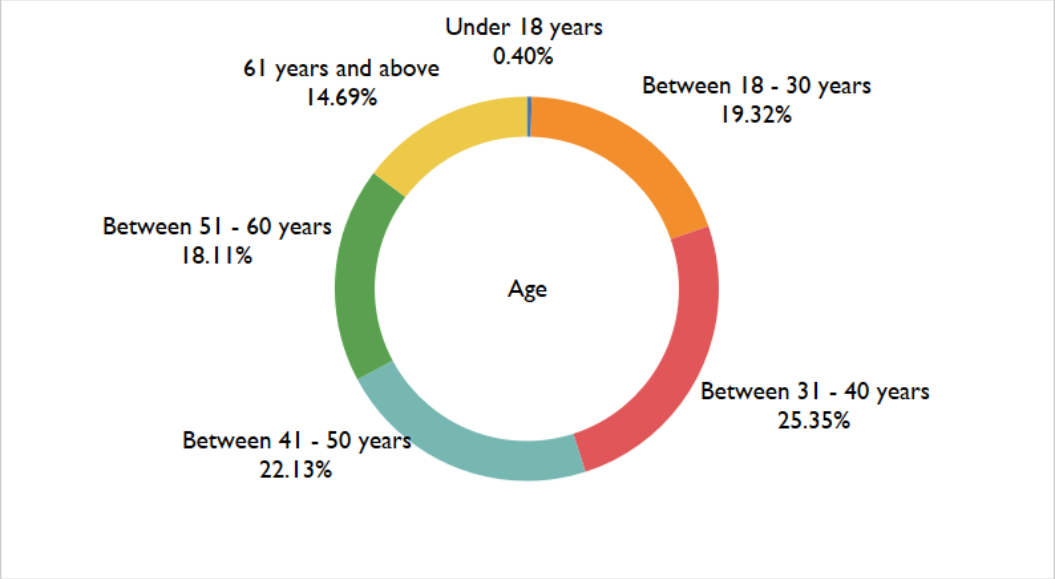


Figure 3: Age distribution of respondents

Empirical evidence suggest that men are the more active mobile money users compared to women, while young adults constitute fastest adopters of mobile money technology (Chamboko, Heitmann, & Van Der Westhuizen, 2018; Savannah Foundation, 2018). Even so, younger men, comparative to younger women, are more inclined to adopt mobile money earlier (Chamboko, Heitmann, & Van Der Westhuizen, 2018). In this study, cross-tabulation comparing gender, age and respondents' use of mobile money services records the highest use of mobile money services among women aged between 31-40 years old (34.30%) and 51-60 years (20.93%). Among the men, those aged between 18-30 years (29.20%) and those in the 31-40 years bracket (22.76%) recorded the highest use. Figure 4 indicates a decline in the use of mobile money services among men over the life course suggesting that younger fishermen are more likely to use mobile money services than the older ones. Comparatively, mobile money use among the women points to a near data normality (steeper at both ends and more distributed in between the youngest and oldest age ranges).

The high concentration of use among women aged 31-40 years (34.30%) and significant use among those aged 41-50 years (19.19%) and 51-60 years (20.93%) could be explained by women fisherfolk's life course-based access to credit – through marriage/family networks – and their career progression – accumulation over more years of experience. Older fish processors are more likely to have started their own enterprises and could have built social and financial capital to access mobile phones and use mobile money services. Women aged 18 – 30 years old, and 61 years above were the least likely to be using mobile money services compared to the other women. Overå (1993), in her study of the role of women in small-scale fisheries in a coastal fishing community in Ghana, points out that younger sisters or daughters often lacked funds or were 'too young' to establish an independent career and therefore helped established women to process and market fish while the younger ones gained experience and built social and financial capital. Following this, it is argued that young women in fisheries experience a delay in access to resources comparative to their men counterparts. Therefore, it can be speculated that the fish processors aged 31-40 years old, in access to resources, may share similar characteristics including faster adoption of technology with the fishermen aged 18-30 years old.

Fish processors aged 61 years above are the most likely not to have any formal education and this could explain the reduced use of mobile money among them.

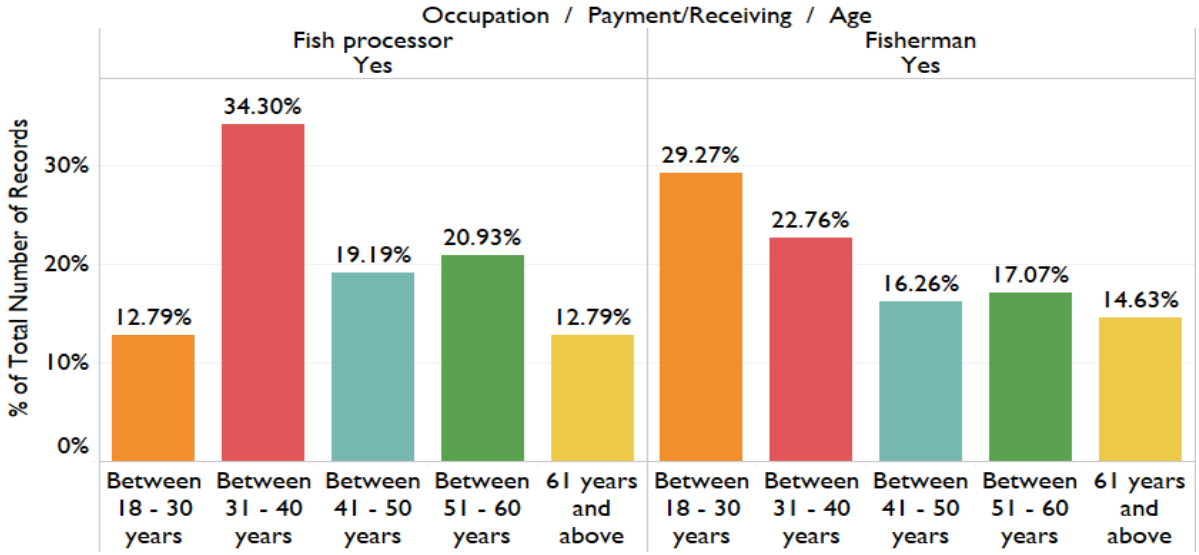


Figure 4: Mobile money use by age and occupation

4.1.3 Incomes of Respondents

Income levels have been related to non-usage of financial services and financial account inactivity. Data from demand-side financial inclusion surveys suggest that low usage of financial services reflect low-income levels with highest account inactivity rates recorded in the poorest contexts. It is noted that people's answers to survey questions that seek to find out why they do not use their accounts have often been that they do not have money, no regular income or simply cannot afford keeping their accounts active (Soursourian, 2019). Additionally, women in fisheries and aquaculture receive smaller returns on their work comparative to men within the sectors. This has been explained by "constraining gender norms, time and labour burdens of unpaid work, and barriers to sustaining entrepreneurship" that will enable women's economic empowerment (CGIAR[13], 2017). Ten percent (10%) of respondents without mobile money accounts, a majority of whom were women, cited inadequate funds as the reason why they were not signed up. Furthermore, about a third of the respondents (33.33%) who viewed mobile money services as unimportant for them explained their perspective by their low incomes. In their collective view, because they made low incomes, they did not have enough money to save and/or pay for transaction fees on mobile money.

The study respondents were asked to indicate their incomes during the bumper and lean fishing seasons respectively. This data type was necessary to assess the incomes earned at all levels. Many of the them responded with estimate incomes, mostly because of the unstable & irregular nature of their incomes but also because some respondents were either unwilling to divulge their exact incomes or could not remember what they were. The findings indicate that fishermen averagely recorded higher

[13] This is a global partnership that unites international organizations engaged in research about food security (the Consultative Group on International Agricultural Research).

weekly incomes than fish processors during both seasons. This lends credence to arguments that point out low-income levels as a challenge to financial inclusion particularly for women.

Table 2: Descriptive statistics: bumper season, lean season

Variable	Occupation	N	N*	Mean	SE Mean	Minimum	Maximum
Bumper Season	Fish processors	289	11	380.80	19.10	15.00	1800.00
	Fishermen	190	10	607.80	28.40	25.00	1800.00
Lean Season	Fish processors	257	43	136.06	8.55	0.00	700.00
	Fishermen	177	23	157.30	10.90	0.00	600.00

Where

N	*Number of valid responses*
*N**	*Number of invalid responses*
Mean	*Mean of income generated*
SE Mean	*Standard Error of Mean*
Minimum	*Minimum income recorded*
Maximum	*Maximum income recorded*

While fishermen in coastal fishing communities work in companies or as a group, fish processors mostly work as individuals. The descriptive statistics above (Table 2), indicate that a fish processor, on the average, makes a weekly income of GHS 380.80 on processed fish during the bumper season while a fisherman, on the average, makes a weekly income of GHS 607.80 on fish caught. Additionally, while the minimum weekly income recorded for fish processors was GHS 15, the minimum weekly income recorded for fishermen was GHS 25.00 However, the maximum weekly income recorded for both fishermen and fish processors was GHS 1800.00. During the lean season, fish processors and fishermen earned, on the average, GHS 136.00 and GHS 157.00 respectively, with a minimum income of nothing at all recorded for both occupations. The maximum weekly income recorded for fishermen was GHS 600.00, and GHS 700.00 for fish processors in the lean season.

