Factors Impeding Mobile Money Expansion in Zambia

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ABSTRACT

The majority of the world population is not covered by the mainstream financial sector. As such, mobile money services are seen as a cost effective and efficient way of increasing financial inclusion. However, there remains some factors that impede the development of mobile money services. Therefore, this study sought to analyse these factors with a view to identifying strategies that can be used to accelerate the development of mobile money services.

Keywords— Barriers, Mobile Money Services, Strategies, Zambia

I. INTRODUCTION

The mobile phone is emerging as a key tool to overcome financial exclusion and bring financial services to the unbanked and under banked populations. According to the GSMA 2013 survey, the number of mobile-money accounts is greater than the number of bank accounts in nine African countries, namely; Cameroon, DRC, Gabon, Kenya, Madagascar, Tanzania, Uganda, Zambia and Zimbabwe. The compelling need to serve the poor, particularly in sub-Saharan Africa has driven a lot of mobile phone financial services innovation. Currently all three mobile network operators (MNOs) in Zambia namely Airtel, Mobile Telephone Network (MTN) and Zambia Telecommunications Company Limited (ZAMTEL) are offering mobile money services. Other non-telecom operators include Kazang, SpeedPay, Zoona and Mukuru.

Non-Financial Institutions were not active participants in the financial sector prior to the revolution of mobile money [1]. However, the sector is contributing to financial inclusion through the mobile money service. "Most consumers were not able to own bank accounts, especially in the rural areas, but this service has come as an alternative to a bank account" [2].

In Zambia, Malawi, and Mozambique, an average of 23% of the population holds a mobile money account, compared to 73% of the population in Kenya [3]. Compared to its regional peers, M-Pesa in Kenya accounts for over 70% of the mobile money platform; Airtel Zambia accounts for less than half of the mobile money platform in Zambia [4]. Despite the investments being made there has been no significant expansion of its mobile money market share [4]. Based on the 2018 IFC Report, only 7% of registered users and 20% of the registered agent outlets were fully active. [5] stated that Airtel Money's liquidity problem leaves consumers with no option than that of paying an additional fee to guarantee them am option of cashing out elsewhere which is more expensive, however if liquidity problems within the mobile money ecosystem were addressed this would be a different case. Research from Consultative Group to Assist the Poor found that for many agents, the cost of liquidity management was the greatest operational cost. Furthermore other researchers did recommend that there was need to investigate the factors that delay the expansion of mobile money services [6].

II. LITERATURE REVIEW

The last two decades have been characterized by a rapid expansion of mobile money services around the world. In the developed world, the development of mobile money services has been aided by rapid technological advancements [7]. East Asia & Pacific had the highest number of mobile money services among all continents in 2019 according to the GSMA Mobile Money Metrics report 2019 edition which explored the number of live mobile money services in the world. In Africa, especially sub-Saharan Africa, the development of mobile money services has been aided by the crusade towards greater financial inclusion. Mobile money services in Africa have been growing rapidly since the turn of the last decade. These services have been central to increasing access to financial services for the majority of people who are not served by the traditional banking system. Since the rolling out of M-PESA in 2007 in Kenya, many other African countries, including Zambia, have embraced mobile money technologies. Although the actual services offered by mobile money providers varies slightly from one country to another, this reveal has shown that the main services offered include money transfers, cash-outs, bill payments, and mobile saving wallets. In countries such as Kenya and Tanzania, the penetration of mobile money services is very high since they were one of the first movers in the mobile money services. For other settings

such as Zimbabwe, the growth of mobile money services has been driven by the country's economic woes which have made access to traditional financial services more problematic.

The development of the mobile money sector has been a center piece of the country's National Financial Inclusion Strategy in Zambia [8]. The country has over 12 million mobile phone subscribers. These are spread between three MNOs: MTN Zambia with 44% of the market share, Airtel with 40% of the market share, and Zamtel with about 16% of the total market share [9].

All of the three MNOs have mobile money service. The two leading MNOs also dominate the mobile money market with Airtel Money which was first piloted in 2011 and MTN Money (MoMo) services rolled out in 2012[9]. Since the launch of Airtel money and MTN Money, other mobile money providers have entered to compete away the mobile money market cake.

