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THE EFFECT OF INFORMAL MONEY SAVING SCHEME (CHILIMBA) ON MEMBERS' BUSINESS GROWTH: THE CASE OF TUNTEMBA SHOP TRADERS IN LUSAKA, ZAMBIA

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Abstract: Informal money-saving schemes, commonly known as "Chilimba" in Zambia, are community-based financial practices where members pool savings to achieve financial goals. Operating outside formal financial institutions, these schemes are vital for small-scale traders who struggle to access formal credit. Despite their popularity, limited research has been done on their impact on business performance indicators like revenue, sales growth, and profitability. This study assessed whether Chilimba participation contributed to business growth in urban markets. A mixed-method approach was used to collect data from 104 business owners in Lusaka's CBD, Matero, and Garden Chilulu through structured questionnaires and in-depth interviews. Data analysis involved regression and correlation analysis using EViews software. Findings showed that participation in Chilimba had a significant positive effect on business growth, with traders reporting increased revenue, higher profit margins, and improved sales turnover. There was a strong cointegration between Chilimba contributions and financial performance, helping traders expand businesses, manage cash flow, and invest in stock. Women made up 68% of participants, mostly aged 36–45, showing Chilimba's role in financial inclusion for women entrepreneurs. However, risks included high default rates, lack of documentation, and vulnerability to inflation and economic instability. Despite these risks, Chilimba remained a reliable alternative for securing capital, supporting household needs, and building social networks. The study stressed the need for financial literacy, record-keeping, and policy frameworks to strengthen informal schemes. Chilimba is a financial enabler, promoting economic resilience, inclusion, and community empowerment.

Keywords: Chilimba, Cointegration, Business Growth, Informal Money-Savings Scheme, tuNtemba

1.0 INTRODUCTION

Access to finance remains a major barrier for small-scale entrepreneurs in developing economies, especially in Zambia, where many microbusinesses operate outside the formal banking system. Among these are tuNtemba shop traders, who often rely on informal financing mechanisms such as Chilimba—a community-based savings scheme where members pool resources and access funds on a rotational basis. According to Finscope (2021), such schemes serve as financial alternatives for those excluded from formal banking, offering a pathway for capital accumulation and investment. Despite their widespread use, there is limited empirical evidence on whether participation in Chilimba leads to business growth, revenue expansion, and profitability, or if it merely functions as a short-term coping mechanism. Research from other African countries offers insights into similar informal schemes. For instance, Napier (2009) highlights Stokvels in South Africa used for group purchasing and community entertainment, while Chamas in Kenya function as investment vehicles. These models promote financial discipline, strong social networks, and credit access (Irving, 2005). However, Khumalo (2011) cautions that such schemes lack regulatory oversight, formal documentation, and safeguards against risks like member default and inflation, raising concerns about their sustainability.

Finscope (2021) defines informal savings groups as social organizations that help members save for individual or community-level purposes. Two primary types are Rotating Savings and Credit Associations (ROSCAs) and Accumulated Savings and Credit Associations (ASCAs). ROSCAs involve members making regular deposits, which are distributed to one member per cycle on a rotational basis, while ASCAs accumulate funds for loans repaid with interest, and eventually disbursed back to members.Across Africa, such groups are known by various names—Makgotlas in South Africa for funeral expenses, Stokvels for social events, and Chamas in Kenya for business and stock investments (Napier, 2009). Despite variations, most groups have a similar structure: 15–20 members, monthly contributions, and strict governance rules—either written or oral. Rule violations are socially and financially penalized.

As of 2009, around 37 million people in East Africa and 41 million in Nigeria were participating in such groups (FinMark Trust, cited in Napier, 2009). These groups offer both economic benefits (access to capital, savings discipline) and social benefits (trust, solidarity). Interestingly, while Zambia has a less developed formal banking sector compared to South Africa, where 63% had bank access as of 2011 (Khumalo, 2011), nearly 90% of Zambians in informal savings groups also maintain formal savings accounts (Irving, 2005), preferring ISGs for their social structure and flexibility.In Zambia, informal schemes like Chilimba help bridge the gap in financial access for small traders. Yet, little research has explored whether Chilimba actually contributes to business expansion, especially among tuNtemba owners in urban areas like Lusaka's CBD, Matero, and Garden Chilulu. Some traders still report financial instability, prompting questions about the effectiveness of Chilimba in driving long-term growth (Finscope, 2021).This study therefore aimed to investigate the extent to which Chilimba impacts key business indicators—revenue, profits, and sales. By addressing this research gap, the study contributes to discussions on informal finance and financial inclusion in sub-Saharan Africa, offering guidance for policymakers, financial institutions, and development organizations.

1.1 BACKGROUND OF STUDY

Micro Small and medium enterprises around the world need money to support their operations. Due to the absence of assistance from the established financial system, many of them generate modest returns. Micro and small businesses in developing nations are in desperate need of funding for new ventures and ongoing operations. It's critical to investigate alternative financial channels since their inability to receive assistance from the conventional banking system or the government compels them to investigate other financial support mechanisms (Mago & Modiba, 2022).