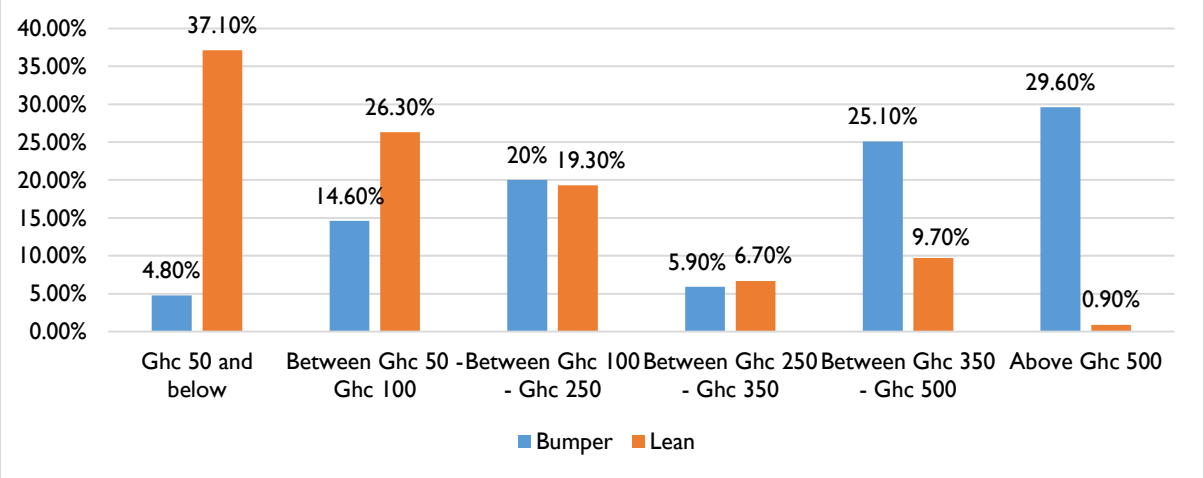


Figure 5: Distribution of fisherfolk incomes during the bumper and lean seasons

Figure 5, above, shows the distribution of fisherfolk income during the two fishing seasons (bumper and lean). The graph shows a skewed distribution for the seasons. During the bumper season, the data shows a negatively skewed distribution of income earned. A majority of the fisherfolk earned between GHS 350.00 and above with just a few earning GHS 100.00 and below. From the distribution, 6.40% of fisherfolk during the bumper season earned below the national daily minimum wage (NDMW) of GHS 11.82 which is approximately GHS 82.74 per week. In the lean season, the data indicates a positively skewed distribution of income earned, that is, a majority earning GHS 100.00 and below with just a few earning above GHS 250.00 More than a third of the fisherfolk (36.40%) earned incomes below the NDMW of about GHS 82.74 during the lean fishing season.

4.1.4 Educational levels of Fisherfolk in PTF project Communities

The Power to Fishers Baseline which reports on a sample of 1888 fisherfolk established that more than half (55%) of them had no formal education with about 38.60% having some level of basic education and 6.40% having had secondary education and above. There was no significant different between fishermen and fish processors, however, the latter were the more likely to have no formal education than the former. This study which was conducted in the same communities that the Baseline Study was conducted in, therefore, assumed low literacy levels for the respondents. The literature establishes that people with higher educational levels are able to understand different financial products and services and to make informed decisions in adoption (Abel, Mutandwa, & Le Roux, 2018). The findings indicate that 12.00% of the respondents who did not have mobile money accounts completely lacked financial literacy as they did not consider financial accounts as necessary or important. Additionally, 27.20% of respondents who could not operate their mobile money accounts independently cited their low educational level as a reason for their incapability.

4.2 Gendered nature of fisherfolk financial inclusion via mobile money

Mobile money contributes significantly to the financial inclusion of fisherfolk in PTF communities, particularly the womenfolk. While not all respondents with mobile money accounts actively use their

accounts to access financial services, usage of mobile money financial services are high. However, usage is principally limited to the receiving and making of payments, and the cashing out from mobile money wallets towards different financial needs. Generally, fisherfolk mobile money users have positive attitudes towards the service, and their financial needs for which mobile money services are used are mainly related to fishery businesses, local remittance, personal shopping, and family needs.

4.2.1 Fisherfolk Access to Formal Financial Services

Fisherfolk access to formal financial services was determined by the number of respondents with formal financial accounts. The study recorded high access among the fisherfolk interviewed and mobile money accounted for a majority of the financially included. However, there was a gender disparity in access that disadvantaged females. The findings show that 66.40% of respondents had access to formal financial services. While banks alone contributed only 4.80 of the 66.40 percentage points in access to formal financial services, mobile money alone accounted for 36.60 of the percentage points of respondents' access to formal financial services. This suggests that more than half of the financially included fisherfolk interviewed had financial access through mobile money alone. It is noteworthy that 64.10% of those with financial access through mobile money reported their accounts as their first financial account. Again, more than half (37.50 percentage points) of those who reported their mobile money accounts as their first accounts were women. Without mobile money, these women did not have independent access to formal financial services. Banks and mobile money, together, accounted for a quarter (25%) of the percentage points in fisherfolk access to financial services.

Table 3: Distribution of respondents access to financial services

	Percentage of respondents	**Percentage points**	**Total percentage of respondent's financial services access**
Financial services	66.40%	Mobile Money (36.60%)	55.10%
		Bank Account (4.80%)	7.20%
		Bank Acct & Mobile Money (25.00%)	37.70%

Table 4: Respondents whose mobile money accounts were their first financial account

Mobile money account as first financial account	64.10%	Fish processors/women (37.50%)	58.50%
		Fishermen/men (26.60%)	41.50%
Mobile money account not first financial account	35.90%	Fish processors/women (21.10%)	58.70%

		Fishermen/men (14.80%)	41.30%

Less than one-third of the respondents (30.20%) reported having accounts in banks, savings and loans institutions, credit unions (deposit taking) microfinance institutions and rural/community banks. Consequently, 69.80% of the study respondents did not have bank accounts with a slight difference between the women (70.40%) and the men (68.80%). This suggests that although fisherfolk may be financially excluded with regards to bank account ownership, women fisherfolk were more likely to be excluded than the men. This speaks with globally noted fact that women's financial access is disproportionately low with the Sub-Saharan Africa data noting an 11-percentage point difference between women and men's bank account ownership (Morsy, 2020).

On the supply-side, interviews with officials from banking institutions within the PTF project districts highlighted that fisherfolk account ownership had been mainly decreasing since 2015 and sharply since 2017 because of the banking crisis that has led to the collapse of some mainstream financial institutions. One credit union, however, reported that fisherfolk account ownership was "increasing tremendously." They attributed this to the uniqueness of their services and marketing strategies. Additionally, the interviews, contrary to what both the fisherfolk interviews and the literature indicate, suggest a gender gap in account ownership that favours women. According to officials of four (4) rural/community banks and co-operative credit unions interviewed in this study, more fish processors than fishermen held bank accounts. This majority share of women account holders was explained by the existence of bank packages that allowed women to come together as groups to access loans.[14] It was, however, observed that women who were not fisherfolk joined fish processors in groups to access loans thus increasing the numerical count of women fisherfolk with bank accounts in the bank records. This has the tendency to mask the reality and challenges the statement that there are more women fisherfolk account holders. Migration patterns of fishermen were also identified as a factor as this discouraged both the banks and the fishermen themselves from opening accounts at the banks. In this instance, the migratory patterns of fishermen present a basis for their exclusion in the access and use of bank services. Mobile money services which are accessed essentially through branchless banking overcomes the challenge that migration may present to fishermen financial account ownership.

Table 5: The gender gap and trend in fisherfolk bank account ownership in selected banks in PTF project districts

District	**Financial Institution**	**Fisherfolk Share of Accounts**	**Women Fisherfolk share of Accounts**	**Trend over the years**
Awutu Senya	UEW Co-operative Credit Union	100%	80%	Increasing tremendously

[14] Interview with a General Manager at Ekumfiman Rural Bank, November 17-20, 2020, Essarkyir, Ekumfi District.

Gomoa West	Gomoa West Rural Bank	40%	36%	Increasing at a very slow rate
Effutu	GCB Winneba	N/A	N/A	N/A
Ekumfi	Ekumfiman Rural Bank	(35.10% in 2015) 28.20% in 2019	60%[15]	Decreasing
Shama	Shama Co-operative Credit Union	80%	50%	Decreasing (due to the banking crisis)

Source: PTF Project Team- based on data provided by bank officials

Compared to bank account ownership, a majority of respondents with access to financial services, represented by 62.20%, had mobile money accounts. While a handful of them had more than one mobile money account from different service providers, the majority of account owners had personal (98.00%) and single accounts. Among the former were a fisherman from the Gomoa West District and a fish processor from the Shama District who operated mobile money merchant (business) accounts in addition to their personal accounts.

Table 6: Gender and registered mobile money account

Gender of Respondents Interviewed	**Registered Mobile Money Account (Percentage points)**		**Total of Respondents (%)**
	Yes	No	
Fish processors/women	36.20	23.80	60.00%
Fishermen/men	26.00	14	40.00%
Total of Respondents (%)	62.20%	37.80%	100.00%

The study recorded more women reporting to have registered mobile money accounts. However, proportionally, more men than women, had registered mobile money accounts. Of the 300 women sampled for the study, 60% had mobile money accounts compared to 40% who did not. Comparatively, 65% percent of the 200 men sampled for the study had registered mobile money accounts while 35% did not. This suggests that financial inclusion through mobile money is happening at a faster rate for fishermen than it is for fish processors.

[15] This share is reported on the 2015 statistics.

This finding speaks in accord with the mobile money gap in Ghana and Sub-Saharan Africa. The gender gap in mobile money uptake in Ghana and in Sub-Saharan Africa were recorded as 17% and 20% respectively (Hatt, James, & Lucini, 2017). The 5-percentage point difference between fishermen and fish processor's financial inclusion via mobile money recorded in this study is lower than the national variance at the national level. The research findings are indicative of the significant contribution of mobile money in the financial inclusion of historically excluded populations, and in the slight reduction in the gender gap in financial account ownership.