There is a large body of literature on the factors that impede the growth of mobile money services. The following factors were identified from various empirical contexts: income [6,10,11], bank account ownership [9,11,13]; age[14,15], education [10,16], sex[10,15], employment status [10,17], ease of use [6,13], perceived risk and trust [18,19] and awareness of services and benefits [17,20]. The review on factors delaying growth of mobile money from other literatures indicated that this subject is broader than what meets the eye. Both the customer and service providers contributed to the delay in growth. The service provider was expected to provide knowledge of product and services to existing, new and potential customers. Without this knowledge usage would not increase. Benefits were also meant to be stipulated for users in order to encourage usage which would contribute to growth. Secondly, the consumer played a pivotal role as well. If consumer had low income they would use less channels to transact as income was limited so they would avoid excess transactional costs and stick to one channel which was usually the bank which was most common. Consumers' employment status also determined the growth of mobile money. Individuals who were unemployed opted to handle cash as they would avoid incurring transactional costs. Economic agents with no bank account were less likely to utilize mobile money services. This was expected; given that there was an increasing number of collaborations between mobile money providers and the traditional banking system. The review also revealed that older people were less likely to utilize mobile money services than the younger compatriots. In addition, the review highlighted that although on average men were more likely to utilize mobile money services, the use of these services differed significantly between the two sexes. For example, females were more likely to utilize mobile money services to send and receive money from relatives and friends, men were more likely to utilize mobile money services for business purposes.

As expected, economic agents who were employed were more likely to utilize mobile money services than those were are not employed. This was partly due to the fact that this economic class had more disposable income with which to engage in mobile money services. Furthermore, people who are more educated were more likely to utilize mobile money services because they were more likely to be informed about the usefulness of mobile money services. Indeed, it was found that lack of awareness of mobile money services was one of the main constraints impeding the growth of mobile money services. The review also found that lack of trust, perceived risks involved in mobile money transactions, and the lack of ease of use of mobile money services were the other constraints that impeded the growth of the global and regional mobile money industry. Therefore, this study went on to seek to understand whether the above constraints were important within the Zambian mobile money industry.

The literature was also rich with strategies that could be used to drive mobile money expansion. A sample of key strategies were analysed. These included float management [21, 22] customer loyalty [21, 23]; a strong social and agent network [21, 22], simplification of the registration process [6, 20, 24]; effective regulation [20], and mobile money fees [20, 23]

Theories that had been advanced to explain the factors that impede the growth of business, including mobile money agents were reviewed. The theoretical framework highlighted three of these theories. These were;

- *The economic theory*: The economic theory stated that the demand and supply of financial innovations were the results of market players trying to overcome limitations such as transaction costs, information asymmetries, and other forms of market frictions in addition to the profit motives of the shareholders. The economic theory was mainly anchored on the demand-supply framework. Based on this framework, a number of demand- and supply-side factors that impeded the expansion of mobile money services could be identified [25]. From the review of empirical evidence number of demand-side factors were identified. These included: gender inequalities, age, employment status, lack of awareness of mobile money services, and lack of trust and perceived risk associated with the use of mobile money services. Supply-side constraints included inadequate float, high transaction costs, complex registration procedures, and ineffective regulation.

- *The theory of firm growth,* this theory was an attempt to assess how firms' growth overtime as well as

identify some of the constraints that might hinder this growth. A number of internal and external constraints that may adversely affect the growth of firms. [25] Among the internal factors, the theory identified firm size, innovative capacity, and managerial resources. External factors that were identified included: regulation of the financial and economic systems, market conditions, culture, legal constraints, and policy constraints such as corruption, excessive bureaucracy and unfavorable tax environments. These factors had a negative effect on a firm's ability to growth. In addition, a firm's ignorance of these factors implied that they would not put in place measures to circumvent these constraints, and hence may lead to a loss of the firm's competitive advantage.

- *The political theory of entrepreneurship.* The theory argued that in order for firms to grow and succeed the government must play an active role. In particular, it must create an enabling business environment for firms to thrive. This enabling environment is contingent on the presence of good political and legal systems. These systems must ensure efficient and effective tax systems, adequate infrastructure, streamlined business registration and regulation procedure, corruption-free systems and flexible import and export procedures. The absence of the systems is associated with the slow growth of business firms.