Micro small and medium enterprises (tuNtemba) play an important role in the economy of every country in the world, helping to foster economic growth and development, reduce poverty, improve livelihoods, and create jobs (Benedict et al., 2021; Hacini et al., 2022; Mutsonziwa & Fanta, 2021). Micro and small enterprises are important economic players in both emerging and established nations (Benedict et al., 2021; Kasseeah et al., 2013; Kasseeah & Thoplan, 2012). Depending on the prevalent settings, these could be formal or casual. Although the issue over financial support for small and micro firms is old, it

still captures the interest of financiers, legislators, development practitioners, and microfinance specialists.

Informal financial services are intended to enhance livelihoods, promote financial inclusion, and develop communities. Outside of the nation's official financial sector, people agree to engage in a variety of financial products, services, and transactions that are referred to as "informal finance." They are frequently customary, carried out in community settings, and frequently governed by unwritten standards, laws, and customs (Mwaba, 2021).

Financial instruments are acknowledged legal records with monetary worth. Bonds, stocks, debentures, shares, and cheques are some examples. Informal financial instruments are contracts created to trade money without considering the rules of law. Those who lack access to or cannot afford official systematic savings credit facilities, such as Ntemba dealers, use these most frequently. Check cashing businesses, loans from friends, savings groups, pawn shops, and money lenders are a few examples of informal financial instruments. Advantages include low interest rates, immediate accessibility, approval of loans based on character and sequential access to facilities (Merchant, 2017).

Chilimba, Kaloba, Village banks, and other Savings Groups are the most prevalent forms of informal financial institutions in Zambia. These organisations are distinct from one another in terms of how they were created and run. Most small-scale traders such as those in communities managing small shops known as Ntemba's have adopted informal money saving schemes because of their inability to access funds from formal financial institutions. A large portion of Zambian society has adopted self-reliant coping mechanisms in the informal sector because of the decline in job opportunities in the formal sector. This phenomenon first began to emerge in the middle of the 1980s and was followed by a period of intense economic restructuring in the 1990s. The subject of small-scale enterprise, often known as Tuntemba or SIDO operations, in Zambia's informal sector is discussed in this context.

A review of this existing data revealed that informal savings mechanisms remain relevant even as access to formal financial services increases. People choose to remain active ISM members, or join a group, even when they have a bank account or a mobile money wallet. ISM members pick and choose among products and services to find the ones that best suit their needs, and ISMs meet many of their needs. The use of ISMs increased from 7 percent to 24 percent in five years (2011 to 2017). However, it is important to note the remarkable degree to which Zambians have access to more and better financial services in general, and mix and match them to suit their needs; during the same period there was a nine-fold increase in people who make use of both formal and informal savings services (2 percent to 20 percent from 2011 to 2017)

1.2 STATEMENT OF THE PROBLEM

Financial exclusion had remained a significant challenge in many developing nations, including Zambia, where a substantial portion of the population lacked access to formal financial services (Finscope, 2020). In response to these challenges, informal money-saving schemes such as Chilimba had emerged as a viable alternative for small-scale traders seeking financial support to sustain and expand their businesses (Mwaba, 2021). These schemes had gained popularity among tuNtemba shop owners in Lusaka's Central Business District, offering members a structured method of saving and accessing lump sums of money on a rotational basis.

Despite the widespread reliance on Chilimba, the extent to which it contributed to business growth in terms of sales, revenue, and profits had remained largely underexplored (Van Scheers, 2010; Chiliya & Roberts-Lombard, 2012; Hartnack & Liedeman, 2017). While some studies suggested that informal savings groups fostered financial discipline and capital accumulation, others questioned their long-term effectiveness, arguing that the lack of formal structures and regulatory oversight might hinder sustainable business expansion (Khumalo, 2011). Additionally, research in other African contexts had demonstrated that while informal savings schemes provided temporary financial relief, they did not always translate into measurable business growth (Napier, 2009).

In Zambia, there had been limited empirical research assessing whether Chilimba enabled small traders to expand their businesses beyond subsistence levels. Many tuNtemba shop owners continued to face financial instability despite actively participating in informal savings groups. This raised concerns about whether Chilimba merely addressed short-term liquidity challenges or had a significant and lasting impact on business sustainability. Without sufficient empirical evidence, it remained unclear whether informal savings mechanisms were an effective alternative to formal financial services or if they perpetuated a cycle of financial vulnerability.

This study, therefore, sought to examine the impact of Chilimba on the business growth of tuNtemba shop traders in Lusaka, Zambia. By analyzing key financial indicators such as sales volume, revenue generation, and profit margins, the research aimed to provide empirical insights into the role of informal money-saving schemes in fostering small business development. The findings were expected to inform policymakers, financial institutions, and development organizations on how to leverage informal financial systems to enhance entrepreneurial success and financial inclusion in Zambia.

1.3 RESEARCH QUESTIONS

Based on the aim of the study, the following are the research questions:

i. What is the effect of informal money saving scheme (Chilimba) on its member's business growth as measured by Revenue?

ii. What is the effect of informal money saving scheme (chilimba) on its member's business growth as measured by Profits?

iii. What is the effect of informal money saving scheme (chilimba) on its member's business growth as measured by Sales?