4.2.2 Fisherfolk attitudes to mobile money services

The study explored fisherfolk's perception on the usefulness and importance of mobile money. Almost all the respondents with mobile money accounts (98.36%) considered having a mobile money account as important. Among these respondents who viewed mobile money account ownership as important, 49.12% appraised mobile money as convenient, safe and fast. Other respondents viewed mobile money accounts as convenient for sending and receiving remittance (24.38%) and as a form of security (4.24%). More fish processors than fishermen viewed the importance of mobile money in relation to it being convenient for sending and receiving remittance. According to the literature, women are more likely to use mobile money to receive remittance and save than are men (Naghavi, 2020; Chamboko, Heitmann, & Van Der Westhuizen, 2018). However, from the study, fishermen more than the fish processors reported mobile money as useful and important for saving money.

Those who did not see having mobile money accounts as important (1.64%) mostly attributed their position to mistrust of the mobile money system. Others thought that the low incomes generated from their work made their mobile money accounts redundant for low-income earners such as fisherfolk. Even respondents who did not have mobile money accounts considered mobile money as important and expressed desires to own accounts. The study observed that 86% of the respondents who did not have mobile money accounts desired to own accounts. Respondents with bank accounts accounted for only 2 percentage points of the 14% who did not have mobile accounts and did not desire to have any. Those accounting for the 12 percent points did not think financial accounts were a necessity. It will be critical to enhance the financial capability of fisherfolk so that they can be equipped with the knowledge and skills to aid them beyond the management of resources to understand, select and make use of financial services that fit their needs (World Bank, 2019).

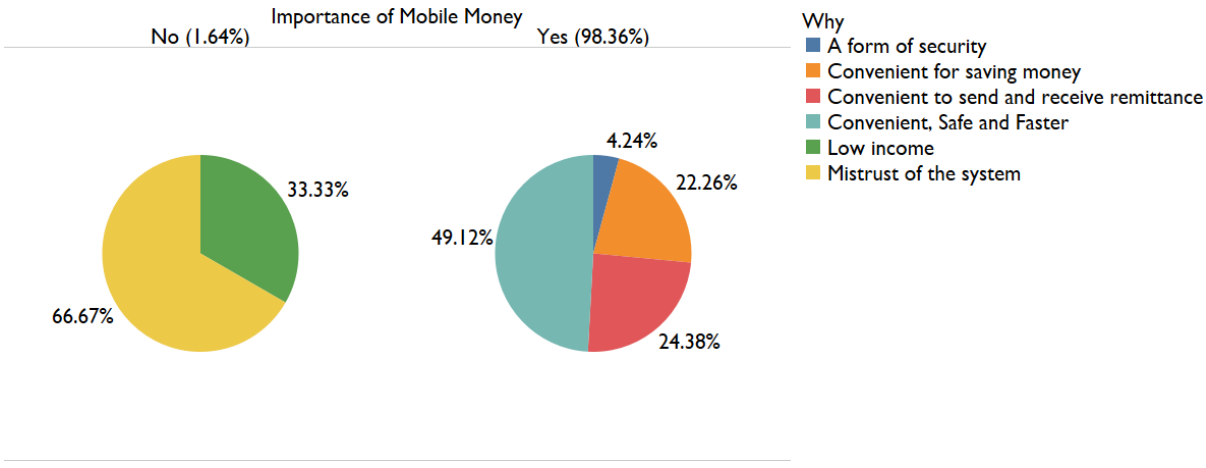


Figure 6: Respondents' perception on the importance of mobile money

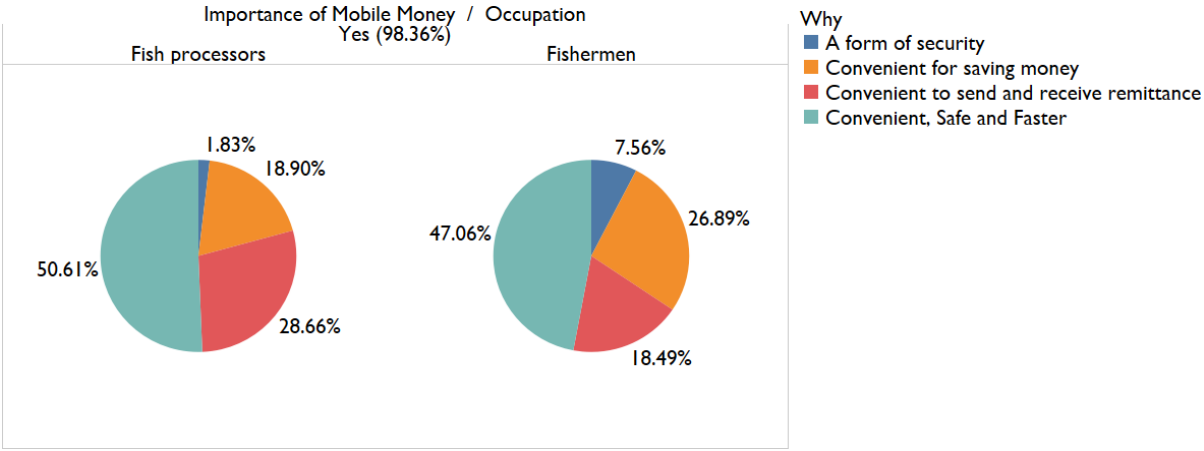


Figure 7: Respondents' gendered perceptions on the importance of mobile money

4.2.3 Usage of Mobile Money Services by Fisherfolk

To assess the use of mobile money services, respondents who had registered mobile money accounts were asked to indicate if their accounts were active, that is, if they had been used to make payments, receive and/or send money in the past twelve months. An overwhelming 98% of the respondents with registered mobile money accounts used their accounts to make transactions, with women accounting for 57.1 of the percentage points. Majority of the 2% who reported their accounts as inactive were women. Account dormancy among fisherfolk was a noteworthy concern raised by mobile money service providers during the expert interviews. The service providers believed that account dormancy resulted from fisherfolk inability to operate their phones. Conversations with some of the women whose accounts were inactive revealed that they accessed mobile money services through the accounts of immediate family members and mobile money vendors in some instances. This gives credence to the observation made by Soursourian (2019) that viewed from the demand-side, account dormancy may not necessarily be a financial inclusion problem to be fixed.

The study also explored mobile money services used by fisherfolk. It particularly looked at the use of mobile money to make payments, send and receive money, borrow money, and save in relation to their fishing activities. The findings show that cash remains critical for the coastal fishery economy. The fisherfolk sampled for the study essentially used their mobile money accounts for receiving money and for cashing out from their mobile money wallets. Fish processors were more likely than fishermen to use their accounts to make payments, receive and send money. Fishermen regularly used their accounts to save and borrow relative to fish processors.

Less than a fifth of those with active mobile money accounts reported that they used their mobile money wallet to save. The possibility of fraudsters swindling fisherfolk out of their money, particularly fish processors, dissuaded them from saving and encouraged cashing out from their accounts. Only 2.32% of respondents with active accounts used the mobile money borrowing services to borrow money.[16] One of the reasons for this was that the fisherfolk did not know how to use the borrowing

[16] Respondents reported borrowing airtime for voice calls which they distinguished from mobile money borrowing services.

services. It could also be attributed to the high interest rates charged (20% per month), and rigidity of mobile money loan repayment arrangements.

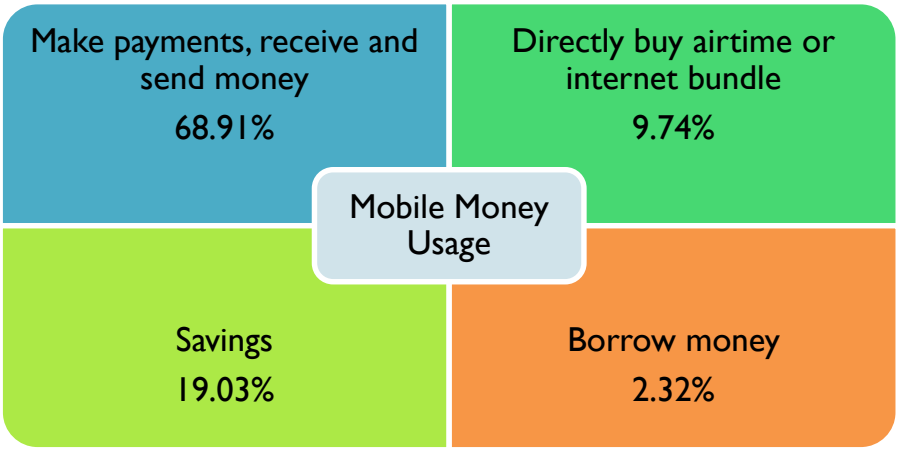


Figure 8: Reported mobile money services used by fisherfolks

The study investigated the purposes for which fisherfolk used mobile money to make payments, send and receive money, borrow money, and cash out from their accounts. This was aimed at examining the extent of usage of mobile money services in relation to the fishing economy. This report also ranks the purposes for which the fishermen and fish processors interviewed used the mobile money services.

4.2.3.1 Making and Receiving of payments related to fishery activities

When fisherfolk were asked to indicate how they made and received payments within the fishery economy in relation to mobile services, it was observed that fishery in the PTF districts is essentially a cash economy. Figure 9 shows the percentage distribution of the mode of payments fisherfolk used for fish payments, fuel and other fishery related services. Respondents reported that they made and received payments in cash more than through any other mode of payment. Cash was the principal means recorded for the making and receiving of payments for fish - both fresh and processed (62.04%), fuel - for fishing boats and for smoking fish (85.19%) and fishery related services such as cost of nets and labour cost of fish and fuel carriers (81.40%). A combination of cash and mobile money as a mode of transaction stood at 16.79% for the sales and purchase of fish, 9.63% for the sales and purchase of fuel and 12% for fishery related services.