III.   METHODOLOGY

The study adopted a mixed methods approach, which utilized both qualitative and quantitative research approaches. The study randomly sampled 100 mobile money agents and conveniently sampled six mobile money service managers. The agents were administered a specially designed questionnaire and an interview for the manaes. The data collection tools mainly captured quantitative data. The tool for the latter group also included open-ended questions to capture qualitative data.

Both probability and non-probability sampling techniques were used. For managers convenience sampling-managers was used as it allowed members of the population to be chosen based on how accessible they were. Secondly, this strategy was particularly instrumental given the potential busy work schedules of managers Simple random sampling was used for agents in order to give all agents a known chance of being included in the sample, numbers were picked from a plastic which were used to identify booths to be used.

The study area used was Lusaka. This selection was based on the following statistics provided by mobile money agent location in the IFC Report; 63% of mobile money agents were in Lusaka with breakdown as follows;

36% agent locations were in urban areas in Lusaka, 27% were in non-urban areas and 37% in rural areas [26].

The sample size for agents used was derived from the sample size formulae by Yamane. Six managers were chosen based on Territorial sales managers, sales and distribution managers who had firsthand information-supported by Creswell as well.

IV.   RESULTS AND DISCUSSION

The results were presented in two different subsets-one showing results from agents and the second part for managers. The study had two subsamples: one for mobile money agents and another for managers. With respect to the former, the actual sample size was 100 and represented a response rate of 100%.

Background characteristics of agents

Demographics	Frequency and valid percentage
Gender	
Male	46 (46%)
Female	54 (24%)
Age	
Younger than 18 years	3(3%)
18-35 years	78(78%)
Older than 35 years	19(19%)
Highest Educational Qualification	
None	1(1%)
Primary	17 (17%)
Secondary	64 (64%)
Tertiary	18 (18%)
Income level	
Below K1000	12 (12%)
K1000-K2000	44 (44%)
Above K2000	44 (44%)
Bank Account Ownership	
Yes	56 (56%)
No	44 (44%)
How often do you personally use mobile money	
Daily	0
Weekly	27 (27%)
Monthly	48 (48%)
Rarely	25 (25%)

Of these agents, 46% were male while 54% were female. With respect to age, the majority of the mobile money agents were aged 18-35 years. In addition, 19% were older than 35 years while only 3% were younger than 18 years. In terms of their highest level of education, almost a third of them had secondary education, 18% had tertiary education, and 17% had primary education while only one person representing 1% of the sample had received no formal education. An equal percentage of respondents, 44% had a monthly income of either between K1, 000-K2, 000 or above K2, 000. The rest of the respondents, 12%, had an income of less than K1, 000. The majority of the sampled agents 56% owned a bank

account. In terms of their personal, non-business use of mobile money services, 27% utilized these services weekly, 48% utilized them monthly while 25% never utilized them.

The analysis also sought to highlight the level of knowledge of mobile money services. A number of dimensions of knowledgeability were assessed which included advertising, cost and awareness.

Agents Knowledge on mobile money services
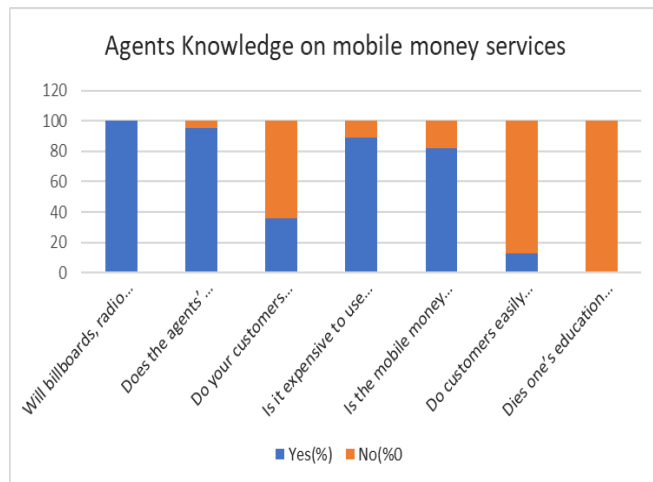
| Demographics	Yes(%)	No(%0
Will billboards, radio and TV adverts help with increasing knowledge of mobile money?	100	0
Does the agents' location contribute to fraud risks or theft when using the service?	95	5
Do your customers know the benefits of using mobile money?	36	64
Is it expensive to use mobile money	89	11
Is the mobile money platform secure?	82	18
Do customers easily give up when trying to register them for mobile money?	13	87
Dies one's education qualification matter when using mobile money	0	100

All agents agreed that billboards, radio and television (TV) increased the knowledge of mobile money services. The response was unanimous – all respondents were of the view that the three media increased knowledge of mobile money services. Agents' location contributed to fraud risks or thefts when using mobile money services. The majority of the respondents (95%, N = 95) agreed that location was directly related to fraud or theft risks. The majority of the respondents (64%, N=64) responded that customers did not know the benefits of using mobile money. About 89% (N=89) of the respondents were of the view that using mobile money services was expensive.