2.0 LITERATURE REVIEW

2.1 Literature on Informal Traders (Tuntemba) in Zambia

The term tuntemba came into use in the early 1990s when traders and aspiring vendors left the designated markets in the city and the townships, descending on the city center and setting up stands they put together from wood, plastic sheeting, and cardboard. These makeshift structures became known as tuntembas, which in the Bemba language translates approximately into "area of operation." The term graphically captured what in fact the traders were doing: staking claims in space for their own activities (Hansen, 2010).

Not only do these exist in Zambia, but they also do so in South Africa, where they are known as Spaza stores. Additionally, they perform a fundamental socioeconomic role in the development of employment, assisting with informal savings available to their customers, and fostering financial efforts in places where they already operate (Ballantine, Rousseau & Venter, 2008; Friedland, Merz & Van Rensburg, 2008; Roos, Ruthven, Lombard & McLachlan, 2013). If the Spaza Shops are successful, they also provide financial advantageous assistance to the owners, their personal families, their extended families, and frequently several different people in the larger area (Liedeman et al., 2013).

Sadly, it is discovered that Ntemba Shops ended up being less aggressive and had a high failure rate (Hartnack & Liedeman, 2017; Ligthelm, 2012). The owners' unwillingness to leverage their social networks and to create competitive partnerships is stated as one of the main factors contributing to the low profitability, along with high input costs, labour, and goods (Liedeman et al., 2013).

Particularly for the individual owner, South African microenterprises in 2010 represented approximately 8 million employment opportunities, and they have been invaluable sources of economic growth, the creation of jobs, and poverty alleviation (Ligthelm, 2008; Mthimkhulu & Aziakpono, 2015). Like spaza stores, which are a subgroup of microenterprises, the economy depends heavily on them. In 2000, spaza shops accounted for R7.4 billion, or 2.7 percent, of South Africa's retail commerce (Ligthelm, 2005).

Unfortunately, the variety of spaza stores in South Africa is dwindling, making it vital to develop ways for these retail establishments to improve their business processes and keep producing money. The main

issue, as various studies have demonstrated, is that many microenterprises are survivalist in nature and no longer generate enough income to continue to be sustainable over the long term (Ligthelm, 2004; Strydom, Martins, Potgieter, & Geel, 2002). A lot of spaza retail businesses fail, usually within a short time. According to research, between 65 and 75 percent of South African SMMEs no longer succeed as viable businesses (Fatoki & Odeyemi, 2010; Grundling & Kaseke, 2010).

The failure of the spaza businesses can be explained by several factors. Low business management literacy, restricted access to capital and markets, a lack of entrepreneurial abilities, as well as personal beliefs and associational dimensions, are all believed to have a significant role (Abor & Quartey, 2010; Asah, Fatoki & Rungani, 2015; Mthimkhulu & Aziakpono, 2015; Williams, 2014). It has been found in quite a few studies that many spaza store owners lack the necessary business or entrepreneurial skills to be assertive (Cant & Wiid, 2013; Ligthelm, 2012; Woodward, Rolfe, Ligthelm & Guimaraes, 2011).

The 1991 change of regime from a one-party command economy to a multi-party democracy had not helped formal employment to expand but rather fuelled the growth of informalization. In fact, the removal of controls on foreign exchange, imports, and prices attracted more people to trade than ever before. And vending became particularly visible and dynamic on the streets (Hansen, 2010).

Microbusinesses, which are often little convenience stores known as "Ntemba shops" domestically, play a significant role in the economic system of low-income communities in Zambia. The main business focus of many Tuntemba traders is groceries, vegetables and service provision such as hair salons and barbershops. Small cash receipts daily are typically all that small-scale businesses in Zambia need to stay afloat. According to a survey of small firms in Lusaka, many of them have between 2 and 5 employees, and they must cover their ongoing operational expenses in addition to making payroll every month (Mukosa et al, 2020).

International experience has demonstrated that SME are increasingly important drivers of economic expansion. According to estimates, MSMEs in India make up over 90% of all industrial units and contribute 70% of the country's GDP. For every 1000 residents in Kyrgyzstan in Central Asia, there are 36 MSMEs that contribute 44% of the country's GDP. A 1996 Baseline Survey on Micro and Small Enterprises in Zambia found that the sector accounts for roughly 97 percent of all businesses in the nation and employs 18% of the labour force, of which 47% are women (Parker, 1996).

The Zambian government recognized the value of the SME sector and its contribution to economic growth as early as 1981. The Small Industries Development (SID) Act of 1981, passed at the same time as the sector was suffering difficulties, attempted to increase the effectiveness of the sector's contribution to the national economy by creating the Small Enterprise Development Organization (SIDO). The Fourth National Development Plan of 1989 provided measures in support of the SID Act to provide infrastructure for SMEs' operations, encourage MSMEs with growth potential to access finance, and enhance SMEs' production capacities to boost incomes and employment. The Development Bank of Zambia (DBZ), the Village Industries Services (VIS), and the Small Industries Development Organization (SIDO), which were the main sources of support for small businesses, provided resources to the MSME sector.