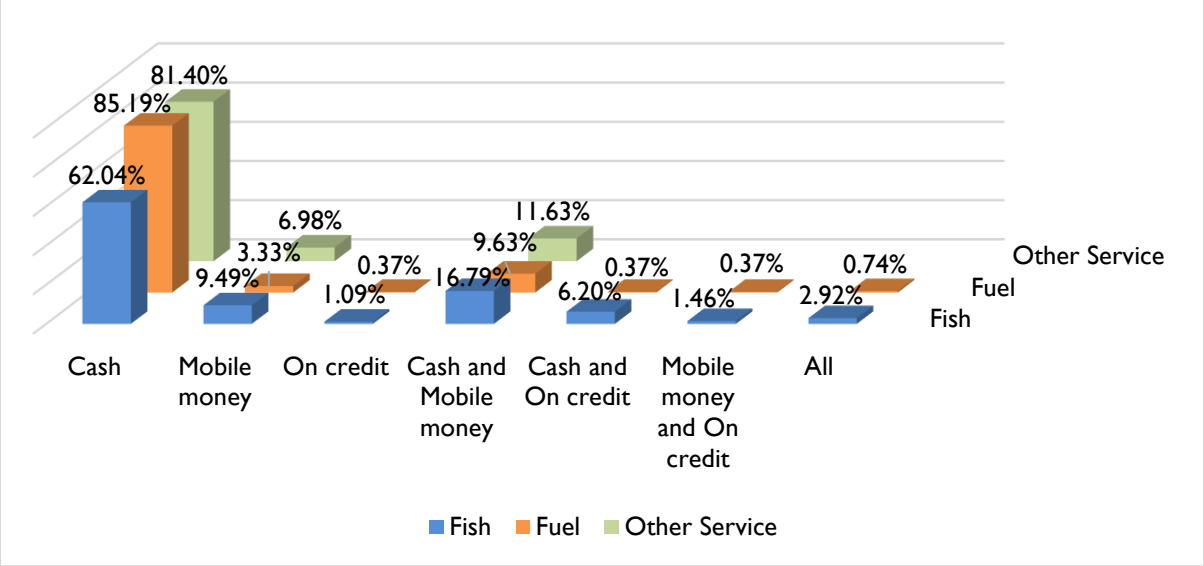


Figure 9: Distribution of respondents' mode of payments for fish, fuel and other services

Observing fisherfolk payments via mobile money alone, the study found out that fisherfolk were more likely to make payments via mobile money for personal shopping than for fishery related transactions. The Gantt chart in figure 10, below, shows the level at which fishermen and fish processors make payments towards different purposes on a scale of 1 to 5 (where 1 indicates least payment and 5, most payment). It was observed that only few fish processors make payment for fish and fish related activities via mobile money with the majority still in the cash system. This is because fishermen from whom they often purchase fish, and others they engage for fish smoking fuel and for the transportation of fish receive payments in cash. It was surprising that fishermen reported that they made most mobile money payments in the area of fish related payments including payments for fuel and nets as indicated in figure 10. The fishermen, typically, do not buy fish, and had indicated in other conversational instances that cash was required for the purchase of fuel and nets. The observation that mobile money payments were mostly related to mobility and items taken on credit may well throw some light on the apparent contradiction. It was observed that payments for personal shopping via mobile money were all related to purchases made on credit and/or in places other than where the fisherfolk lived. The fishermen tend to make payments via mobile money on fishing expeditions (fish related business/activity) and the fish processors on fish marketing routes.

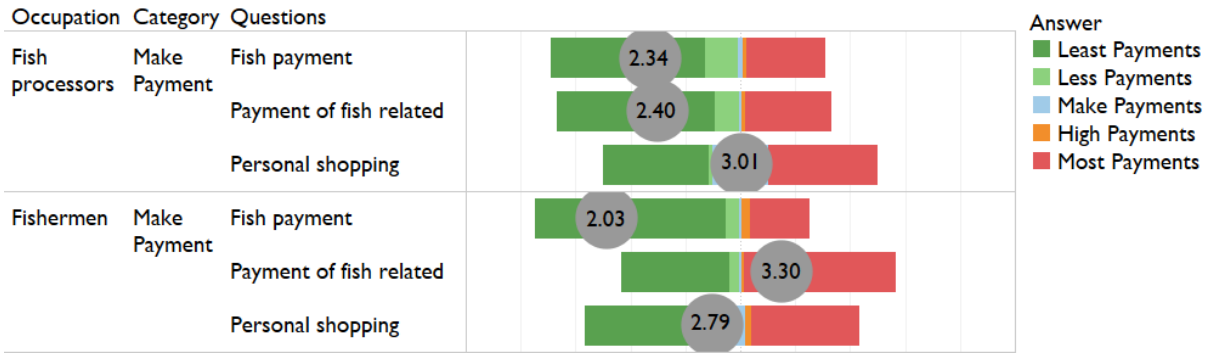


Figure 10: Level of usage of mobile money services in making of payments by occupation

Observing the level at which fisherfolk receive payments via mobile money for different purposes, the study found that the respondents comparatively received more payments via mobile money for fish sold and local remittance than any other purpose. International remittance and payments from the government/pensions recorded the least payments fisherfolk received. At variance with literature that points to women receiving more remittance via mobile money (Naghavi, 2020; Chamboko, Heitmann, & Van Der Westhuizen, 2018), the level at which the fishermen interviewed received local remittance via mobile money was higher than the level at which the fish processors did.

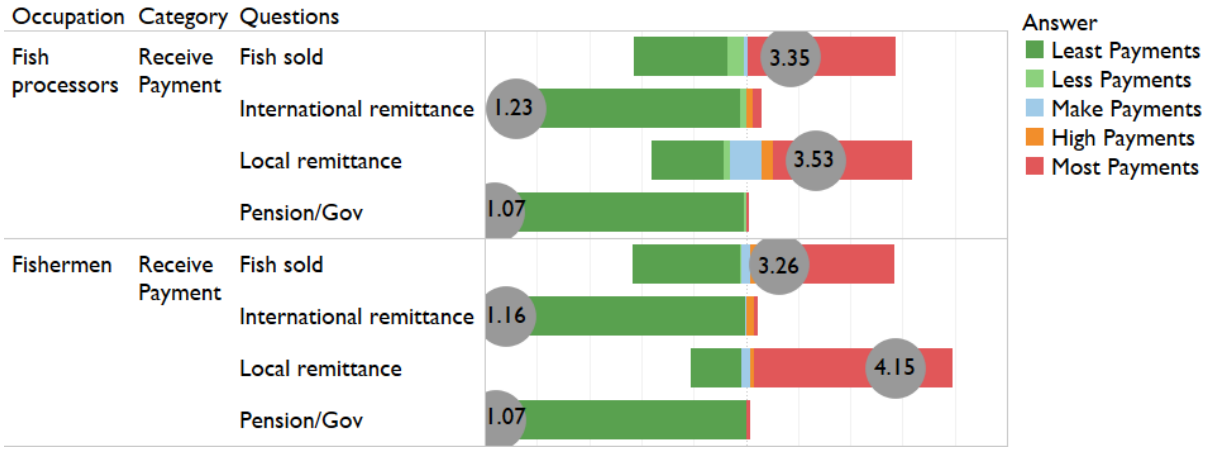


Figure 11: Level of usage of mobile money services in receiving payments by occupation

The study also tracked the level at which fisherfolk used mobile money services to borrow money and cashed out money towards different purposes. The respondents constantly cashed out from their mobile money wallets. For both fishermen and fish processors, family needs and the fish business were reported as reasons why they cashed out funds from their mobile money wallets. Figure 12 presents a ranking of the reasons why fisherfolk withdraw money from their mobile money wallet.

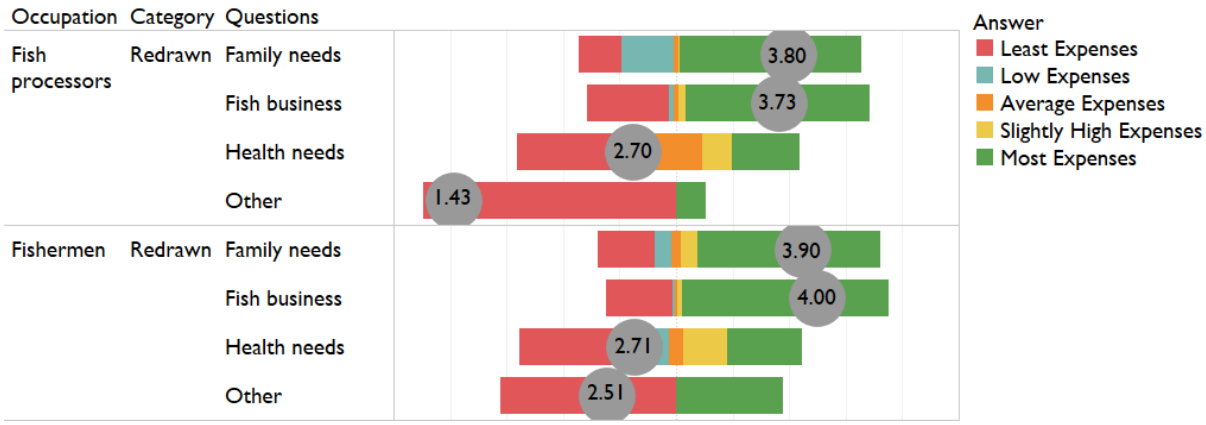


Figure 12: Fisherfolk use of funds cashed out of mobile money wallets by occupation

For mobile money account holders who had borrowed money through their accounts (2%), fishery business related expenditure was reported as the major reason why the money was borrowed. This was relatively similar for both fishermen and fish processors.

