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Financial Technology Services, Government Regulations and Financial Inclusion of Small-Scale Fish Farmers in Homa Bay County, Kenya

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Abstract

This study explored the impact of FinTech and Government Policies on Financial Inclusion for small-scale fish farmers in Homa Bay County, Kenya. The study focused on how access to finance has been widened through agency banking, mobile money and online banking services among these people who had low incomes or were marginalized. The research also examined whether government regulations affect the relationship between fintech channels and financial inclusion. The study was underpinned by Innovation Diffusion Theory, Financial Intermediation Theory, Technology Acceptance Theory and Public Interest Regulation Theory. This study employed causal research design with a sample size of 495 small scale fish farmers using stratified random sampling technique that yielded 144 respondents. Data analysis involved multiple regression, correlation analysis and diagnostic tests that utilized SPSS 26.0 for data analysis. The results showed that agency banking; mobile money services and online banking together explained 58.1% of variation in financial inclusion among the farmers indicated by R squared of 0.581.The findings revealed that Agency Banking had significant effect on financial inclusion ($\beta = .231$, $p = .001 < .05$), as well as Mobile Money Services ($\beta = .196$, $p = .019 < .05$) and Online Banking Services ($\beta = .410$, $p = .000 < .05$). Therefore, the study concludes that Agency Banking; Mobile Money and Online Banking play important role in enhancing financial autonomy among small scale fish farming communities through increased access to bank accounts, secured transactions processes and agent incomes respectively. In view of the findings, the study recommends that financial

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institutions together with fintech companies should invest in platforms which are user-friendly safe secure meant for use by small holder dairy farmers themselves.

Keywords: *Agency banking, Mobile money services, Online banking services, Government regulations, Financial technology services, Financial inclusion*

1.0 Introduction

The significance of financial inclusion lies in its ability to offer affordable and accessible financial services to every category of people. It ensures that individuals can manage their economic obligations effectively so as to combat poverty as well as enhance massive economic development. Mutua (2018) states that financial inclusion is a vital ingredient for the creation of an all-inclusive financial system in any nation, which also addresses the exploitative informal sources of credit that undermine the overall stability of a country's financial system and a key enabler of growth especially towards actualizing Kenya's Vision 2030 and some SDGs. According to a report that was released by Findex in the year 2021, around 1.7 billion individuals out of the total population of the world do not have access to legitimate financial services. This represents a large portion of the global population. In addition to this, it is projected that more than forty percent of micro, small, and medium-sized firms that are based in developing nations continue to have difficulty gaining access to commercial capital. The accessibility of low-cost digital financial services, on the other hand, has the potential to close these gaps and open the door to financial inclusion for the population that has been underserved.

The value of mobile money transactions as a part of GDP is expected to increase by an average of two percentage points for poor and lower medium-income economies in the year 2020. This growth was driven by an increase in usage of mobile money around the globe in economies with low and middle incomes. While the largest increases occurred in high- and upper-middle-income nations, mobile and internet banking transactions climbed in volume and value in all countries (IMF Financial Access Survey, 2021). There are about 6 billion mobile users in the world showing clearly that online banking is taking shape. In Africa, mobile banking transactions rose from $495 billion in 2020 to $701.4 billion in 2021. The current number of mobile banking users in Africa is 600 million. (Vpn alert, 2023). In recent years, Financial Technology services have gained significant traction in Europe, playing a crucial role in advancing financial inclusion among small-scale farmers. For instance, in Spain, the implementation of mobile banking services and digital payment systems has provided farmers with more accessible and convenient financial services (European Central Bank, 2019).

Sub-Saharan Africa has showcased the remarkable potential of financial technology services in advancing financial inclusion. The introduction and expansion of fintech in Africa have resulted in greater accessibility to formal financial services compared to any other region globally, with nearly 700 million individual users, accounting for almost half of the worldwide user base. Fintech platforms now provide reliable, affordable, and real-time transactions in both rural and urban areas, where traditional banks have not previously established physical branches (International Finance Corporation, 2018). According to Meyer (2015), the majority of nations in Sub-Saharan Africa still lag behind in providing financial services for agriculture and rural areas, despite large expenditures and policy reforms. The emergence of financial technology with a primary focus on cost reduction offers some glimmer of hope that the situation may be improved.

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FinAccess Household Survey (2021) reported that the proportion of Kenyan households with formal access to financial services and products increased to 83.7% in 2021, compared to 82.9% in 2019. This growth can be attributed to advancements in mobile money, mobile banking, and other technological innovations within the financial sector. However, the percentage of individuals accessing financial services through informal providers has only slightly declined from 6.1% in 2019 to 4.7% in 2021. Regrettably, the percentage of individuals facing challenges in accessing any type of financial services has experienced an increase from 11% in 2019 to 11.6% in 2021. This rise can be attributed primarily to the detrimental impact of the COVID-19 pandemic. The pandemic has negatively impacted household livelihoods, earnings, and employment opportunities, leading to an increase in financial exclusion.

To promote financial inclusion, the CBK has implemented various regulatory measures. These interventions have facilitated the successful introduction of multiple services by financial institutions. These services have been designed to enhance convenience for existing customers as well as extend their reach to previously underserved individuals, thereby expanding their customer base (Kenya Bankers Association, 2014). According to Digital Financial Services Summit (2023), the Digital Financial Services Association of Kenya reported to have disbursed over Sh500 billion in mobile loans for the past 8 years to small businesses and households. Further, the association reported that over 8 million Kenyans have benefitted from mobile loans with about 70% of those borrowing for business. The association has now rebranded to enhance financial inclusion, reach out to more players in the sector and be more alert to the needs of their customer.

The emergence of mobile loan apps has significantly contributed to expanding financial access for individuals seeking short-term financial assistance. These apps have become an important facilitator in providing necessary funds to users in need of immediate financial services (Muli, 2020). With the expansion of technology through invention of smart phones, mobile loan apps such as Tala loans, Timiza loans, Branch loans, Saida loans and many others have made it possible for small businesses and consumers to borrow funds without bank account hence increasing accessibility to credit facilities. Mobile money services like M-Pesa and Airtel Money have revolutionized the way financial obligations are fulfilled, enabling individuals to make both domestic and international payments using their mobile phones.

Mobile money services like M-Shwari which is Kenya's most popular digital banking platform also allow users to save money in a locked account and borrow money without having to open any bank account. These kinds of savings can be risky and typically result in returns that range from 0 to a negative value. Mobile money has the potential to completely alter the landscape of savings by reducing the fees associated with transporting money to traditional deposit-taking institutions. Mastercard and OPay, a fintech company, have joined forces in a strategic partnership announced on May 19, 2022. This collaboration aims to extend digital commerce opportunities to millions of individuals in the Middle East and Africa. The partnership intends to create a global payments ecosystem that connects payment providers worldwide and caters to the diverse needs of consumers.