2.2 Empirical studies in Africa

The study by Abaho, Mindra, Agasha and Balunywa (2022) examined the nature of the operation of informal savings groups in Uganda. Emphasis was on their composition, the mode of financial transactions and sharing of financial proceeds, the impact of the savings and members loaning on the members' financial and business growth, and the perception of the members on the benefits of the savings. The study also profiled the significant challenges encountered by the groups.

The results show that informal savings organisations can provide low-income individuals with affordable, inclusive, and sustainable funding options. 250 to 3 people can make up a group. A form of identity is needed to join the group as a commitment. Additionally, the findings show that group leaders are chosen by their peers and that their terms of office may be renewed. It was found that members join primarily to save money, and they have gained financially and socially as a result. The largest problem these groups encounter is defaulting members.

In another study by Mohammed, Abdullahi, Abdullahi and Omonoyi (2015) which analysed the socioeconomic effects of the informal finance sector and inclusive growth in north central Nigeria are examined in this research. Analysis of how employment opportunities emerge and alter through time with the

growth process is central to the inclusive growth idea. An increase in employment in the informal sector may follow economic expansion. By lowering borrowing costs, requiring less collateral, streamlining administrative procedures, and increasing competitiveness, the informal financial sector may help sustain growth. To achieve sustainable prosperity in north central Nigeria, however, a well-functioning and regulated informal finance system will be a vital condition.

Additionally, Mohammed, Abdullahi, Abdullahi and Omonoyi (2015) argued that a sizable informal financial sector in terms of employment, business, and productive activities is commonly seen as a barrier to full participation in the economy as well as a roadblock to the long-term growth of the economy and the reduction of poverty in this region. This is because it's unclear how the informal finance sector affects inclusion, growth, and growth. Growth occurs in an environment where job opportunities increase, the poor have better access to these opportunities, and inequality is decreased, which is known as inclusive growth. This study aims to examine the socioeconomic effects of activities in the informal financial sector, inclusion, and economic development in north central Nigeria. The results showed that informal sector operators have a positive and significant impact on regional growth, while the main challenges faced by these institutions are poverty-mentality, illiteracy, high inflation, poor infrastructure, access to credit, social safety nets, and information dissemination.

Previous research on unofficial finance assessed whether microcredit initiatives in Nigeria target the country's comparatively weak and vulnerable. According to recent studies (Adamu, 2007; Irobi, 2008; Wrigth, 2000; Zaman, 2000; McCulloch and Baulch, 2000), informal finance is an effective and potent strategy for reducing poverty and has a favourable influence on the first six out of the seven Millennium Goals.

Khandker (1998) observed that every additional taka provided to a woman adds an extra 0.18 taka to annual household expenses in his study utilising statistical method on assessment of the impact of informal finance across three Bangla programmes. Similarly, Khandker (2005) discovered that each additional 100 taka of credit given to women increases overall yearly household expenditures by more than 20 taka in an updated study conducted in Bangladesh using panel data. This research demonstrated the overwhelmingly positive effects of raising income and reducing vulnerability.

2.3 Variables and Hypotheses

The choice of variables to investigate the effect of the informal money saving scheme (Chilimba) on its member's business growth of Ntemba shop traders in Zambia had been identified by examining the business outcomes increased revenue, increased sales and profits. Since the goal of money saving scheme is to improve the economic condition of the economically active small business owners, the effect of money saving scheme will be measured by changes in the economic welfare of their business.

The conceptual framework for this study is presented in figure 1 below.

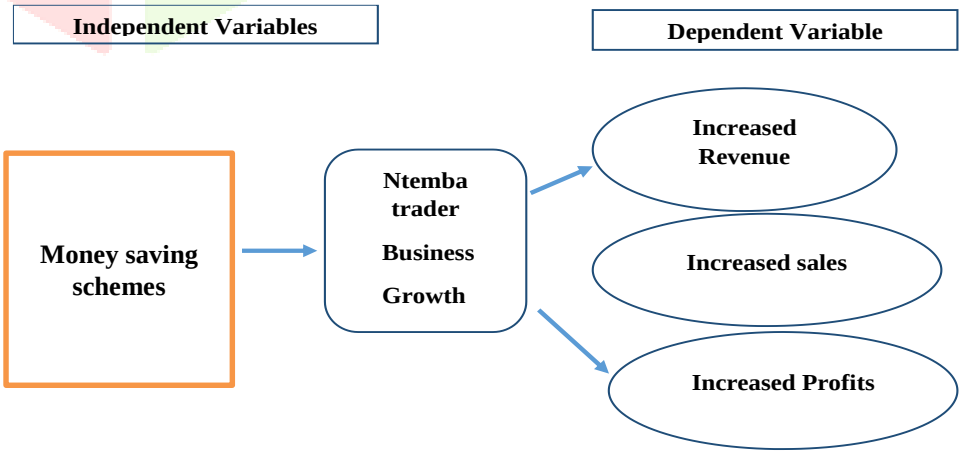

Figure 1: Conceptual Framework

By constructing this framework, this study presented and justified the paradigm in which the study was conceived, knowledge sharing and how the different elements of the study design aligned with the problem identified. The conceptual framework also provided the purpose of the study, the sources from which these frameworks are derived, and how conceptual frameworks are presented. The study further explained the relationship between the response variables and the explanatory variables. The response variables in this study

were increased revenue, increased sales and increased profits whereas the explanatory variable is the money saving scheme known as Chilimba.