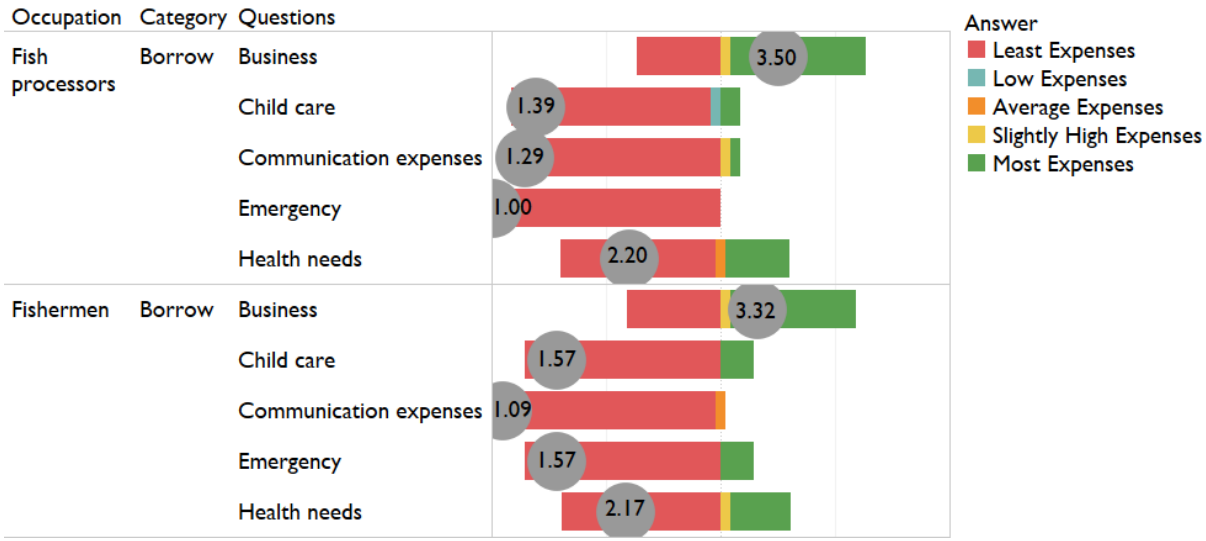


Figure 13: Fisherfolk use of credit accessed via mobile money accounts by occupation

Overall, when the respondents were asked to assess the needs towards which they mostly used mobile money services, that is, whether towards personal needs including household needs or fishery-business needs, it was observed that there was a sharp division of financial needs in relation to mobile money use. It was even more surprising that this was relatively similar for both fish processors and fishermen, considering that women's financial needs have been found to often be related to both reproductive and productive activities.

More than half of the respondents (53.49%) who had registered accounts and used mobile money services reported that their use of mobile money was principally towards financial needs that were

personal. Less than a tenth of these respondents (7.97%) indicated that they used the services towards both business and financial needs while 38.54% of the respondents reported that they used mobile money services towards financial needs that were fishery-business related rather than personal related.

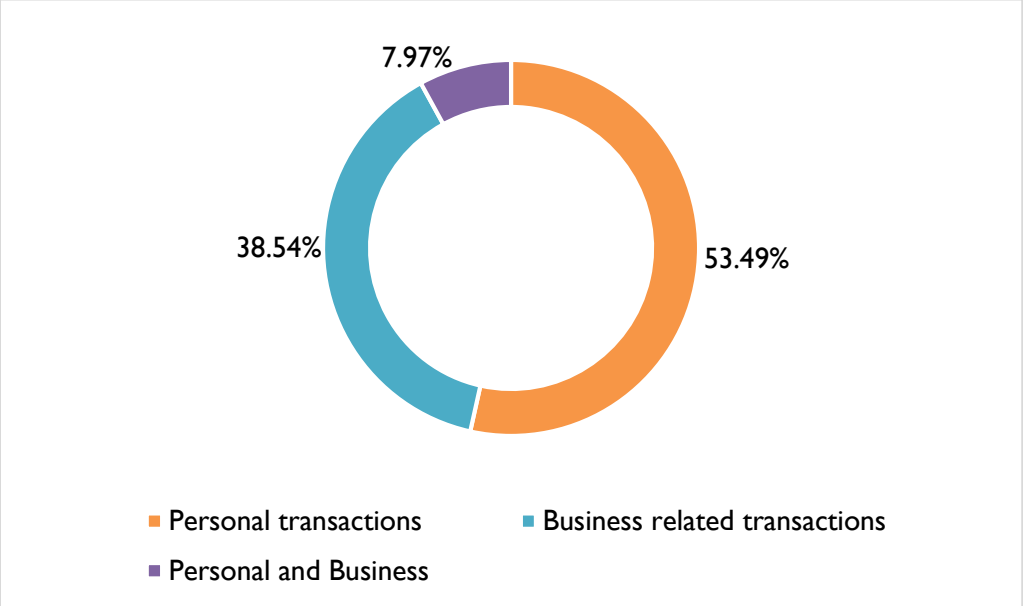


Figure 14: Financial needs towards which fisherfolk use mobile money services

4.3 Barriers and Challenges to Mobile Money Adoption and Usage among fisherfolk

The study investigated the barriers to fisherfolk adoption of mobile money and the challenges they encountered in using mobile money services. The literature establishes access to mobile phones, poverty and/or lack of money, lack of access to required identification documents, low literacy and skills, safety and trust of the system, and gender discrimination as the barriers to the adoption and use of mobile money (Naghavi, 2020; Delaporte & Naghavi, 2019; Chamboko, Heitmann, & Van Der Westhuizen, 2018; Demirguc-Kunt, et al. 2018; Gammage, et al., 2017). In the usage of mobile money services, this study found that understanding of technology and of the mobile money service operations challenged fisherfolk usage of mobile money services. The findings on the barriers of adoption and use particularly for women, in this study, are in accord with the findings observed by Delaporte and Naghavi (2019) in a study conducted in Côte d'Ivoire and Mali.

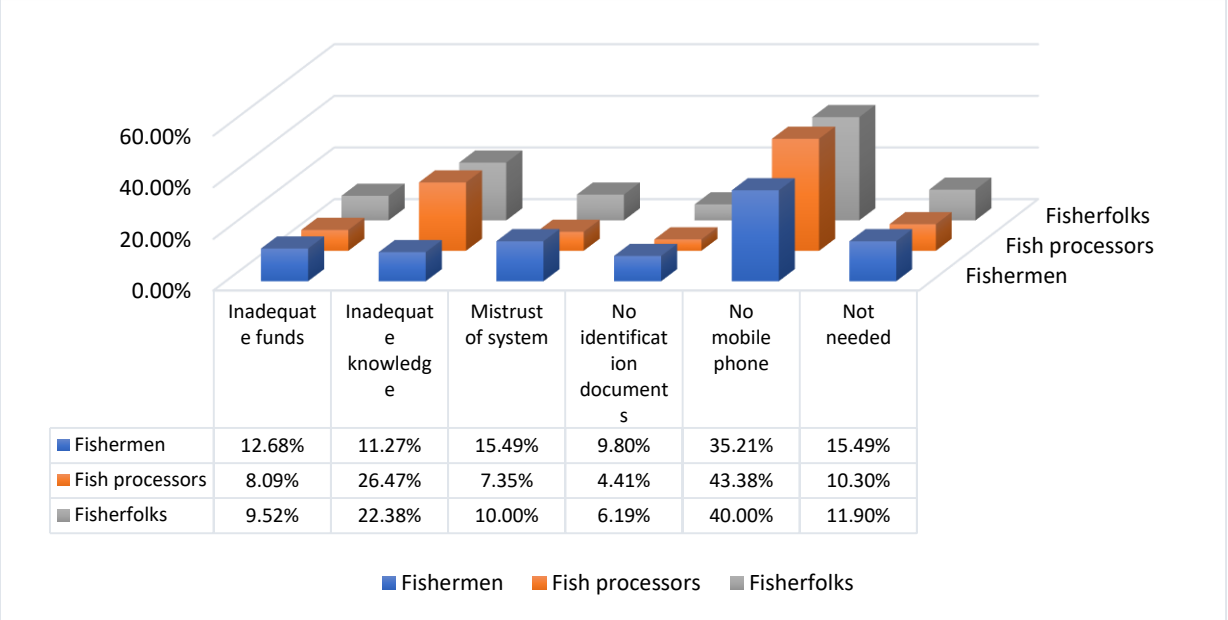
All the respondents with mobile money accounts had registered with their own identification documents. Observations from informal conversations with fisherfolk reveal that the national identification policy implementation in Ghana, particularly the identification registration processes carried out in the country, accounted for fisherfolk access to identification documentation.

4.3.1 Barriers to Fisherfolk Adoption of Mobile Money

The officials of mobile money service providers interviewed in this study agreed that there were many fisherfolk in the PTF project districts who were not signed up to any of the mobile money platforms. They identified the barriers to mobile money adoption as illiteracy, low-income levels, recent fraudulent activities on mobile money platforms, and the charges on the use of mobile money services.