1.1 Statement of the Problem

Policymakers have generally focused on more tangible aspects of financial services and often failed to consider financial inclusion throughout history. Certainly, inclusive finance is critical to fostering sustainable and inclusive economic growth. However, despite its importance, it has not received the attention that should be accorded to it during policy discussions. Consequently,

numerous parts of the globe suffer from severe inequality as a result of financial exclusion among the underserved sections of the global population (Arner et al., 2020). Therefore, reliable statistics on financial inclusion in terms of access to financial services are essential for informing policy choices and tracking progress made through initiatives while also providing a basis for setting ambitious targets.

This includes agency banking, mobile money services and online banking which have seen radical transformation in borrowing processes as well as simplified processes like saving, investing and local or cross-border money transfer. Agency banking alongside cash merchants has brought cash-in-cash-out services very close to customers. However, FinAccess (2021) asserts that Kenya still has limited access to formal financial services. In particular, their poverty levels are so acute due to lack of appropriate financial instruments built into their way of life that would help them escape this predicament (poverty).

FinAccess (2021) report shows that there is increased accessibility to formal financial services and products within Kenya from 26.7% during 2006 up to 83.7% for 2021 which can be attributed largely by surge in FinTechs and innovations such as agency banking, mobile money services and internet based banks. Equally significant has been a decline in reliance on informal providers whose share fell from 32.1% in 2006 to 4.7% in 2021 just as the percentage of those who were completely excluded from any formalized form of finance declined steadily from 41.3 % in 2006 all the way down to its lowest point at around 11% in 2019. Although, small increase was noticed that is equal to 11.6% by the year 2021 (FinAccess, 2022). The financial exclusion rate in Homa Bay County stands at 15 percent while formal access by population is at least at a figure of 81.8% (FinAccess, 2022). Therefore, the financially excluded should be brought into the formal financial system.

For instance, Malady (2016) states that financial technology is the best solution for financially excluding low-income earners from poverty because it helps them manage money better. However, even with significant numbers of registered users still inactive use of fintech has made it impossible to achieve that goal. Even though there is a widespread adoption of fintech, there are still jobless people and individuals with low incomes who remain outside the reach of traditional banks and other financial institutions which would have helped them greatly had they been accessible (Mago & Chitokwindo, 2014). Consequently, this study sought to reveal how agency banking, mobile money services and online banking can help in addressing financial inclusion through opening digital economy's door to small-scale fish farmers in Homa Bay County Kenya.

1.2 Research Objectives

i. To determine the effect of agency banking on financial inclusion of small-scale fish farmers in Homa Bay County, Kenya.
ii. To examine the effect of mobile money services on financial inclusion of small-scale fish farmers in Homa Bay County, Kenya.
iii. To determine the effect of online banking services on financial inclusion of small-scale fish farmers in Homa Bay County, Kenya.
iv. To investigate the moderating effect of government regulations on financial technology services and financial inclusion of small-scale fish farmers in Homa Bay County, Kenya.

1.3 Research Hypotheses

H_{01}: Agency banking has no significant effect on financial inclusion of small-scale fish farmers in Homa Bay County, Kenya.

H_{02}: Mobile money services have no significant effect on financial inclusion of small-scale fish farmers in Homa Bay County, Kenya.

H_{03}: Online banking services have no significant effect on the level of financial inclusion of small-scale fish farmers in Homa Bay County, Kenya.

H_{05}: Government regulations have no moderating effect on financial technology services and financial inclusion of small-scale fish farmers in Homa Bay County, Kenya.

2.1 Theoretical Framework

This study was anchored on Innovation Diffusion Theory. In addition to Innovation Diffusion other supporting theories were used to inform the study variables and discussed below.

2.1.1 Innovation Diffusion Theory

This theory, which was first put forth by Rogers in the field of communication studies in 1962, explains how a new concept or product gradually develops traction and penetrates a particular group or community over time. A new idea, item, or behaviour is eventually adopted by members of the social system as a result of the diffusion process. Adoption implies a departure from previous practices in order to attain a specific goal. Essentially, Innovation Diffusion Theory is concerned with the process that unfolds as people embrace new ideas, products, practices, and philosophies. Innovation Diffusion Theory was critical to the study as it looks at the characteristics of financial technology that lead to its adoption and use in provision of financial services. Incorporating these factors into fintech as financial technology innovations helps us to understand why financial technology has been easily accepted and continue to draw many users across the globe.

2.1.2 Financial Intermediation Theory

According to Diamond and Dybvig (1983), the theory centers on the idea that intermediaries function to decrease transaction costs and informational disparities. Financial intermediation involves a process where entities with surplus funds transfer them to financial institutions, which then lend them to entities with a deficit of funds but possessing investment opportunities where these funds could be utilized. As noted by Molnar and Julia (2018), advancements in technology, along with extensive internet usage, have progressively altered the structure and delivery of various financial services. These modifications have made it easier for new kinds of financial institutions to enter the market, which has led to increased competition. One thing that all of these new competitors have in common is their emphasis on internet-only strategies, as well as their reliance on online and mobile networks to fulfill the transactional requirements of clients.

The relevance of this theory to our study lies in its examination of these innovative actors within the context of financial services, viewed through the prism of financial intermediation literature. The basis of this theory was utilized to dissect the association between financial inclusion and aspects like agency banking, mobile money services, digital banking services, and mobile lending applications. Furthermore, it aids in understanding how such advancements impact the financial inclusion of aquaculture practitioners in Homa Bay County, Kenya.

2.1.3 Technology Acceptance Theory

This is a theory in the field of information systems that explains the process by which people grow to accept and use a technology. The acronym TAT stands for "technology acceptance theory," which is the full name of the theory. Davis, Bagozzi and Warshaw (1989) were the ones who had the notion to explore the degree to which new technologies have been welcomed and accepted. Their research was published in the year 1989. The apparent simplicity and practicality of a new piece of technology served as the inspiration for its overall layout and layout. This theory lays an emphasis on the direct relationship that exists between PEOU of new technology and the PU of that technology.

In order to accurately anticipate how new technology was utilized, the Technology Acceptance Theory has been put to use, and it has been discovered that perceived utility is a highly key predictive factor in this regard. However, According to Lee and Wang (2017), the model has been critiqued for placing an excessive amount of emphasis on the levels of individual consumption rather than the influences of the surrounding environment. This idea functions as an essential principle that is connected to the independent variable in this investigation. This theory elucidates the perceived accessibility and usability of fin-tech. Furthermore, this study examined how these distinctive characteristics facilitate financial inclusion for small-scale fish farmers in Homa Bay County, Kenya.