3.0 RESEARCH METHODOLOGY

3.1 Philosophy, approach, design, sample size and data sources

The positivism research philosophy was adopted with a cross-sectional research approach and utilized a causal/correlational research design.
Unit of analysis-country and population of the study-annual records with sample, 2010-2024. Secondary data was used from sources such as journal articles, case studies, MSME'S, CDF, BOZ, ZMASTATS etc.

3.2 Data Analysis

Time series annual data from 2010-2024 was used and Multiple regression model applied to the data. To check for stationarity on the time series, Unit root tests were employed. Skewness, Kurtosis and the Jarque-Bera tests were used as indicators of Normality.
Time series analysis was used to test the hypotheses with E views 12 employed to estimate the autoregressive distributed lag (ARDL). The data analyzed included FDI as a percentage of GDP, national savings, inflation, interest and unemployment rate.

4.0 RESULTS AND DISCUSSION

4.1 Unit Root Test

The main purpose for conducting unit root test is to check for stationarity properties, to ensure that the results derived from the regression models are not spurious (Nkoro & Uko, 2016). A time series is said to be stationary if its mean and variance are constant over time.

According to Engle and Granger (1987), a variable Y or series is said to be stationary if it is integrated of order d. In other words, if the non-stationarity hypothesis cannot be rejected the variables are differenced until they become stationary, to imply that the existence of a unit root is rejected. The Augmented Dickey Fuller test was used to test for stationarity. Following this test, it was appropriate to then proceed to test for cointegration.

4.2 Co-integration Analysis

Two variables are said to be co-integrated if they have a long-term or long-run equilibrium, relationship between them. If two or more variables, dependent and regressors are individually non-stationary but their combination is stationary, those variables are co-integrated on the long run (Gujarati, 2004). The cointegration analysis was done using the Bounds test for co-integration.

Modeling time series to keep their long-run information intact can be done through cointegration. Granger (1981) and Engle and Granger (1987) were the first to formalize the idea of cointegration, providing tests and estimation procedure to evaluate the existence of long-run relationship between set of variables within a dynamic specification framework.

Cointegration involves a certain stationary linear combination of variables which are individually non-stationary but integrated into an order, I (d). Cointegration is an econometric concept that mimics the existence of a long-run equilibrium among underlying economic time series that converge over time. Because it brings together short and long-run variable information, cointegration is a strong basis for economic and statistical error correction models. All estimations are done using the student version of Eviews Econometric software.

4.3. Model Specification

Now, consider a k – dimensional time series model:

Ln (chilimba) = β0 + β1log (profit) + β2log (revenue) + β3log (sales) + μt……(1)

Where:

- Chilimba is the Enterprise saving, measured in current ZMW millions.
- Profit is the Total profit population of tuNtemba shop owners measured in the current ZMW millions
- Revenue is the total collection by Tutemba shop owners measured in current ZMW millions.
- Sales is the activity and process involved in selling goods and services measured at current prices in ZMW millions.
- β0 is the constant term.
- β1, β2, β3, and β4, are the coefficients of the explanatory variables.

4.3 Model Specification Test

For the results obtained to be valid in the regression analysis, the model used must be correctly specified. Model misspecification error occurs when one or more variables are either omitted from the model or included in the model. It is important to ensure that the model is correctly specified as it can affect the estimate of the regression coefficients. To ensure that reliable results are obtained, the Ramsey reset test was used to test model misspecification in this study.

The test for Stationarity in this study can be referred to as the Augmented Dickey-Fuller (ADF) test, because the regressor in the original equation, $\boldsymbol{\alpha_o Z_t = c + \alpha_1 Z_{t-1} + \alpha_k Z_{k-1} + \cdots + e_t}$ was augmented by extra differenced terms. The ADF statistics were used to test the time series for Stationarity.

Table 4.1 Unit Root Test Results at Level

Unit Root Results at Level					
Variable	Exogenous	ADF Test Statistic	ADF Critical values (5%)	P-value	Conclusion
Log(Chilimba)	Trend and intercept	-0.14	-3.53	0.99	Non-stationary
Log(Profit)	Trend and Intercept	-4.71	-3.53	0	Stationary
Log(Revenue)	Trend and Intercept	-0.87	-3.53	0.94	Non-Stationary
Log(Sales)	Trend and Intercept	-0.89	-3.52	0.93	Non-Stationary
Log(GDSt)	Trend and Intercept	-2.39	-3.53	0.33	Non-Stationary

Source: Author's construct from E-views, 2024

Table 5.1 shows that all the variables, in exception of Log (Profit) are stationary at level. Therefore, null hypothesis could not be rejected at level for the other variables at one percent, five percent and ten percent because the p value for all the other variables is greater than all conventional levels of significance. Further, the test for stationarity at the first difference was done in Table 5.2.