However, 82% (N=82) of the respondents opined that mobile money platforms were secure. In addition, just over a tenth (13%, N=13) of the respondents were of the view that customers easily give up when using mobile money services. Lastly, all the respondents were of the view that the level of education was not an important factor in the usage of mobile money services.
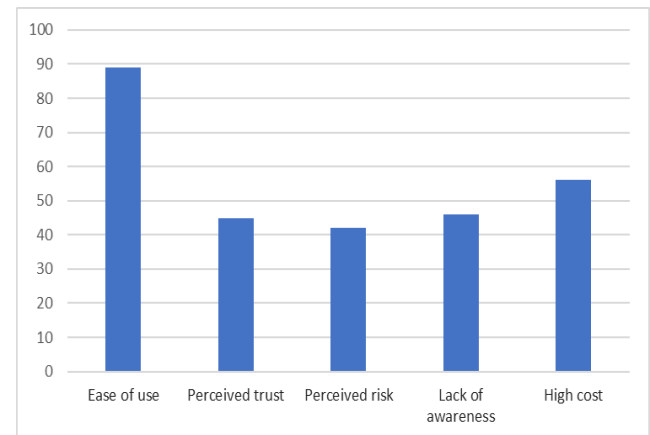
The most cited challenge was the lack of ease of use of mobile money services. In particular, 89% (N = 89) agreed that the lack of ease of use of mobile money services was the most important factor that impeded the growth of mobile money services. The second most cited barrier was the high cost of using mobile money services; cited by 56% (N=56) of the mobile money agents. Other barriers, none of which were cited in the majority were: perceived distrust, perceived risks, and the lack of knowledge or awareness of mobile money services.

Agents' views on factors impeding mobile money expansion were analysed. The five-point likert scale was used to assess the following: the affordability of mobile money services, awareness or knowledge of mobile money Perceived trust or lack thereof of mobile money services is another possible challenge; lack of ease of use of mobile money services, perceived risks involved is another potential barrier to the development of mobile money services. The five point likert scale is considered an interval scale with a very significant mean. 1 to 1.8 means strongly disagree, 1.81 to 2.60 means disagree, 2.61 to 3.40 means neutral-neither agree or disagree, 3.41 to 4.20 means agree and 4.21 to 5 means strongly agree.

Descriptive statistics-agents
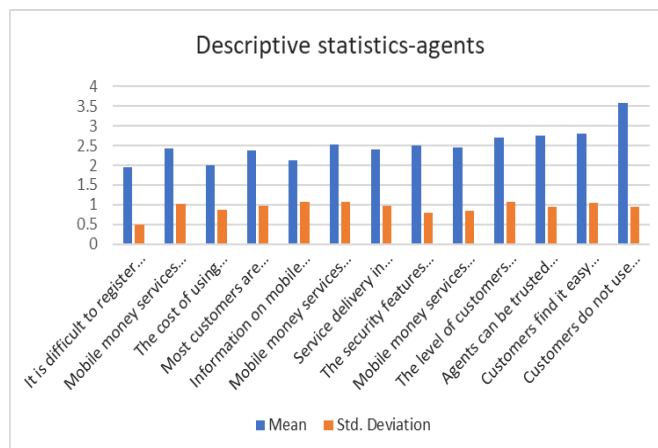
	Mean	Std. Deviation
It is difficult to register for mobile money services	1.96	0.491
Mobile money services are for people who do not have bank accounts	2.43	1.009
The cost of using mobile money services is affordable	2.01	0.859
Most customers are aware about mobile money services	2.38	0.972
Information on mobile money is readily available	2.13	1.06
Mobile money services provide one of the most reliable, efficient and effective systems	2.52	1.059
Service delivery in mobile money services is efficient and reliable	2.4	0.964
The security features of using mobile money services are trustworthy	2.51	0.785
Mobile money services locations are safe	2.46	0.858
The level of customers income contributes to the usage of mobile money	2.7	1.068
Agents can be trusted to guide users on how to use mobile money	2.75	0.947
Customers find it easy to use mobile money services	2.79	1.057
Customers do not use mobile money when they don't know about it	3.57	0.935
Knowledge of mobile money makes it easy to use	3.65	1.019
Knowledge of mobile money helps with avoiding risks	3.61	0.803