2.1.4 Public Interest Theory of Regulation

Pigou (1920) is credited with the development of this theory. According to this thesis, governments ought to intervene in the market and impose regulations in order to address what he referred to as "externalities." According to Hantke-Domas (2003), the term "externalities" refers to the unexpected effects of company actions that have an effect on other parties. One example of an externality is pollution. This theory advocates for government measures such as taxes or subsidies to 'internalize' these externalities, so encouraging more socially desirable conduct (Pigou, 1920). It maintains that government regulation is required in order to remedy flaws in the functioning of markets and to guarantee the delivery of products and services that are in the public's best interest. The theory discussed in this study holds relevance as it informs the moderation variable of government regulations and emphasizes the pivotal role of government in establishing a regulatory framework that safeguards consumers' interests and advances the public welfare. In essence, this theory serves as a guide for government intervention to bridge the gap between the technological advancements in the financial sector and the inclusion of marginalized communities such as small-scale fish farmers in Homa Bay County, Kenya.

2.2 Empirical Literature

2.2.1 Agency Banking and Financial Inclusion

Akudugu (2019) examined whether or not there exists any link between agency banking and financial inclusion through a study conducted in Nigeria. It involved quantitative methodology. The findings indicate that agency banking has strong positive effects on financial inclusion the implication here is that increasing access to finance through agent based systems could improve Nigerian economy as well as facilitate poverty reduction efforts (Akudugu 2019). Rotich and Wanjau (2020) employed interviews and questionnaires as methods for data gathering since they were used together for mixed-methods research approach among other sources from whom views were sought about the banking representatives and their clients.

According to Kazeem (2021), agency banking is a way of providing cheap finance services for developing countries, reducing bank queues, and enhancing financial inclusion by reaching the unbanked. According to Kazeem's research, the level of happiness among customers depends on whether the agency banking has been a success or not. The question remains: can a customer be happy if he or she is economically excluded? This calls for more research into how fintech affect financial inclusion.

2.2.2 Mobile Money Services and Financial Inclusion

Yawe, Ddumba-Ssentamu, Nnyanzi, and Mukisa (2022) conducted a descriptive survey study to investigate how mobile money and digital payments can contribute to the achievement of the Sustainable Development Goal of Financial Inclusion in Africa. The authors of the study emphasized that these services assist advance sustainable development since they make it simpler for individuals and businesses to gain access to capital. According to the findings, mobile money might be used for more than just buying a new battery. Seventy percent of households, based on the statistics, utilized mobile money for cash withdrawals, while sixty percent used it for bill payments. This demonstrates how the proliferation of electronic wallet services has widened the public's access to banking options. Researchers concluded that widespread use of mobile money services and digital payment methods could significantly impact Africa's ability to achieve its sustainable development goals and expand access to financial services.

Budiyono and Sukamulja (2023) found a direct correlation between the utilisation of mobile money and the safeguarding of digital customers. This implies that a rise in the adoption of mobile money by the working-age population in Yogyakarta's Special Region will lead to enhanced security for these clients. According to the study's results, it is essential to give priority to the implementation and use of mobile money services in order to accomplish the government's goals of reducing poverty and enhancing the overall welfare of the community. The study highlights the significance of digital customer protection as an intermediary in this process. Moreover, the results emphasise the significance of improving the use of mobile money as a strategy to foster financial inclusivity and tackle difficulties associated with poverty. Through the implementation of synchronised endeavours, these discoveries contribute to the collective well-being of the community.

2.2.3 Online Banking Services and Financial Inclusion

Abdi, Hussein and Kadir (2022) conducted a study that aimed to investigate the impact of electronic banking on the degree of financial inclusion provided by commercial banks operating in Somalia. A census methodology was utilised, and the respondents consisted of administrators and officers from each of the institutions. Using a questionnaire, the researchers were able to obtain primary data in which they especially investigated consumer deposits, mobile banking, and automated teller machines. According to the findings, financial inclusion in commercial banks in Somalia can be significantly predicted by the availability of mobile banking and automated teller machine banking services. Consequently, electronic banking was recognised as an essential component of the commercial banking industry's effort to promote financial inclusion.

The purpose of a study by Melubo and Musau (2020) was to ascertain whether or not women-owned businesses in Narok County, Kenya saw an increase in financial inclusion as a result of using digital banking. A descriptive study approach was used to gather the essential data from each of the 184 women-owned businesses in Narok County, which comprised the research population. Due to the utilization of census sampling, the entire population was taken into consideration. The

primary data was gathered through semi-structured interviews conducted in-person with female entrepreneurs. The research found that women-owned businesses in Narok County benefited greatly from the availability and convenience of online banking services. It was discovered, however, that low levels of literacy, computer literacy, and internet access prevented these businesses from making full use of online banking.

2.2.4 Government regulations, financial technology, and financial inclusion

According to Thennakoon (2020), fintech has its benefits as well as having enormous risks associated with customer protection and data safety. Financial stability can be at risk because of these dangers especially where users do not do anything about them. Therefore, regulators are responsible for balancing between promoting innovation in fintech development and ensuring strong data security and client safety. Anti-money laundering laws demand financial institutions should institute mechanisms for detecting money laundering stated by financial technology companies. These guidelines rely on several basic types of financial technologies such as mobile money services, agency banking, and online banking services.

Frost et al. (2019) discovered that these services reduced transaction costs, improved individual as well as business convenience with better management of finances being achieved through them. Moreover, the fusion of governmental regulations concerning FinTech and financial inclusion necessitates striking a balance between innovation and risk mitigation. For governments, it is necessary to draw up rules that contribute to the development and advancement of Fintech but still protect consumers as well as the financial stability of a nation. For example, one way to achieve this is through regulatory sandboxes that provide for controlled real-life testing of new types of financial services hence encouraging innovation while minimizing risks (Zetzsche et al., 2018).