Table 4.2 Unit Root Test Results at First Difference

Unit Root Results at 1st Difference					
Variable	Exogenous	ADF Test Statistic	ADF Critical values (5%)	P-value	Conclusion
Log(Chilimba)	Trend and intercept	-6.39	-3.52	0	Stationary
Log(Profit)	Trend and Intercept	-9.49	-2.93	0	Stationary
Log(Revenue)	Trend and Intercept	-5.67	-3.52	0	Stationary
Log(Sales)	Trend and Intercept	-6.39	-3.52	0	Stationary
Log(GDSt)	Trend and Intercept	-7.12	-3.52	0	Stationary

Source: Author's construct from E-views, 2024

Table 5.2 shows the summary of the stationarity tests on the variables. The table shows that at level only the Log (Profit) was stationary while at first difference all the variables were stationary. A glance at the p-values for all the variables shows that they are less than at least one of the conventional levels of significance. Therefore, this justified the use of the Auto Regressive Distributed Lag method of estimation since the order of integration differs among variables.

4.4 Result of Unit Root Tests

The test results of the Augmented Dickey-Fuller (ADF) statistic for four of the time series variables (Chilimba, Sales, Revenue and GDSt) used in the estimation were integrated of order one while Profit was integrated at level which implies that these were stationary at level while Revenue, GDSt and sales where stationary at first difference. The decision rule says reject the null hypothesis when t* < ADF critical values which implied that mean data is stationary and therefore unit root does not exist. This suggested that stationarity in the variables could be induced in all the variables by differencing the series once. The implication of these results is that all variables entering the VAR model would appear as rates of change. This conclusion was made because the DFGLS test had substantially higher power than the ADF test. The table below shows descriptive statistics of variables in the VAR model.

4.5 ARDL Estimate

ARDL model was used since all variables were integrated of order 1 (I (1)). This means that some variables were stationary at first difference while others were integrated at level. Using E-views 9, a lag selection of 3 was selected. Akaike Information Criteria (AIC) was employed to select the optimal number of lags in the model. Using Eviews 12, the study ran the ARDL Estimation Output. The results are shown in Table 4.4.

Table 4. 3 ARDL Estimation Output

ARDL Estimation output			
R- squared	0.99	Mean Dependent Var	5.22
Adjusted R-Squared	0.97	S.D Dependent Variable	9.35
S.E of Regression	1.71	Akaike info criterion	50.92
Sum Squared Resid	4.4	Schwarz criterion	41.92
Log Likelihood	-824.87	Hannan - Quinn Criter.	41.38
F- Statistic	57.87	Durbin- Watson Stat	2.15
Prob (F-Statistic)		0	

Source: Computation by the researcher from Eviews

4.6 Testing For Cointegration

In Mathematics, economics and statistics, two variables are said to be cointegrated if there is a long-term equilibrium or relationship between them (Gujarati, 2003). Testing for Cointegration is sometimes conducted for two or more series that have the same stochastic trend in common. The regression analysis for this study was used to reveal the long run relationships among time series variables (Stocks & Watson, 2012). In this case, the study used the Cointegration technique to verify Cointegration between the series of data. If the time series were integrated in the same order, then it would lead to the estimation of Cointegration using the Johansen co-integration test relation. According to this approach, lags of both the explanatory and response variables have one lag of the residual from the co-integrating regression.

Table 5.5 Johansen Cointegration Rank for the Basic VAR Model

Rank	Trace Statistics	Critical Values (95% Level of Confidence)
0	112.6812	48.102
≤1	36.98724	30.5234
≤2	16.296234	17.02036
Rank	Max Statistics	Critical Values (95% Level of Confidence)
0	67.23654	32.15624
≤1	22.32156	23.571616
≤2	8.675123	12.638152

Source: Computation by the researcher from EViews

The purpose of the Johansen Cointegration test was to check the long-term relationship between variables or the correlation between series to determine whether or not they were integrated with each other. Only then could the study run the regression analysis.

Assumptions: All variables both Explanatory and Response variables must be stationary at first difference or level and that the Johansen Cointegration must use the Trace and Max-Eigenvalue statistics.

Null Hypothesis: There is no Cointegration (No long-run relationship between the variables). If both the Trace and Max-Eigenvalue > Critical value, then the study must reject H0 because it means there is no Cointegration in the series. In this case, the study failed to reject H0 because both Trace and Max-Eigenvalues < Critical values and concluded that there was Cointegration. The advantage of the Johansen Cointegration over Engle-Granger Cointegration is that EGC only identifies one cointegrating equation whereas Johansen Cointegration can identify more than 1 cointegrating relationship. If for some reason Trace and Max-Eigen value were different, then Trace would be more appropriate for the estimate.

Table 5.7 showing the results of the co-integration tests.