When asked why they did not have mobile money accounts, respondents who did not have registered mobile money accounts indicated six major barriers to their adoption of mobile money services. In accord with the literature, the findings of this study show that access to mobile phones was a major barrier to fisherfolk adoption of mobile money with 40% of the respondents reporting it as the reason why they did not have mobile money accounts. It is noteworthy, however, that fishermen who did not have mobile money were 8% more likely to own mobile phones than fish processors who did not have mobile money. Inadequate knowledge of the mobile money platform (22.38%), inadequate funds (9.52%), mistrust of the mobile money system (10%) and lack of identification documents (6.19%) were other barriers identified. While mistrust of the mobile money system and a viewpoint that mobile money accounts were not needed recorded the second highest barrier for fishermen (15.49% respectively), fish processors reported inadequate knowledge (26.47%) as their second most significant barrier.

Among the aggregate respondents without mobile money accounts, 11.9% of them stated that mobile money accounts were not essential. Additionally, these 12% did not have bank accounts. Sensitization and education on the importance of access to financial services will be required for these fisherfolk. Fisherfolk must be exposed to financial capabilities and the options available to them, so that they can be better positioned to achieve their goals, which may involve formal financial services (Soursourian, 2019). These could be further explained by a preference for cash. According to the World Bank (2016) this would be indicative of a lack of demand for financial services that requires financial literacy for the improvement in awareness to generate demand.



	Inadequate funds	Inadequate knowledge	Mistrust of system	No identification documents	No mobile phone	Not needed
Fishermen	12.68%	11.27%	15.49%	9.80%	35.21%	15.49%
Fish processors	8.09%	26.47%	7.35%	4.41%	43.38%	10.30%
Fisherfolks	9.52%	22.38%	10.00%	6.19%	40.00%	11.90%

Figure 15: Barriers to fisherfolk adoption of mobile money by occupation

4.3.2 Challenges to Fisherfolk Usage of Mobile Money Services

In the exploration of fisherfolk use of mobile money services, particular attention was paid to the making and receiving of payments, borrowing of money, and the cashing out from mobile money accounts. The findings show that it was challenging for fisherfolk account holders to perform these transactions independently. A majority of respondents with mobile money accounts (73%) depended on mobile money agents at access points or other people in the communities to perform the transactions they make using their mobile money accounts. The mobile money service providers interviewed in this study highlighted that although this was a problem for both fish processors and fishermen, fish processors, usually with very low educational levels relied on their children and other close family and friends for help to the point of sharing their mobile money wallet security pin numbers with these persons. They noted that some investigations into cases of breaches in fish processors' accounts implicated persons the women had trusted with their wallet pin numbers.

While 27% of respondents with mobile money accounts could perform transactions without any challenges, those who could not perform transactions by themselves were mostly challenged with their inability to operate their mobile phones (57.80%). Other challenges identified by this group of respondents included low educational levels (27.20%) and inadequate knowledge on mobile money operations (15%). Figure 16 and Figure 17 show the proportion of respondents who encountered challenges in performing transactions with their mobile money accounts and the identified challenges.

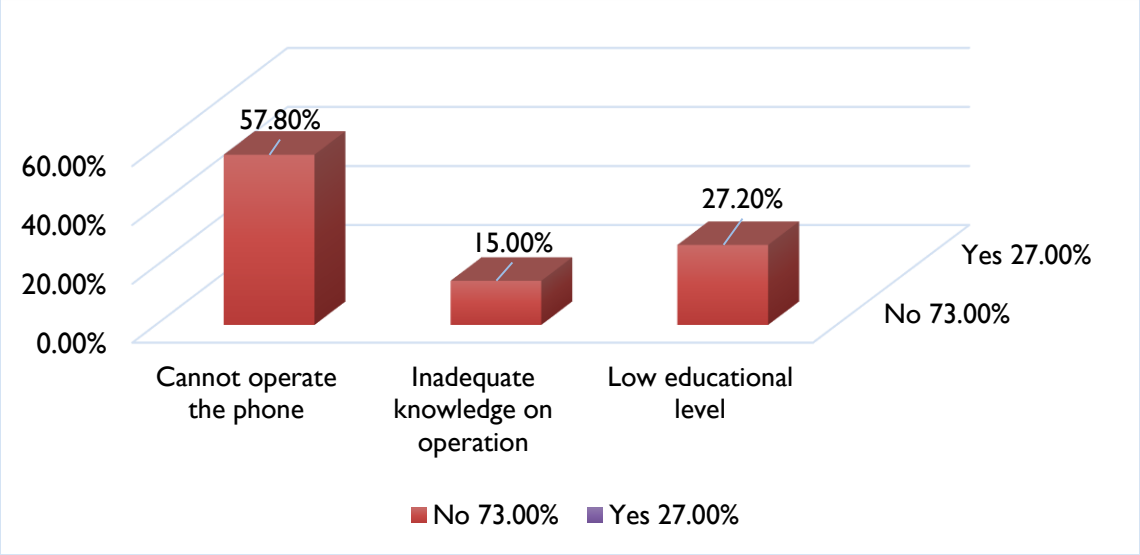


Figure 16: Challenges fisherfolk face in performing mobile money transactions independently

It appears that although the steps in mobile money operations may be simple enough to be grasped by fisherfolk, their relationship with technology itself presented the principal challenge. This is most relevant for fish processors as their ability to perform mobile money transactions by themselves was disproportionately challenged by their inability to operate their phones. Figure 17 shows the comparison of the challenges faced with performing transactions by gender. The findings show that 62.14% of fish processors attributed their challenge in performing transactions on their own to their inability to operate their phones as compared to 47.70% of fishermen. Also, compared to 34.09% of fishermen who attributed their challenge to their low educational levels 24.27% of fish processors saw educational level as the reason for their inability to perform the transactions by themselves.

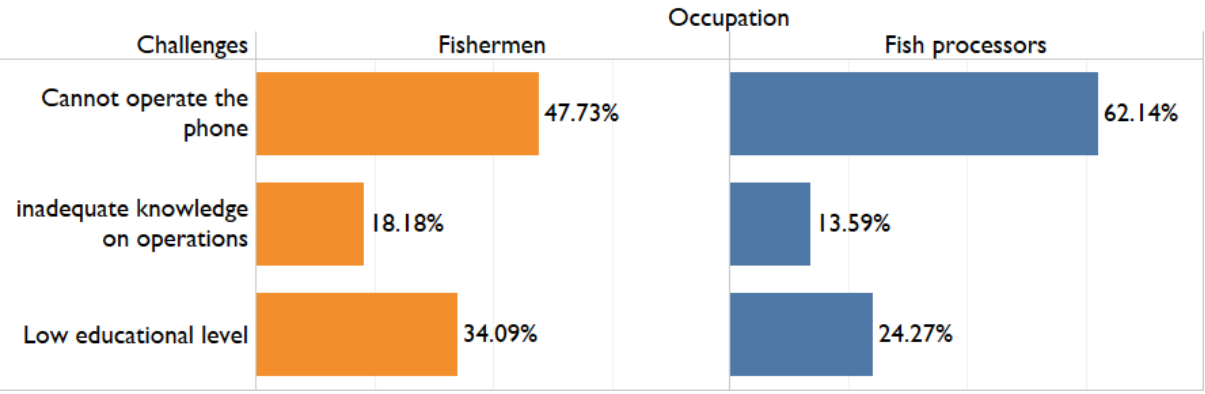


Figure 17: Challenges faced with performing mobile money transactions by occupation

The challenges fisherfolk encounter exposes them to risks of losing their monies and may affect their quality of financial inclusion as well as its impacts on their lives and livelihoods. Mobile money agents were recorded as the main sources of help for fisherfolk who could not perform transactions by

themselves. Majority of both fishermen and fish processors who could not perform mobile money transactions independently reported getting help from agents within the community. Figure 18 which shows this also indicates other sources including immediate family members, other relatives and friends, and nearby assistants. About 18.18% of fish processors resort to the help of their immediate family members as against 8.57% of fishermen. It is a cause for concern that more than 10% of both fishermen and fish processors asked nearby assistants to help with their mobile money transactions. This increases their risk of exposure to fraudulent persons who could take advantage of their inability to complete transactions on their own.

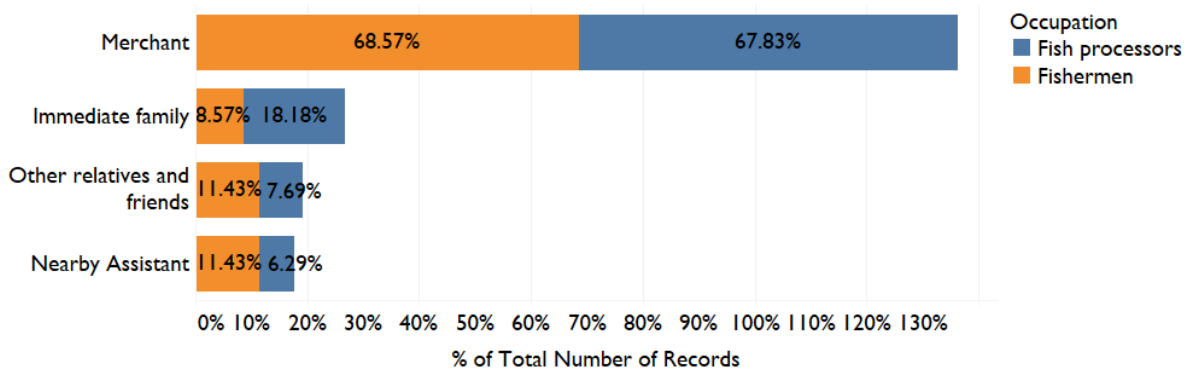


Figure 18: Sources of help for fisherfolk who could not perform mobile money transaction by occupation

5. CONCLUSIONS AND IMPLICATION FOR WOMEN FISHERFOLK'S FINANCIAL INCLUSION

The main objective of the study was to explore the gendered nature of adoption and usage of mobile money services towards the enhancement of fisherfolk socio-economic livelihoods with emphasis on the gendered nature of respondents' financial inclusion via mobile money, user habits, preferences and attitudes, and the challenges to mobile money adoption and usage. The conclusions are presented in line with the objectives of this study.