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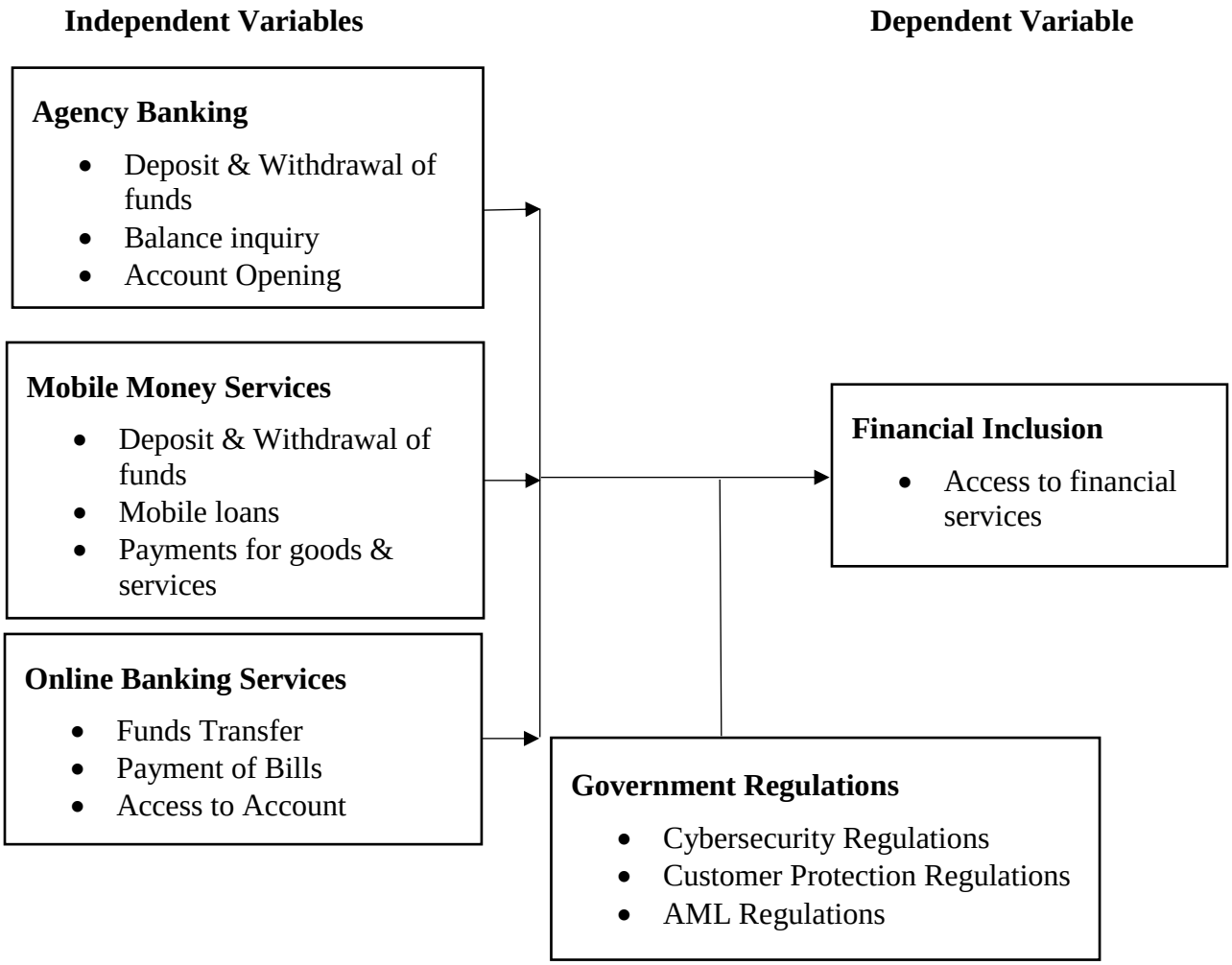
2.3 Conceptual Framework

Figure 2: Conceptual Framework



Source: Researcher (2023)

3.0 Research Methodology

This study adopted the positivist philosophy and employed a causal research design. Pribesh (2018) asserts that this research strategy is the most suitable for proving a causal relationship between causes and their corresponding consequences. As per the Aquaculture Business Development Programme (2021), there were a total of 495 small-scale fish farmers registered in Homa Bay county at the time of conducting this study. Small-scale fish farmers refer to those who employ modern fish farming infrastructure, such as fishponds, and are primarily newcomers to the fish farming industry (ABDP, 2021). The sample population for the research was chosen using a method known as stratified random sampling, which was carried out by the researchers. Stratified random sampling technique was used to choose a number of small-scale fish producers who faithfully reflect the entire.

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$$n = \frac{z^2 . p.q.N}{e^2 (N-1) + z^2 . p.q}$$

For this study, the sample size (N) was determined to be 495. The margin of error (e) was set at 0.03, indicating that the estimate should be within 3% of the true value. A confidence level of 95% was chosen, which corresponds to a z-value of 1.96, as the p-value was not known in advance, we will assume that p=0.05. The sample size was therefore 144 small-scale fish farmers which were appropriated according to the number of registered small-scale fish farmers in each sub-county. The study made use of a questionnaire for purposes of collecting primary data. Questionnaires were given to respondents together with aids used for studying by research assistants who helped them perform this task. The study used both descriptive and inferential approaches to analyze the collected data with the aid of SPSS. Descriptive techniques include percentages, frequencies, mean values and standard deviations. The research employed multiple regression analysis to examine the relationship between financial technology and financial inclusion.

The regression model was presented as:

$Y= \beta_0 + \beta_1 T_1 + \beta_2 T_2 + \beta_3 T_3 + \varepsilon_i$

Where:

Y= Financial Inclusion (FI)

β_0 is constant or FI where the value of T=0

β_1, β_2, β_3 =Regression coefficients

$T_{1=}$ Agency banking

$T_{2=}$ Mobile money services

$T_{3=}$ Online banking services

$\varepsilon_{i=}$ is an error term.

Moderating Variable:

The study employed Haye's model 1 approach as outlined by Abbu (2017) in order to determine whether or not government regulation moderated their findings. Hence, this research relied on it in order to examine if government control acted as a moderator or not.

$Y=\beta_0+\beta_1 X+\beta_2 GR+\beta_3 XGR+\varepsilon_i$

Where:

β_0-The intercept (value of $\sum Y$ when T_1, T_2, T_3 = 0).

β_1 - regression coefficient

β_2 -is the coefficient of simple effect when X is zero and β_3 is the coefficient of the interaction effect between GR and X

GR– Government Regulations.

$$Y=\beta 0+ \beta_1 T_1+ \beta_2 T_2+ \beta_3 T_3+ \varepsilon_i+\beta_4 GR+\beta_5 T_1 *GR+\beta_6 T_2*GR+\beta_7 T_3*GR$$

The above model which includes the moderator used to determine the effect of the moderator on the regression model. An increase in the strength of the base model indicates moderating effect.

4.0 Findings and Discussion

This study targeted 495 registered small-scale fish farmers spread across Homa Bay county, from which a sample size of 144 respondents was obtained. Questionnaires were administered to the 144 sampled respondents out of which 129 were completed and returned. The study achieved an 89.6 percent response rate. Demographic results revealed a significant skew towards male respondents, with 86.80% of the respondents identifying as male and only 13.20% as female. Majority of the respondents fell within the age brackets of below 30 years (31%) and 31-40 years (37.20%), indicating that a significant portion of these fishermen were relatively young, within their early adulthood to middle age. This suggests that the young and middle-aged population form the backbone of this industry. The age group 41-50 years constituted 23.30% of the respondents, showing a substantial representation from this slightly older age bracket as well. In addition, majority of the respondents, 51.90% had achieved form four or below level of education.

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4.1 Descriptive Statistics Results

Agency Banking

Table 1 depicts the respondents' opinions regarding banking agency.