Table 4. 6 Short-run and ECM Results Error Correction Mechanism Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(Chilimba)	-0.10	0.06	-1.68	0.10
DLOG(Profit)	0.08	0.12	0.66	0.51
DLOG(Revenue)	-0.56	0.14	3.88	0

DLOG(Sales)	0.15	0.05	3.23	0
D(DUMMY)	0.20	0.23	-0.89	0.38
CointEq(-1)	-0.37	0.1	-3.86	0
CointEq = LOG(Chilimba) - (-0.52*LOG(Profit) + 0.21*LOG(GOVT) + 0.36				
*LOG(Revenue) + 0.74*LOG(Sales) + 1.73*DUMMY + 7.51)				

Source: Computation by the researcher from EViews

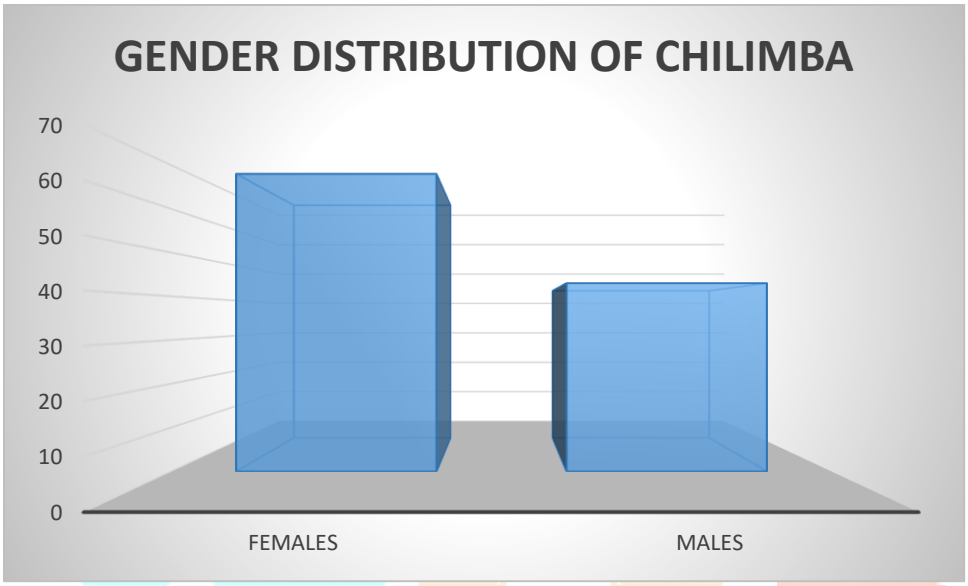

Figure 5.5: Demographics of Informal Savings groups (Chilimba)

Source: Author's construct, 2024

The findings revealed that the gender distribution of the informal money savings group among tuNtemba shop owners in Lusaka's CBD are more women accounting for 68% whereas men account for 45%. This is in tandem with the findings of ZAMSTATS business review of 2021. More women are involved in Chilimba than men. From the finding it can be seen that women are trying to be financially independent and self-sustained hence, their involvement in this type of informal money saving scheme. Women involvement in chilimba and in business has helped reducing the gender bridge gap in financial literacy.

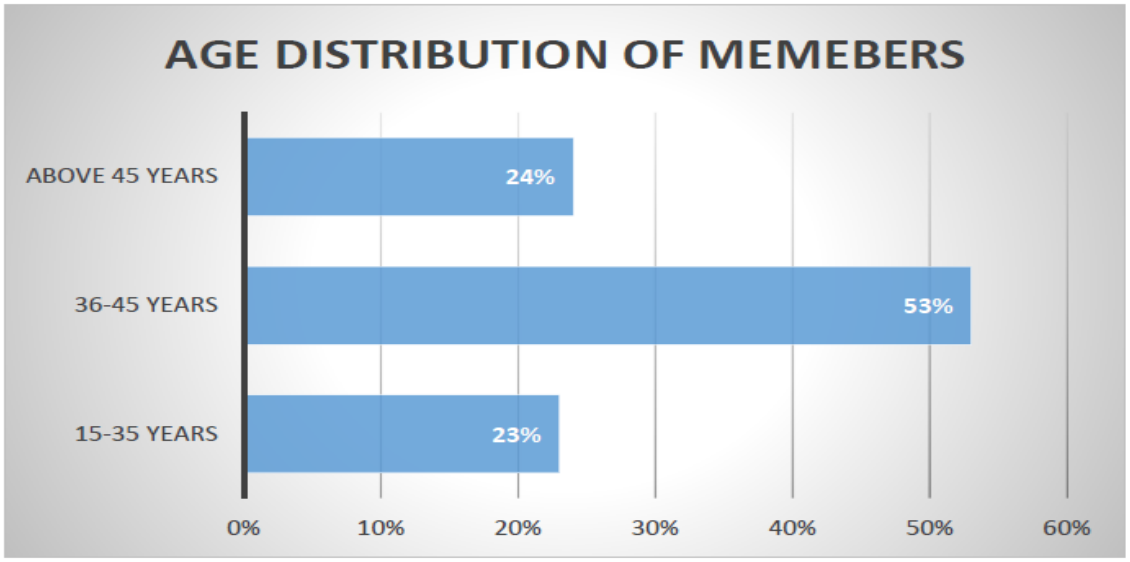

Figure 5.6: Age Distribution of Members

Source: Author's construct, 2024

Over 50% of the Cooperative members were aged between the 36 and 45, 24% were above 45 years while 23% were youths.