The findings generally speak in accord with the literature on the gendered nature of access and use of mobile money in Sub Saharan Africa including Ghana, with some variations. The relevance of the milieu of the PTF project communities is in the contextualisation of the general issues and in the opportunity of the PTF project to influence changes to promote inclusive and sustainable development through financial inclusion. It is also a window into the particular empirical nature of financial inclusion via mobile money among coastal fisherfolk in Ghana. The research reveals that mobile money account ownership is responsible for the financial inclusion of many women fisherfolk whose mobile money account is their first financial account. Additionally, women fisherfolk are disproportionately excluded in both the access to and use of mobile money services with implication for their adoption of mobile money and for the quality of use for those who are able to access them. If this is not addressed, there will be a cycle of gendered financial exclusion manifested in the gender gap in account ownership and women's use of services towards the meeting of their financial needs despite the potential of mobile money for women's financial inclusion.

The socio-demographic characteristics of gender and age are shown to be very relevant for financial inclusion. Income levels including whether they are regular or not are also relevant for fisherfolk financial inclusion. All fish processors interviewed were women and fishermen interviewed were men. This is indication of the sharp gendered division of labour in the coastal fishery sector. About a quarter (25.40%) of the respondents were aged between 31 – 40 years. About 65% of fishermen interviewed had registered mobile money accounts compared to 60% of women with accounts pointing to a gender gap in mobile money account ownership in PTF project communities. This indicates that more women than men are likely to be financially excluded. The ownership of mobile money accounts was observed as high for fish processors aged between 31 – 40 years (34.30%) while about 30% (29.70%) of fishermen with accounts were younger men aged between 18 – 30 years. It was also identified that about 6.40% of the fisherfolks earned below the national daily minimum wage (NDMW) of GHC 11.82 during the bumper season and 36.40% earned below the NDMW during the lean season.

About 66.40% of fisherfolk in PTF project communities owned financial accounts with about a third (33.60%) of them having no account. Mobile money contributes significantly to the financial inclusion of fisherfolk, particularly fish processors in these communities with mobile money alone accounting for more than half (36.60%) of the percentage points of respondents with formal financial accounts. Additionally, 64.10% of respondents including more than half of whom were women (37.5 percentage points) with financial access through mobile money reported their mobile money accounts as their first financial account.

While not all respondents with mobile money accounts actively used their accounts to access financial services, usage of mobile money financial services was very high. Usage was, however, limited to the receiving and making of payments (69%), and the cashing out from mobile money wallets. Fish processors were more likely than fishermen to use their accounts to make payments, receive and send money and fishermen regularly used their accounts to save and borrow money relative to fish processors. Those with inactive accounts were more likely to be women than men. Privacy issues and trust remain relevant for the quality of use for women fisherfolk. The likelihood of being defrauded influences fisherfolk decision to save using their accounts. The performance of transactions independently was found to be a challenge for fisherfolk use of mobile money services, particularly with regards to digital payments. This perhaps contributes to the reason why cash is still preferred and used over mobile money in the coastal fishery economy. Only 27% of respondents with mobile money accounts could perform transactions without any challenges. The over three-quarters of respondents who could not perform transactions by themselves were mostly challenged with their inability to operate their mobile phones (57.80%) and low educational levels (27.20%). The findings show that 62.14% of fish processors attributed their challenge in performing transactions on their own to their inability to operate their phones as compared to 47.70% of fishermen. Comparative to 34.09% of fishermen who attributed their challenge to their low educational levels, 24.27% of fish processors saw their educational level as the reason for their inability to perform the transactions independently.

In the area of preferences and attitudes, fisherfolk mobile money users were generally positive towards the service with a majority of users (49.20%) claiming the service as convenient, safe and faster. Even respondents without accounts considered mobile money as important and expressed desires to own accounts. The study also found out that in spite of the increased access to digital financial services through mobile money, cash continues to remain paramount among fisherfolk and in the coastal fishery economy. Cash was observed to be the main mode of payment for fish and its related activities for both fish processors and fishermen. The research recorded a high level of payments received through mobile money for fish sold and local remittance for both occupations. It was also recorded that the fisherfolk were more likely to invest borrowed money in their business above other financial needs.

A number of barriers to fisherfolk adoption and use of mobile money were identified. Access to mobile phones was a major barrier to fisherfolk adoption of mobile money with 40% of the respondents reporting it as the reason why they did not have mobile money accounts. However, men fisherfolk who did not have mobile money were 8% more likely to own mobile phones than were women fisherfolk who did not have mobile money. Inadequate knowledge of the mobile money platform (22%), inadequate funds (10%), mistrust of the mobile money system (10%) and lack of identification documents (6%) were other barriers identified. While mistrust of the mobile money system and a viewpoint that mobile money accounts were not needed recorded the second highest barrier for fishermen (15.50% respectively), fish processors reported inadequate knowledge (26.47%) as their second most significant barrier.

In the usage of mobile money services, this study found that understanding of technology and of mobile money service operations challenged fisherfolk mobile money account holders in the performance of transactions, independently. Their relationship with technology itself presented the principal challenge. A majority of them (73%) depended on mobile money agents at access points or other people in the communities to perform the transactions they make using their mobile money accounts. This is most relevant for fish processors as their ability to perform mobile money transactions by themselves was disproportionately challenged by their inability to operate their phones.

The fishing industry although heavily affected by the dwindling fish stock is a promising one and therefore all stakeholders (including financial sectors) must contribute towards bridging the financial gap in the fishery sector; for to be financially included is to be financially free. Priority should be placed on the education of fisherfolk on maximizing their use of all mobile money platforms; from the research, it was identified that all challenges faced with performing mobile money transactions are education and skills related, that is, inability to operate even simple phones, inadequate knowledge on operation and low educational level. This has led to mobile money users limiting their transactions to the making and receiving payments (69%).

Additionally, priority should be placed on all identified constraints/barriers to the adoption of mobile money services. From the research, it is noted that barriers to the adoption of mobile money are related to low levels of education and income, and trust. Education tends to be a barrier to the adoption and use of the service. Other fisherfolk consider their income generation before signing up to the mobile money service. A significant number of fisherfolk earn below the minimum wage. The financial sector crisis in Ghana, and the activities of fraudsters in the mobile money sector has generated a mistrust rendering the fisherfolk unable to sign up to the service.

5.1 Implications for the Enhancement of Women Fisherfolk Financial Inclusion

The conclusions of this study highlight a gender gap in the adoption and use of mobile money and the need to help women achieve increased and better financial inclusion essential for meeting their financial needs. This is needed to bridge the gender gap and to improve the socio-economic livelihoods of PTF communities. The conclusions also point to certain capabilities that need to be prioritised to achieve this and to help women fisherfolk translate mobile money adoption and usage into improvements in their livelihood outcomes.

The convenient use of mobile phones

As mobile money has become central to women fisherfolk financial inclusion achievements, progress is contingent on ensuring that they are able to access and use mobile phones conveniently. It is noted that women's technological appropriation impacts on their ability and level of comfort in engaging DFS (Chamboko, Heitmann, & Van Der Westhuizen, 2018). This is corroborated by the findings of this study which indicate that 62.14% of the women fisherfolk who had mobile money accounts were challenged in its use by their inability to operate their phones comparative to inadequate knowledge on mobile money operations (13.59%) and low educational levels (24.27%). As a result of this issue, women fisherfolk mostly have to seek help from mobile money agents (67.83%) and even nearby assistants (6.29%) who could be fraudsters. Equipping women with the skills to conveniently use their phones for mobile money transactions, through practical trainings, will have implications for their level of comfort in use, their privacy and reduce exposure to financial criminals. This could lead to increased levels of adoption and use of mobile money towards savings. The literature indicates that when women are able to access savings mechanisms, they are able to make decisions towards productive activities

and overcome extreme poverty (Suri & Jack, 2016). This is even more pertinent for younger women who are the least likely to appropriately use mobile money services.

Financial Literacy

Improvement in women fisherfolks' financial literacy must be prioritised as a means to help fisherfolk translate mobile money adoption and usage into improvements in their livelihood outcomes. Financial inclusion is a key element of social inclusion, and particularly in contending with poverty and income inequality as it opens up blocked advancement opportunities for disadvantaged segments of the population (Gammage, et al., 2017, Triki & Faye 2013; Allen, Demirgüç-Kunt, Klapper, & Martinez Peria, 2012). From this study, it is noted that education and knowledge in the use of technology has great impact in the financial inclusion of fisherfolk in the PTF project communities. Mobile money, the most significant financial technology in Africa and Ghana has enabled the financial inclusion of fisherfolk who had been historically excluded. However, their educational levels, inadequate understanding of how the mobile money system works, and the seasonality and low levels of income generated by the fisherfolk, among other constraints, limits the benefits and extent of their access and usage of financial services.

Among the aggregate respondents without mobile money accounts, 12% of them stated that mobile money accounts were not essential. Additionally, these 12% did not have bank accounts. Sensitization and education on the importance of access to financial services will be required for these fisherfolk. The focus needs to be the expansion of financial capabilities and the set of options available to fisherfolk, so they are better positioned to achieve their goals, which may involve formal financial services (Soursourian, 2019). This will involve the equipping of women fisherfolk with the knowledge, and skills to aid them beyond the management of resources to understand, select and make use of financial services that fit their needs.