Table 1: Descriptive Statistics on Agency Banking

Statement	SD	D	N	A	SA	Mean	Std. dev.
After discovering agency banking, I can deposit all my daily sales hence am able to avoid keeping large amounts of cash in the business premises.	2.30%	7.00%	13.20%	31.80%	45.70%	4.12	1.04
Agency banking provides flexibility of time due to their extended working hours that enables me to withdraw money without wasting time to travel to the banking halls.	6.20%	10.90%	12.40%	34.90%	35.70%	3.83	1.21
Agency banking enables me to pay NHIF and NSSF returns for my employees.	5.40%	13.20%	18.60%	31.00%	31.80%	3.71	1.2
Agency banking helps businesses to grow, access banking services and is also a source of income for the agents.	1.60%	3.10%	18.60%	34.90%	41.90%	4.12	0.93
I have been able to open a bank account through agency banking	0.80%	10.10%	14.70%	35.70%	38.80%	4.02	1.01
Agency banking enables me to check my account balance from any location where there is an agent.	3.10%	10.90%	18.60%	34.10%	33.30%	3.84	1.1
Overall Mean						**3.94**	

According to the results in Table 1, approximately three quarters (77.5%) of the participants stated that agency banking helped them avoid storing large sums of cash at their business location. The average rating for this facet was 4.12, showing a strong level of agreement, with a SD of 1.04, indicating a reasonably high level of consensus. Regarding the flexibility of agency banking because of extended working hours, 70.6% of respondents agreed. This perk enabled fish producers to access money without the need to spend time traveling to the bank. The average grade was 3.83 with a SD of 1.21, suggesting a significantly reduced level of agreement compared to the initial assessment. 62.8% of respondents agreed that agency banking facilitated the payment of NHIF and NSSF refunds for employees. The mean rating for this statement was 3.71 with a SD of 1.2, indicating a higher level of variability in the replies on this element.

Additionally, 76.8% of the respondents agreed that agency banking contributed to business growth, provided access to banking services, and acted as a source of revenue for the agents when questioned. The average value of this statement was 4.12, with a SD of 0.93, indicating a

significant level of concordance and a robust consensus among the participants. 74.5% of the respondents agreed with the statement on the possibility of opening a bank account through agency banking. The average rating for this statement was 4.02, with a SD of 1.01, indicating a strong level of agreement and a relatively high consensus. Most (67.4%) of respondents agreed that they may check their account balance from any location with an agent. The average rating was 3.84 with a SD of 1.1, suggesting a slightly lower degree of agreement compared to the majority of the other assertions.

Mobile Money Services

Table 2 depicts the respondents' opinions on mobile money services.

Table 2: Descriptive Statistics on Mobile Money Services

Statement	SD	D	N	A	SA	M	SD
I deposit daily sales collections through mobile money hence reducing the risk of cash theft.	3.90%	14.00%	18.60%	31.00%	32.60%	3.74	1.17
I withdraw money directly from the bank through mobile money for office use whenever need arises.	1.60%	20.90%	23.30%	25.60%	28.70%	3.59	1.16
My customers have been making payments directly to the bank through mobile money, so I rarely handle cash from customers.	3.10%	17.80%	26.40%	22.50%	30.20%	3.59	1.18
I have been borrowing money from mobile loan lenders whenever I have urgent business needs.	1.60%	9.30%	14.70%	31.80%	42.60%	4.05	1.04
I have been saving money in M-Shwari to grow my borrowing limit to expand the business.	5.40%	4.70%	17.80%	31.80%	40.30%	3.97	1.12
I use mobile money to pay my employees and suppliers which is faster and cheaper than bank transfers.	3.90%	9.30%	18.60%	31.00%	37.20%	3.88	1.13
Mobile money has generally improved the effectiveness and efficiency of doing business.	0.80%	6.20%	20.90%	31.80%	40.30%	4.05	0.97
Overall Mean						**3.839**	

Table 2 shows that most of the respondents (63.6%) agreed that they make daily deposits of sales collected through mobile money and therefore, reduce the risk with cash theft. This statement had a mean of 3.74, which showed strong agreement and a SD of 1.17 meaning there were some differences in responses. Concerning withdrawing money from the bank using mobile money for office use, majority of them (54.3%) agreed with this practice. The statement had a slightly lower

mean (3.59) but a similar SD (1.16) indicating uniform dispersion around the mean level. Subsequently, about 52.7% of all respondents admitted that their clients were paying their monies directly to banks via mobile money thereby minimizing much handling of cash by customers from them. The average response was 3.59 just like previous statement while its standard deviation was somewhat higher at 1.18.

Furthermore, 74.4% stated that they borrowed money from mobile loan lenders for urgent business needs. This statement recorded highest mean score (4.05) and least SD (1.04) showing less variations among replies given by different respondents compared to other statements made before it. In addition to this, another major finding is that 72.l% said that they save money in M-Shwari so as to increase borrowing limit for business expansion purposes. Meanwhile, the data's average stands at 3.97 while its SD is calculated at 1.l2.Moreover, it was also found out that paying staff and suppliers through mobile money is faster and cheaper than bank transfers according to 68.l% of participants who agreed with these views. The average response to this question was recorded as equaling to about or approximately 3.l88 whereas the SD came out as approximate or around l..

Finally, a high proportion of respondents (72.1%) agreed that the use of mobile money generally improved business effectiveness and efficiency. The mean was quite high at 4.05, while the SD was lowest at 0.97 implying consistency in responses for this statement. In sum, majority of participants endorsed the issues listed on mobile money services towards their business as per the study results. The average overall agreement across all statements is 3.l839 suggesting generally positive perception of mobile money services among small-scale fish farmers in Homa Bay County, Kenya.

Online Banking Services

Table 3 depicts the respondents' opinions on online banking services.

Table 3: Descriptive Statistics on Online Banking Services

Statement	SD	D	N	A	SA	M	SD
I use online banking to transfer funds to the bank and from the bank	3.90%	10.90%	13.20%	31.00%	41.10%	3.95	1.15
I use online banking to pay bills directly from my bank account	1.60%	10.90%	13.20%	42.60%	31.80%	3.92	1.01
I depend on online banking to access my account, check balances, and monitor movements of funds.	1.60%	12.40%	18.60%	33.30%	34.10%	3.86	1.07
Online banking saves time and transaction costs compared to transacting over the counter.	5.40%	7.00%	13.20%	25.60%	48.80%	4.05	1.18
Overall Mean						**3.945**	

The study findings presented in Table 3 show that 72.1% of respondents agreed that they utilize online banking for transferring funds to and from the bank. The statement had a mean of 3.95 and a SD of 1.15, suggesting a significant level of consensus with considerable variation in the answers. 74.4% of respondents agreed to utilizing internet banking to pay bills straight from bank accounts. The statement got a mean of 3.92, indicating a high level of agreement. The SD of 1.01 indicates less variability in the responses compared to the first statement. 67.4% of respondents agreed to

rely on internet banking for accessing accounts, checking balances, and monitoring fund transfers, with an average response of 3.86, indicating slightly less agreement compared to previous statements. The SD of 1.07 indicates a comparable level of dispersion in replies to the initial statement. The data indicated that 74.4% of the respondents felt that online banking is more time and cost-efficient than traditional in-person transactions. The statement achieved the highest mean score of 4.05 and displayed the greatest diversity in responses among the four statements, as seen by a SD of 1.18. The average agreement level for all assertions was 3.945, indicating a favorable attitude towards online banking services among small-scale fish farmers in Homa Bay County, Kenya. The findings suggest that internet banking significantly influences their financial behaviours, providing suggestions on how to utilize these services more effectively to enhance financial inclusion in the community.