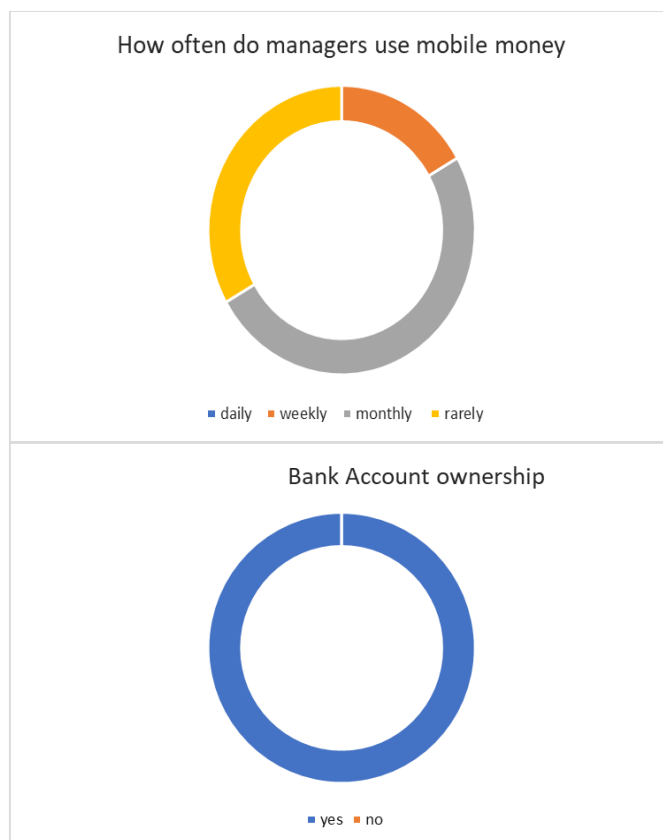The study assessed the affordability of mobile money services. The mean and standard deviation on the five-point Likert scale were 2.01 and 0.86, respectively. This implied that the mobile money agents largely disagreed with the statement. This finding is in line with an earlier finding that the high cost of mobile money services is a key barrier to the utilization of mobile money services. Lack of awareness or knowledge of mobile money services was identified as another factor that impedes the growth of mobile money services; although not in the majority. Mobile money agents were asked to give their view on the extent to which they thought "most customers are aware about mobile money services and its capabilities", the mobile money agents disagreed with the assertion and further noted that mobile money services would not be utilized if they were not aware of it. This is in line with an earlier view that awareness or knowledge of mobile money services was not an important barrier. The mean score on the Likert scale was 2.38 while standard deviation was 0.97. This further validates the fact that the majority of the respondents did not agree with the statement.

Perceived trust or lack thereof of mobile money services is another possible challenge; although not reported by the majority of respondents in this study. In the study the agents disagreed that "mobile money services provided one of the most reliable, efficient and effective systems for financial transactions". In addition, they disagreed to the assertion that "service delivery in the use of mobile money services is efficient, effective and reliable". This is validated by a mean Likert scale score of 2.52 and a standard deviation of 1.06. These findings were in line with an earlier finding that perceived distrust was not an important barrier to the expansion of mobile money services.

The study found that the lack of ease of use of mobile money services is a key factor that impedes the growth of mobile money services. The study found that a meagre 2% (N=2) of respondents agreed or strongly agreed with the assertion that it was difficult to register for mobile money services (Table 7). As expected, only 29% of the respondents either agreed or strongly agreed with the assertion that "customers find it easy to use mobile money services". This again highlights the fact that lack of ease of use of mobile money services was a key barrier to the utilization and subsequent growth of mobile money services. This was largely due to the lack of knowledge of mobile money services which delays the uptake of these services. Indeed, more than two-thirds (70%, N=70) of respondents agreed or strongly agreed with the assertion that increased knowledge of mobile money services would increase the ease of use of these services. However, when summarized using the Likert scale mean and standard deviation, the conclusion was that the majority of the mobile money agents were neutral to the statement (mean = 2.79, standard deviation = 1.06).