The findings revealed that 50% of the members are between the ages of 36 and 45 reason being that people within this range group are proactive and look for every opportunity to empower themselves and be financially stable for their families. Financial sustainability becomes the driving force. The number of members participating in Informal money saving scheme reduced to 24% beyond 45years simply because people above this age are retirees who have become complacent with their current financial status core. Below the ages of 36 years' people are more focused on pursuing their academic qualifications than investing in businesses, hence, the reduction in the number of participants.

5.0 Conclusion and Recommendations

5.1 Introduction

The findings of this study demonstrated that Chilimba, as an informal money-saving scheme, significantly contributed to the business growth of tuNtemba shop traders in Lusaka by providing accessible financial resources for capital accumulation, stock expansion, and operational stability. This positive impact can be attributed to the financial discipline and social networks fostered within Chilimba groups, which align well with the principles of Financial Inclusion Theory and Social Capital Theory. The results are consistent with studies by Mwaba (2021) and Mwangi & Ouma (2022), which emphasized that informal savings schemes improve financial inclusion and enhance business performance through structured saving practices and mutual support systems.

Additionally, the findings revealed that Chilimba schemes empower communities by promoting solidarity, cooperation, and mutual support. These schemes provide essential safety nets during emergencies, such as medical bills and funerals, particularly in areas lacking insurance or social security systems. Furthermore, Chilimba encourages a savings culture, fostering financial discipline even among individuals with limited resources. This practice contributes to long-term economic stability, as highlighted by Anokye & Asare (2023) in their study on informal savings schemes in Ghana.
The study also established that Chilimba's adaptability to local needs makes it a practical financial alternative for individuals excluded from formal banking systems. Its flexible contribution amounts, culturally appropriate practices, and trust-based mechanisms enhance its relevance and sustainability. Moreover, Chilimba has been particularly effective in bridging gender gaps, as evidenced by the finding that 68% of its participants are women, who often face barriers to accessing formal financial services. This empowerment promotes greater household financial security and improved welfare for families, supporting the arguments made by Kairiza et al. (2024).

The study's findings overwhelmingly support the view that Chilimba participation promotes business growth and economic empowerment. However, strengthening governance structures and integrating informal savings mechanisms with formal financial systems would enhance their sustainability and effectiveness. As emphasized by Van Scheers (2010), effective management and integration of informal savings schemes can bridge the gap between financial exclusion and economic growth.
Ultimately, Chilimba is not just a financial tool—it is a mechanism for empowerment, resilience, and community-building, playing a vital role in the socio-economic fabric of Zambia. Future research should explore hybrid models that combine informal and formal financial mechanisms to ensure that small-scale entrepreneurs can access secure and sustainable financing.

5.2 Policy Implications and Recommendations

Based on the findings of this study, several recommendations are proposed to enhance the effectiveness, sustainability, and impact of Chilimba on business growth among tuNtemba shop traders in Lusaka:

1. **Strengthen Financial Literacy Programs**
   - Financial literacy training should be provided to Chilimba members, focusing on effective money management, investment strategies, and proper record-keeping.
   - Educational workshops can be conducted by government agencies, NGOs, and financial institutions to enhance the financial knowledge of informal traders, thereby promoting better financial decisions and long-term growth.
2. **Establish Better Record-Keeping Mechanisms**
   - Encouraging participants to maintain accurate and transparent records of contributions, withdrawals, and distributions within the Chilimba scheme.
   - Introducing simple bookkeeping tools and mobile applications tailored for informal savings groups to enhance accountability and financial transparency.
3. **Promote Integration with Formal Financial Systems**
   - Collaboration between formal financial institutions and informal savings groups can be encouraged to provide access to microloans, savings accounts, and credit facilities.
   - Developing hybrid financial models that combine the strengths of informal savings mechanisms with formal banking structures to enhance capital security and sustainability.
4. **Enhance Governance and Leadership Structures**
   - Establishing clear guidelines and leadership roles within Chilimba groups to minimize mismanagement and internal conflicts.
   - Providing leadership training programs for group leaders to improve governance and decision-making processes.
5. **Develop Regulatory Frameworks to Safeguard Participants**
   - Policymakers should consider developing policies that recognize and support informal savings groups while providing legal protections for participants' savings.
   - Regulatory frameworks should aim to improve the security and reliability of informal savings schemes without disrupting
6. **Encourage Savings Diversification**
   - Encouraging Chilimba participants to diversify their savings by integrating with formal savings platforms where possible.
   - Promoting savings schemes that allow members to invest in productive assets and income-generating activities for sustainable growth.
7. **Targeted Support for Women Entrepreneurs**
   - Providing specialized financial literacy programs and support services aimed at empowering female entrepreneurs, given their high participation rate (68%) in Chilimba schemes.
   - Developing initiatives that address gender-specific barriers to accessing formal financial services.
8. **Conduct Further Research**
   - Future studies should explore hybrid models that integrate informal savings mechanisms with formal financial systems to improve financial inclusion and economic resilience.
   - Research should also focus on monitoring the long-term impact of Chilimba participation on business sustainability and household welfare.

These recommendations, if implemented, could significantly improve the effectiveness, resilience, and inclusiveness of Chilimba schemes in promoting small business growth and economic empowerment.

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