Government Regulations

Researching how government restrictions in Homa Bay County, Kenya, impacted small-scale fish farmers' access to financial technology services and inclusion in the financial system was the study's fourth objective. Table 4 depicts the respondents' opinions. The study's fourth objective was to research on how government restrictions in Homa Bay County, Kenya impacted small scale fish farmers' access to financial technology services and their inclusion in the financial system. Table 4 provides respondents' opinions.

Table 4: Descriptive Statistics on Government Regulations

Statement	SD	D	N	A	SA	M	SD
Reduced breach of Anti-Money Laundering regulations has made receiving and making payments more secure.	7.80%	9.30%	24.00%	30.20%	28.70%	3.63	1.21
Enhanced Cybersecurity regulations has reduced loss of money to fraudsters through hacking of mobile money accounts and computer systems and programs.	8.50%	7.80%	29.50%	19.40%	34.90%	3.64	1.27
Increased compliance to consumer protection regulations has reduced exploitation by mobile loan app lenders and debt shamming.	8.50%	13.20%	24.00%	17.10%	37.20%	3.61	1.33
Harsh penalties levied on mobile loan app lenders for breaching data protection regulations have reduced debt shamming.	3.10%	6.20%	18.60%	33.30%	38.80%	3.98	1.05
Overall Mean						**3.715**	

The results presented in Table 4 highlight the perceptions of small-scale fish farmers in Homa Bay County, Kenya, regarding the moderating effects of government regulations on financial technology (fintech) services and their implications for financial inclusion. The findings reveal a general positive sentiment towards the role of regulations in enhancing the security, trustworthiness, and inclusiveness of fintech services. The majority of respondents agreed that

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reduced breaches of Anti-Money Laundering regulations (58.9%, mean = 3.63, SD = 1.21) and enhanced cybersecurity regulations (54.3%, mean = 3.64, SD = 1.27) contribute to more secure transactions and reduced financial losses due to fraudulent activities. Similarly, 54.3% (mean = 3.61, SD = 1.33) agreed that compliance with consumer protection legislation reduces exploitation by mobile loan app lenders and debt shaming. The highest level of agreement (72.1%, mean = 3.98, SD = 1.05) was observed for the statement on harsh penalties for breaching data protection regulations, which respondents believed could curb harmful practices like debt shaming. The overall mean of 3.715 suggests a generally positive view towards government regulations' effect on fintech services, underscoring their critical role in shaping a secure, trustworthy, and inclusive financial environment for small-scale fish farmers.

Financial Inclusion

Table 5 depicts the respondents' opinions on financial inclusion.

Table 5: Descriptive Statistics on Financial Inclusion

Statement	VLE	LE	ME	HE	VHE	M	SD
Financial technology services have enhanced my payment ability	1.60%	10.20%	26.60%	30.50%	31.30%	3.8	1.05
Financial technology services have enhanced my savings ability	7.80%	7.00%	23.40%	28.90%	32.80%	3.72	1.22
Financial technology services have increased my accessibility to credit	4.80%	6.30%	21.40%	27.80%	39.70%	3.91	1.14
I have experienced tremendous growth in my business since I started using financial technology services.	7.00%	7.00%	18.80%	26.60%	40.60%	3.87	1.23
Overall Mean						**3.825**	

The mean of "Financial technology services have enhanced my payment ability" was 3.8 with a standard deviation (SD) of 1.05. This implies that there were many respondents who agreed to this statement, with about 61.8% indicating that fintech services have increased their payment abilities extremely high or very high. Therefore, it can be concluded from the results obtained that fintech has significantly facilitated convenience and easiness in making payments as well as enhancing financial inclusion through improving efficiency and ease in doing business.

"Financial technology services have enhanced my savings ability" had a mean of 3.72 and a SD of 1.22. About 61.7 percent of respondents more or less concurred meaningly on this issue at hand. Therefore, it could be inferred that fintech provides possibilities for fostering saving behavior among small-scale fish farmers who may also wish to have some protection against the future risks associated with financial instability." "Financial technology services have increased my accessibility to credit", recorded a mean score of 3.91 with a SD of 1.14 is what I think about this claim being true or false? In summary, approximately 67.5 percent answered highly or strongly agreed for this item therefore Fintech Services Have Greatly Improved Accessibility to Credit

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which is one of the most important constituents in Financial Inclusion facilitating Business Growth and Risk Mitigation.

Finally, "I have experienced tremendous growth in my business since I started using financial technology services," had a mean score equaling to 3.87 and a standard deviation (SD) around (1.23). This indicates that almost seventy percent of the respondents observed very high levels concerning their business enlargements due to Fintech service provision though the greatest implication is not only bringing about economic development but also poverty reduction through financial inclusion in favorably impacted livelihoods for small holder fish farming families.

4.2 Correlation Analysis Results

Table 6 presents correlation matrix showing the nature and strength of association between independent and dependent variables.

Table 6: Correlation Matrix

		Financial Inclusion	Agency Banking	Mobile Money Service	Online Banking Service	Government Regulations
Financial Inclusion	Pearson Correlation	1.000				
	Sig. (2-tailed)					
Agency Banking	Pearson Correlation	.637**	1.000			
	Sig. (2-tailed)	0.000				
Mobile Money Service	Pearson Correlation	.546**	.524**	1.000		
	Sig. (2-tailed)	0.000	0.000			
Online Banking Service	Pearson Correlation	.608**	.526**	.597**	1.000	
	Sig. (2-tailed)	0.000	0.000	0.000		
Government Regulations	Pearson Correlation	.509**	.440**	.490**	.541**	1.000
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
** Correlation is significant at the 0.01 level (2-tailed).						

As shown in Table 6, there was a significant positive association between financial inclusion and various factors, namely agency banking, mobile money service, online banking service, and government regulations among small-scale fish farmers in Homa Bay County, Kenya. Specifically, there was a strong positive and significant correlation between financial inclusion and agency banking ($r=0.637$, $p<0.01$) at the 1% level of significance. This implies that an improvement in agency banking services has a positive association with financial inclusion among small-scale fish farmers. The findings agree with those of Kandie (2013), which discovered that there was substantial evidence of a significant association between agency banking and financial inclusion.