The perceived risks involved is another potential barrier to the development of mobile money services. Indeed, only 13% (N=13) of the respondents agreed or strongly agreed that the security features for mobile money platforms are trustworthy (Table 8). Indeed, more than two-thirds (70%, N=70) at least agreed that knowledge of mobile money services helps in reducing perceived risks. In addition, these perceived risks were exacerbated by the fact that only 14% (N=14) of the respondents agreed or strongly agreed that "mobile money services locations are safe". The Likert scale mean and standard deviation of 2.46 and 0.86, respectively, also validates this finding.

The second subsample consisted of six mobile money managers; five (83%) of which were male while only one (17%, N=1) was female. Two-thirds (67%, N=4) of the sampled managers were aged 35 years and older while a third (33%, N=2) were aged 18-35 years. None of them were younger than 18 years. All the respondents had tertiary education. In term of monthly income, two-thirds (67%, N=4) earned between K10, 000 and K30, 000 while an extra third earned above K30, 000. All of them owned a bank account. In terms of personal mobile money utilization, 17% (N=1) utilized mobile money services weekly, half of them (50%, N=3) monthly and about a third (33%, N=2) rarely utilized these services.

How often do managers use mobile money

■ daily ■ weekly ■ monthly ■ rarely

Bank Account ownership

■ yes ■ no

A Likert scale was also used to assess the strategies that can be used to drive mobile money expansion. The strategies were identified from the managers' subsample.

Having identified the factors that impede the development of mobile money services, the analysis focused on identifying the strategies that drive mobile money expansion. These strategies were identified using data collection instruments developed for the six (6) sampled mobile money managers. The majority of the respondents agreed or strongly agreed that providing adequate float/liquidity (mean = 5.00; standard deviation = 0.00), effective regulations (mean = 5.00; standard deviation = 0.00), increasing trade place accessibility (mean = 4.50; standard deviation = 0.55), and minimizing mobile money system outages (mean = 4.83; standard deviation = 0.41) were the main strategies that can be used to accelerate the development of mobile money services: However, simplifying the registration process and developing strong agent networks were not important strategies that can be used to drive mobile money expansion.

	Mean	Std.Dev
Adequate float/liquidity	5	0
Effective regulations	5	0
Place/accesibility	4.5	0.548
System uptime/downtime	4.83	0.408
Customer loyalty	4.17	0.408
Price/lower mobile money fees	4	1.095
Strong social agent networks	3	0.632
Simpler registration process	2.83	0.753

Factors that drive mobile money expansion

■ Mean ■ Std.Dev
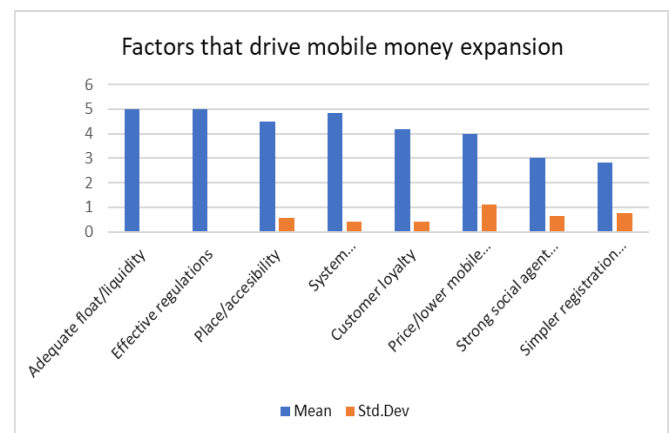
The analysis also delved into looking into examining managers' views barriers to mobile money utilisation. The analysis began by explicitly looking at the reasons for delay in the expansion of mobile money services (from the viewpoint of mobile money agents). The managers were each asked to rank the five challenges