Considering all the technological, financial and literacy-based challenges, interventions that build the capacities of women fisherfolk to overcome the barriers and challenges in their access and use of mobile money services must be prioritised. Financial education is one of such interventions. The International Labour Organization (ILO) views financial education as a means to provide "basic skills related to earning, spending, budgeting, borrowing, saving, and using other financial services such as insurance and money transfers."[17] Financial literacy programs are required to inform potential users and actual users, and show them how the services work as well as the risks involved. They are vital for enhancing financial literacy and help women to meet their financial needs, attain "better business results, better equality, and more empowerment."[18] The ILO has already developed financial literacy training materials that can be adapted for various target women groups.

[17] https://www.ilo.org/empent/areas/social-finance/WCMS_737729/lang--en/index.htm
[18] https://www.ilo.org/empent/areas/social-finance/WCMS_737729/lang--en/index.htm

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APPENDIX I

QUESTIONNAIRE FOR A RESEARCH STUDY (FISHER FOLKS)

CERATH Development Organization (CDO) is implementing a sustainable fisheries project dubbed "Power to the Fishers". As part of the project activities, CDO is undertaking a study in line with the thematic area of financial inclusion. The study seeks to investigate the gendered adoption and use of mobile money services. Your assistance will be needed in providing the project team with the needed information. Information provided and respondent's identity will be kept confidential. It is optional for you to provide your name.

Name of Enumerator …… Date of interview ……

Community …… District ……

Demographics

1. Name of respondent
   ……..
2. Occupation
   I. Fisherman II. Fish processor
3. Age
   I. Under 18 years II. Between 18 – 30 years III. Between 31 – 40 years
   IV. Between 41 – 50 years V. Between 51 – 60 years VI. 61 years and above
4. Years of experience
   I. Up to 5 years II. Between 6 – 15 years
   III. Between 16 – 30 years IV. 31 years and above
5. Average income after sales of fish (daily, weekly, monthly, annually).
   I. Lean season II. Bumper season
   …… ……..
6. Marital status
   I. Single II. Married III. Divorced IV. Widowed

GENDERED ACCESS AND USE OF FINANCIAL SERVICES

7. Do you have a bank account/account (s) with any financial institution including savings and loans organizations and credit unions? ***IF No, skip to question 10***
   I. Yes II. No
8. If Yes, indicate Bank?
   ……
   ……
9. Have you been part of a group account in a financial institution and/or part of a VSLA or ROSCA? **IF YES, PLEASE UNDERLINE THE APPLICABLE ONE**.
   I. Yes II. No
   If yes, are you currently part of that group/account?
   I. Yes II. No
10. Do you have a mobile money account(s)? ***IF No, skip to question 26***
    I. Yes II. No
    If yes, how many accounts do you have? ……
11. Did you register the account with your own ID card?
    I. Yes II. No, Someone registered with their card
12. Is your mobile money account your first financial account?
    I. Yes II. No

FISHERFOLK MOBILE MONEY USER HABITS AND CHALLENGES

13. What type is your mobile money account?
    I. Personal II. Merchant/Agent

14. Have you used your mobile money account to make payments, receive and/or sent money in the last 12 months?
    I. Yes II. No
    If no, how do you make mobile money transactions? .....

15. What informs your use of different mobile money services over others?
    .....
    .....
    .....

16. What financial transactions do you use your mobile money account to do?
    I. Make payments, receive and send money
    II. Directly buy airtime or internet bundle
    III. Borrow money (from service provider)
    IV. Receive social payments/benefits from government agencies (e.g. LEAP cash transfer, COVID-19 relief)
    V. Savings (set aside money for any reason)
    VI. Other, *specify* ….....

17. Do you usually perform these transactions by yourself without any challenges?
    I. Yes II. No
    i. If No, what challenges do you face?
    ……
    ……
    ii. Who performs the transactions for you?
    ……
    …….

18. In cases when you have made payments/sent money with your mobile money account, what kind of payments have they been?
    ……

Payments made	**Rank (3 – most payments, 1 – Least payments)**
Payments for fish related services including fuels for fishing and processing	
Payments for personal shopping	
Payments for fish	

19. In cases when you have received money on mobile money account, what type of transactions have they been?

Transactions	**Rank *(4 – most transactions, 1 – Least transactions)***
Local remittance	
Payments from fish sold	
International remittance	
Pension/government payments	

20. In cases when you have borrowed money on mobile money (from service providers), what has the money been used for?

Needs	**Rank *(5 – Highest need, 1 – Least need)***
Health needs (personal & family)	
Ward/child education or care	
An emergency	
Airtime/data bundle	
Business	

21. In cases when you have withdrawn money from your mobile money account, what do you usually use the money for?

Money Usage	**Rank (4 – *Highest need, 1 – Least need)***
Health needs	
Family needs	
Fish business transactions	
Other, *specify*	

22. What would you say you mostly use your mobile money account for?
    I. Personal transactions II. Business related transactions
    Why is this the case?
    ……
    ……

23. What is the maximum amount you have kept in your mobile money wallet?
    ……..
24. How do you usually make payments for the following?

Items	**I. Cash**	**II. Mobile money**	**III. On credit**
Fish			
Fuel			
Services rendered			
Other			

PERCEPTIONS OF, AND ATTITUDES TO MOBILE MONEY

25. Why did you decide to get a mobile money account?
    ……
    ……
    ……
26. How did you acquire knowledge on mobile money services?
    I. Service providers/advertisements II. Family and friends III. Other, *specify*

27. Do you think it is important to have a mobile money account?
    I. Yes II. No
    Why
    ……
    ……
    ……

BARRIERS AND CHALLENGES TO MOBILE MONEY ADOPTION AND USAGE

28. ***If No for question 10***. Why do you not have a mobile money account?
    I. Mistrust of system II. No identification documents
    III. Inadequate knowledge/ understanding IV. Inadequate funds
    V. No mobile phone VI. High transaction fees
    VII. Not needed VIII. Other, *specify*……
29. Would you like to have a mobile money account?
    I. Yes II. No
    Why? .....
30. What should the mobile money service providers do for you to sign up or use the service?
    ……
    ……

………
………
…………………………………………………………

THANK YOU

APPENDIX 2

INTERVIEW GUIDE

MOBILE MONEY & FINANCIAL INCLUSION IN PTF BENEFICIARY COMMUNITIES

CERATH Development Organization (CDO) is implementing a sustainable fisheries project dubbed "Power to the Fishers". As part of the project, CDO is undertaking a study in line with the thematic area of financial inclusion. The study seeks to investigate the gendered adoption and use of mobile money services and products. Your perspective as a significant competitor in mobile money services provision in Ghana/financial services provider is very important to this study. Information provided and respondent's identity will be kept confidential.

Name of Interviewer …… Date of interview …….

Community ……. District ……..

Basic Information

1. Name of Key Informant
   ……
   …….
2. Name of mobile money service provider
   ……
3. Role/Position of key informant
   …….

Key Research Questions

4. About what share of your customers are fisher folk?
   ……
5. Which of your products and services do they mainly use and/or inquire about? And why?
   ……
   ……..
   ……
   ……..
   ……
   ……..
   ……
   ……..
   ……
   ……..

6. Do you think there are many fisher folk in the district who are not signed up to any type of mobile money?
   I. Yes II. No
   Why
   ……
   ……..
   ……
   ……

7. In your interactions, what do you consider as barriers to the adoption of mobile money among fishmongers? And why?

……
……..
……
……..
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……..
……
……..

How about among fishermen?

……
……..
……
……..
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……..

8. What products and services do you usually promote among fisher folks? And why?

……
……..
……
……..
……
……..
……
……..

9. Do you promote mobile money services and products in the fishing communities?

I. Yes II. No

If yes, what challenges do you encounter?

What do you consider as key challenges to mobile money adoption and use in these communities?

……
…….....
……
……

THANK YOU

APPENDIX 3

INTERVIEW GUIDE
SOCIAL AND FINANCIAL INCLUSION IN PTF BENEFICIARY COMMUNITIES (CREDIT & SAVINGS)

CERATH Development Organization (CDO) is implementing a sustainable fisheries project dubbed "Power to the Fishers." As part of the project, CDO is undertaking a study in line with the thematic areas of financial and social inclusion. The study seeks is interested in fisherfolk gendered access to and adoption of financial services, particularly credit and savings. Your perspective, as an institution that enables access to credit and savings opportunities is very important to this study. Information provided and respondent's identity will be kept confidential.

Name of Interviewer …… Date of interview ……

Community ……. District ……

Basic Information

10. Name of Key Informant
    ……
    ……..
11. Name of social service provider
    ……
    ……
12. Role/Position of key informant
    ……
    …….

Key Research Questions

13. What does your savings and credit packages entail (in terms of service details)?
    ……
    ……
    ……
    ……
14. About what share of your client-base is fisher folk?
    ……
15. What proportion of your fisher folk client-base are men vis-a-vis women?
    .....
16. What has been the trend over the years? Is your fisher folk client-base increasing, for instance in the last five years (If you have been in the district for that long)?
    .....
    .....
17. Which of your services and/or products do fisher folk mainly use and/or inquire about? Any explanation for this?
    ……
    ……..
    ……
    ……..
    ……
    ……..

……
……..

18. Is there a difference between the men and the women?

……
……..

19. Do you carry out any regular sensitization to promote your service/products among the fisher folks?

I. Yes II. No

If No,

why……
……..

20. What challenges do you encounter in the promotion of your services/products among fisher folks?

……
……
……
……

21. In your interactions, what do you consider as barriers to accessing your services/products among fishmongers?

……
……

……
……..
……
……..

And among fishermen?

……
……..
……
……..

THANK YOU