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Additionally, it was observed that there was a correlation that was both fairly favourable and significant between financial inclusion and mobile money services ($r=0.546$, $p<0.01$) at the 1% level of significance to be considered. This data suggests a positive correlation between increased financial inclusion and the use of mobile money services. Moreover, at the 1% level of significance, there is a strong and statistically significant correlation ($r=0.608$, $p<0.01$) between online banking services and financial inclusion. This finding lends credence to the idea that more financial inclusion is positively correlated with better services provided by online banks. This is in line with the assertions put forth by Yawe, Ddumba-Ssentamu, Nnyanzi, and Mukisa (2022), who argue that the financial inclusion index in several Sub-Saharan African nations could be improved through the use of digital payments and mobile money services, especially in remote and rural areas. Finally, the study found a moderately positive and significant correlation between financial inclusion and government regulations ($r=0.509$, $p<0.01$) at the 1% level of significance.

4.3 Regression Analysis Results

Tables 7, 8, and 9 presents model summary, the ANOVA and the regression coefficients respectively.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.763a	0.581	0.571	0.48903
a. Predictors: (Constant), Online Banking Service, Agency Banking, Mobile Money Service				

Source: Field Data, 2023

Table 7, the corrected R-squared value is 0.571 at the 5% level of significance as table 4.14 shows and the coefficient of determination (R squared) was 0.581. In this study, it was found that among small-scale fish farmers in Homa Bay County, Kenya, agency banking, mobile money service, and online banking service contributed to 58.1% of financial inclusion variance the combination's Rsquare for this is 0.581. This can be inferred from the information that has been gathered here. According to a corrected R squared value of 0.571 the independent factors account for only about 57.1% variances in financial inclusion among small-scale fish producers in Homa Bay County, Kenya after excluding the constant variable from the equation! It is expected that other causes not contained in the present model would explain as much as remaining variation which is equal to 41.9%.

Table 8: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	41.537	3	13.846	57.895	.001[b]
	Residual	29.894	125	0.239		
	Total	71.432	128			
a. Dependent Variable: Financial Inclusion						
b. Predictors: (Constant), Online Banking Service, Agency Banking, Mobile Money Service						

Table 8, the analysis indicated that the model used in the research was quite important in revealing how financial technology services (like agency banking, mobile money, and online banking) influence financial inclusion among small scale fish farmers in Homa Bay County, Kenya. The

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significance of the model is also supported by a p-value of 0.001 which is significantly lower than the threshold level of 0.05 implying that there exists sufficient evidence supporting its importance.

Table 9: Multiple Regression of Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.637	0.257		2.477	0.015
	Agency Banking	0.231	0.071	0.256	3.249	0.001
	Mobile Money Service	0.196	0.082	0.204	2.378	0.019
	Online Banking Service	0.410	0.087	0.405	4.724	0.000
a. Dependent Variable: Financial Inclusion						

The regression model therefore became;

$Y = 0.637 + 0.231X_1 + 0.196X_2 + 0.410X_3$

Where:

Y= Financial Inclusion (Dependent Variable)

X_1= Agency Banking

X_2= Mobile Money Service

X_3= Online Banking Service

The analysis revealed that all three fintech services had a positive and significant impact on financial inclusion. The constant term was 0.637 [0.257], indicating the predicted level of financial inclusion if none of the fintech services were used. Agency banking increased financial inclusion by 0.231 [$\beta = 0.231$, $p = 0.001$] per one unit increase. Mobile money services led to a 0.196 [$\beta = 0.196$, $p < 0.05$] improvement in access to finance for each one unit increase. Internet banking had the most pronounced effect, with each additional unit resulting in a 0.410 [$\beta = 0.410$, $p = 0.000$] increase in financial inclusion. The findings align with previous research highlighting the important role of information and communications technology (ICT) in enhancing financial services and accessibility, as argued by Rashid et al. (2020). The results also confirm McKay and Mazer's (2014) study identifying mobile money as the most successful digital financial service in Kenya, contributing to sustainable economic development through greater financial inclusion.

The study examined small-scale fish farmers in Homa Bay County, Kenya and applied multiple linear regression analysis to assess the assumptions of financial technology services on their access to credit. None of the three null hypotheses that agency banking, mobile money services and online banking had any observable impact on financial inclusion were supported by the findings. On the other hand, alternative hypothesis was accepted as a result implying that agency banking, mobile money services and online banking have greatly contributed towards enhancing financial inclusion in the area. This is evidenced by p-values that are less than 0.05 thus signifying a great influence of these financial technologies in improving financial access for farmers involved in small scale fish farming within that region.

Moderating results demonstrated that agency banking had no significant impact (P-value = 0.955>0.05) after the moderation process. Thus, it follows that government restrictions do not attenuate the association between agency banking and the financial inclusion of Homa Bay

County's small-scale fish suppliers. Additionally, the results show that the mobile money service would not be deemed significant following moderation, as the P-value is 0.239, which is higher than 0.05. Accordingly, it appears that government regulations do not attenuate the association between mobile money services and the electronic and financial inclusion of Homa Bay County's small-scale fish producers.

Finally, the findings indicate that the online banking service was significant after being moderated with government laws, with a P-value of 0.029, which is less than the threshold of 0.05. It may be deduced from this that the relationship between the availability of online banking services and the financial inclusion of small-scale fish farmers in Homa Bay County is moderated by the limitations imposed by the government. On the basis of the findings, the conclusion that can be drawn is that the regulations imposed by the government partially moderate the relationship between financial technology services and the financial inclusion of small-scale fish farmers in Homa Bay County, Kenya.

5.0 Conclusions

This study underscores the critical role that financial technology services, particularly agency banking, play in promoting financial inclusion among small-scale fish farmers in Homa Bay County, Kenya. By enabling access to banking services, fostering safety in transactions, and providing additional income for agents, agency banking is paving the way towards financial empowerment in this community. Moreover, the influence of government regulations in enhancing the trustworthiness and security of these financial technology services cannot be understated. These regulations form an integral part of the ecosystem by protecting users from potential fraud and exploitation, thus bolstering confidence in the use of these services. As such, the outcomes of this research provide valuable insights for policy makers, financial institutions, and other stakeholders interested in promoting financial inclusion, indicating a clear path towards the achievement of this crucial goal.

Furthermore, the study findings reinforce the belief that leveraging mobile money services can be a powerful strategy to foster financial inclusion among marginalized communities. The potential of mobile money services extends beyond individual utility; it can catalyze economic and social development by fostering a financially inclusive environment. As a result, the imperative for policy makers, financial institutions, and stakeholders becomes clear: to continue advocating for, investing in, and refining mobile money services, thereby widening the circle of financial inclusion to even more people in communities like Homa Bay County, Kenya.

The study also reaffirms the potential of digital financial services in bridging the financial inclusion gap in rural and hard-to-reach areas. It provides a clear impetus for policy makers, financial institutions, and development organizations to invest further in the digital transformation of banking services, thereby advancing financial inclusion. This is particularly important in communities such as Homa Bay County, Kenya, where technology can be leveraged to address the systemic challenges of financial access and inclusion, ultimately contributing to their socio-economic development.