according the most important (rank 1) to the least important (rank 5). The figure below summarises the percentage of respondents who ranked each of the five constraints as the two most important constraints. It is clear that lack of knowledge or awareness of mobile money services was the most important; followed by high cost of services then perceived trust . None of the managers regarded the ease of use of mobile money services as a significant barrier to the growth of the mobile money sector as they believed it was attributed to lack of knowledge and awareness.
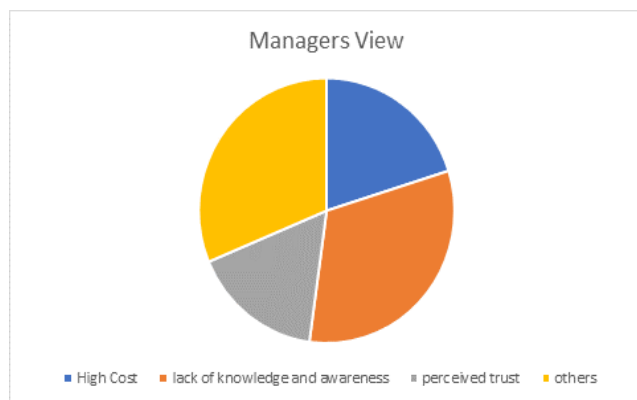
In addition to the closed-ended questions that were included in the managers' questionnaire also included open-ended questions which were used to identify aditional strategies that can be used to prop up the development of mobile money services. The responses were identified using thematic analysis. These strategies are summarised below.

The study found that increasing awareness and knowledge of mobile money services is one way to increase the uptake of mobile money services. Awareness could be increased through various ways like advertising and inclusion of telecommunications and mobile money in the education curriculum as banking and ecommerce were included. Adverts would be in the form of billboards, flyers, door to door, television advertising, outdoor media and other forms to ensure all classes of people are covered. In schools-pupils learnt about banking under money but mobile money service is not part of any syllabus. It was important that this was included in pupils syllabus so they are aware of transacting through mobile money from inception.

The study also found that encouraging mobile money services among bank account holders would increase the growth of mobile money services. This strategy was informed by the observation that the uptake of mobile money services is higher among users without bank accounts; who are not covered by the formal financial system. People who had bank accounts did not think it was necessary to use mobile money as the accounts did

everything.Individuals in formal employment also preferred to only get paid using their bank account yet this could be done using mobile money. The telecommunication company had started splitting salaries by sending part of it to the bank and the other part to the staffs mobile account and this was highly appreciated by staff. Given the perceived lack of trust of mobile money services, there is need to build trust between mobile money service providers and users. It was difficult for consumers to trust agents as they had no consistent reporting time and were not available on a daily basis. When agent was sick it would mean the booth would be closed which contributed to lack of trust as there was no continuity in the business. There was need for aggregators and mobile money service providers to include this in contracts to ensure continuity and strict opening time as other agents based in brick and motar agencies. The study also found that mitigating against operational and fraud risks was likely to increase the adoption and growth of mobile money services.

V. CONCLUSION AND RECOMMENDATION

The majority of the global population is not covered by the formal financial system, dominated by commercial banks, micro financial institutions and other deposit-taking institutions. In many countries, especially in the developing world, mobile money services are seen as a cost effective and efficient way of increasing financial inclusion. However, the literature shows that there are still a number of barriers that impede the development of mobile money services. These include: low incomes, low educational levels, gender disparities, and the lack of ease of use and knowledge of mobile money services.

In order to increase the uptake and growth the mobile money sector, there is need to make it easy for mobile money agents to meet their daily liquidity needs, train mobile money agents in good customer relations, reduce the red-take regarding the registration of mobile money service providers and users, and reduce mobile money transaction fees.

Based on the key findings of the study, a number of policy recommendations can be made. If adopted, these recommendations can accelerate the growth of the mobile money sector in Zambia. These are highlighted below:

- There is need to make it easy for mobile money agents to acquire float to meet day-to-day transactions. This can be done by increasing the number of super agents (who trade float). There is also need to increase the platforms that can be used for agents to acquire float or liquidity.
- There is need to constantly train mobile money agents in customer relations. Good customer relations are critical to promoting customer

loyalty, and hence the long-term sustainability and growth of the mobile money sector.

- There is need to remove some red-tape relating to the registration of mobile money service providers and users. For example, improving coordination between business registration authorities will lead to the minimization of time wastage due to the duplication of efforts. This will lead to effective regulation.
- There is need to revise mobile money transaction fee schedules to increase the utilization of mobile money services. While this may sound counterintuitive, reducing transaction fees my lead to a more than proportional increase in transaction volumes; leading to an increase in mobile money revenues.

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