6.0 Recommendations

The main conclusion of this study is that policy makers should prioritize the development and enforcement of tight financial regulations to safeguard users of fintech from potential fraud, exploitation and data breaches. Such regulations not only increase safety during transactions but

also encourage trust among the population and therefore enhance their adoption. In addition, policies need to be put in place to support and incentivize expansion for agency banking, mobile money services, and online banking into rural areas that are light on services. Furthermore, according to this study, financial institutions and fintech providers ought to invest in platforms that are user-friendly, safe and dependable which can satisfy the special requirements of small-scale farmers. Consequently, such platforms' convenience as well as flexibility might boost acceptance levels thus ensuring inclusive finance takes place at a reasonable pace. Also, it is necessary for institutions to consider partnering with local communities so as to provide financial literacy training which can increase awareness about agency banking, mobile money services as well as online banking hence encouraging their uptake even more.

REFERENCES

Abbu, H. (2017). Methodology review: Direct, mediating, and moderating analysis using Hayes PROCESS Models. Marketing Edge Research Summit, January

Abdi, A., Hussein, F., & Kadir, H. (2022). Effect of Electronic Banking on Financial Inclusion among Commercial Banks in Somalia. *International Journal of Finance and Accounting*, *7*(2), 43-54. https://doi.org/10.47604/ijfa.1547

Ahmad, A. H., Green, C., & Jiang, F. (2020). Mobile money, financial inclusion and development: A review with reference to African experience. *Journal of Economic Surveys*, *34*(4), 753-792. https://doi.org/10.1111/joes.12372

Akudugu, M. A. (2019). "Agency Banking and Financial Inclusion: Evidence from Nigeria." Journal of Financial Regulation and Compliance.

Arner, D. W., Barberis, J., & Buckley, R. P., (2020). "The Evolution of FinTech: A New Post-Crisis Paradigm." Georgetown Journal of International Law.

Atta-Ankomah, R., & Okyere, C. Y. (2023). Welfare effects of financial inclusion services in Ghana: A comparative analysis of mobile money and other financial services. *Global Social Welfare*, *10*(1), 83-92. https://doi.org/10.1007/s40609-022-00234-x

Budiyono, E. F. C. S., & Sukamulja, S. (2023). Digital Customer Protection: Mediator between Mobile Money Usage and Financial Inclusion. *Media Ekonomi dan Manajemen*, *38*(1), 205-233. https://doi.org/10.56444/mem.v38i1.3374

Dev, S. M. (2006). Financial inclusion: Issues and challenges. Economic and political weekly, 4310-4313.

Ene, E. E., Abba, G. O., & Fatokun, G. F. (2019). The impact of electronic banking on financial inclusion in Nigeria. *American Journal of Industrial and Business Management*, *9*(6), 1409-1422. https://doi.org/10.4236/ajibm.2019.96092

Frost, J., Gambacorta, R., Huang, Y., Shin, H. S., & Zbinden, P. (2019). "BigTech and the changing structure of financial intermediation." Economic Policy. https://doi.org/10.1093/epolic/eiaa003

Hantke-Domas, M. (2003). The public interest theory of regulation: non-existence or misinterpretation?. *European journal of law and economics*, *15*, 165-194. https://doi.org/10.1023/A:1021814416688

Kandie, G. C. (2013). The effect of agency banking on financial inclusion in Kenya (Doctoral dissertation, University of Nairobi).

Kazeem, B. L. (2021). The Effect of Agency Banking Services on Customers' Satisfaction in Nigeria. Journal of Management Sciences, 4(3).

Keli, J. (2018). Effect of mobile technology on financial inclusion in Kitui County, Kenya (Doctoral dissertation, Moi University).

Lee, D. K. C., & TEO, G. S. Z. J. (2015). Emergence of FinTech and the LASIC Principles. Journal of Financial Perspectives, 3(3), 1. https://doi.org/10.2139/ssrn.2668049

Mago, S., & Chitokwindo, S. (2014). The impact of mobile banking on financial inclusion in Zimbabwe: A case for Masvingo Province. Mediterranean Journal of Social Sciences, 5(9), 221. https://doi.org/10.5901/mjss.2014.v5n20p415

Malady, L. (2016). Consumer protection issues for digital financial services in emerging markets. *Banking & Finance Law Review, 31*(2), 389-401. https://doi.org/10.2139/ssrn.3028371

McKay, C., & Mazer, R. (2014). 10 Myths about M-PESA: 2014 Update. Consultative Group to Assist the Poor, 10.

Melubo, K. D., & Musau, S. (2020). Digital banking and financial inclusion of women enterprises in Narok County, Kenya. *International Journal of Current Aspects in Finance, Banking and Accounting*, *2*(1), 28-41. https://doi.org/10.35942/ijcfa.v2i1.104

Merritt, C. (2011). Mobile money transfer services: the next phase in the evolution of person-to-person payments. Journal of Payments Strategy & Systems, 5(2), 143-160.

Meyer, R. L. (2015). Financing agriculture and rural areas in sub-Saharan Africa: Progress, challenges, and the way forward. https://doi.org/10.2139/ssrn.2705948

Molnar, Julia. (2018). What does financial intermediation theory tell us about fintechs?. Vezetéstudomány/Budapest Management Review. 49. https://doi.org/10.14267/VEZTUD.2018.05.04

Muli, A. K. (2020). Digital lending in Kenya; the case for regulation (Doctoral dissertation, Strathmore University).

Pigou, A. C. (1920). The Economics of Welfare. Macmillan and Co.

Pribesh, S. (2018). Causal Research. Research methods for librarians and educators: Practical applications in formal and informal learning environments, 145.

Rotich, G., & Wanjau, K. (2020). The Influence of Agency Banking on Financial Inclusion in Kenya. *Journal of Financial Services Marketing.*

Thennakoon, N. (2020). Financial Consumer Protection is not a Destination, it'sa Journey. *Daily FT Sri Lanka*.

Vogel, D. (2005). *The market for virtue: The potential and limits of corporate social responsibility.* Brookings Institution Press.

Wang, R., Liu, J., & Luo, H. (2021). Fintech development and bank risk taking in China. *The European Journal of Finance, 27*(4-5), 397-418. https://doi.org/10.1080/1351847X.2020.1805782

Wiener, J. B. (2017). The Future of Regulation. University of Pennsylvania Law Review.

Yan, J., Yu, W., & Zhao, J. L. (2015). How signalling and search costs affect information asymmetry in P2P lending: the economics of big data. *Financial Innovation, 1*(1), 19. https://doi.org/10.1186/s40854-015-0018-1

Zetzsche, D. A., Arner, D. W., Buckley, R. P., & Barberis, J. N., (2018). *Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation.* Fordham Journal of Corporate & Financial Law. https://doi.org/10.2139/ssrn.3018534

Zetzsche, D.A., Buckley, R.P., Arner, D.W., & Barberis, J.N., (2020). Regulating FinTech in Asia: Global Contexts, Local Perspectives. *Asian Journal of Law and Society*.