

Critical Success Factors for Microfinance Institutions (MFIs) Survival in Emerging African Markets: A TOPSIS-Based Evaluation

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Abstract: *Microfinance institutions (MFIs) play a crucial role in advancing financial inclusion, promoting entrepreneurship, and supporting poverty alleviation across emerging African economies. Despite their developmental significance, many MFIs continue to face sustainability and survival challenges stemming from financial constraints, institutional inefficiencies, and macroeconomic vulnerabilities. This study identifies and ranks the critical success factors that determine the survival and sustainability of MFIs in six emerging African economies: South Africa, Kenya, Nigeria, Egypt, Ethiopia, and Morocco. Using data from 210 MFIs in the MIX Market database covering 1999–2019, the research employs a multi-criteria decision-making approach, specifically the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), to rank factors derived from a prior Cox Proportional Hazards (Cox PH) survival analysis. The results reveal that GDP growth is the most influential determinant, followed by the rural population share (PERRURPOP). The study contributes to the microfinance literature by combining survival and ranking methodologies, offering a replicable framework for prioritising sustainability determinants that can guide policy, investment, and strategic management decisions in the microfinance sector.*

Keywords: *Microfinance institutions; Survival analysis; TOPSIS; Survival determinants; Cox Proportional Hazards model; Financial inclusion*

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Introduction

Microfinance institutions (MFIs) have become indispensable in promoting inclusive growth, particularly in low- and middle-income countries where access to formal financial services remains limited. By providing credit, savings, and other financial products to low-income households and small-scale entrepreneurs, MFIs contribute significantly to economic empowerment and poverty reduction. In emerging African economies, MFIs are widely recognised as key enablers of financial inclusion and small business development (Chikwira, 2022). The United Nations (UN) and international development partners have positioned microfinance as an essential instrument for achieving the Sustainable Development Goals (SDGs), particularly Goal 1 (No Poverty) and Goal 8 (Decent Work and Economic Growth). Despite these contributions, many MFIs face persistent challenges that threaten their sustainability. High operational costs, limited capitalisation, regulatory constraints, and weak institutional capacity often undermine their long-term viability (Kosgei, 2019). Macroeconomic instability, fluctuating interest rates, and shifting donor priorities further compound the risks faced by MFIs operating in volatile environments. Consequently, the survival rate of MFIs in Africa remains lower than in Asia and Latin America (Lafourcade et al., 2005), making it academically and policy relevant to understand which factors most strongly influence the sustainability of these institutions.

The African microfinance landscape is characterised by considerable heterogeneity in institutional forms, governance models, and regulatory frameworks. Institutions range from non-governmental organisations (NGOs) and credit unions to non-bank financial institutions (NBFIs) and microfinance banks, each operating under different mandates, ownership structures, and market conditions that influence their performance outcomes (Khan & Shireen, 2020). The sustainability of these entities depends on complex interactions among internal and external factors. Internal factors include financial efficiency, governance quality, portfolio management, and institutional capacity, while external factors include macroeconomic stability, regulatory support, and political conditions (Anwar, 2020; Chikalipah, 2017). Yet empirical findings on MFI performance have been mixed. Some studies highlight financial indicators such as operational self-sufficiency (OSS) and return on assets (ROA) as key drivers of sustainability (Mia et al., 2023), whereas others emphasise institutional structure, ownership type, and outreach depth (Ghose et al., 2018; Kinde, 2012). Additional evidence suggests that macroeconomic variables, such as GDP growth and inflation, affect MFIs differently across regions (Anwar et al., 2020). These conflicting findings imply that MFI sustainability is highly context-dependent and that identifying the most influential factors requires a more integrated and comparative analytical approach.

Although substantial research exists on MFI efficiency, outreach, and social performance, relatively few studies have explicitly focused on identifying the critical factors that determine institutional survival and long-term sustainability. Much of the existing work examines

individual determinants in isolation rather than analysing their relative importance or interactions. Moreover, previous studies have primarily concentrated on Asian markets, resulting in limited comparative evidence for African economies (Dutta & Dutta, 2011; Roy & Patro, 2021). This lack of consensus on the determinants of MFI survival limits the development of evidence-based strategies to strengthen institutional resilience in the African context. Addressing these gaps, the present study employs a two-stage methodological approach that combines survival modelling with multi-criteria decision analysis. The Cox PH model is used to estimate the factors influencing MFI survival. In contrast, the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) is used to rank these determinants by relative importance. Integrating the Cox PH model with a multi-criteria decision-making framework provides a robust empirical method for prioritising sustainability drivers. It advances the methodological literature by demonstrating how hazard-based outputs can be transformed into actionable decision priorities for managers and policymakers.

The primary aim of this study is to identify and rank the critical success factors that influence the survival and sustainability of MFIs operating in selected emerging African economies. This objective is achieved by estimating the determinants of MFI survival using a Cox PH model and then ranking them using TOPSIS. The study also derives policy implications to support the resilience and long-term sustainability of MFIs in emerging markets, offering insights relevant to regulators, development partners, and institutional managers.

This paper contributes to the existing body of knowledge in several significant ways. It provides one of the few empirical applications of the TOPSIS approach within the African microfinance sector, extending its use beyond traditional efficiency assessments. By integrating survival modelling results into a multi-criteria decision framework, the study introduces a novel analytical lens through which practitioners and policymakers can interpret and act upon the determinants of sustainability. Additionally, the research contributes to broader debates on the operational, regulatory, and market conditions that promote institutional resilience in volatile environments. The remainder of the paper presents a comprehensive review of the theoretical and empirical literature on MFI performance and sustainability, outlines the research design, data sources, and analytical methods used, discusses the empirical findings and sensitivity analysis, and concludes with a synthesis of implications and recommendations for policy and practice.

Literature Review

The literature in this paper presents three broad categories of determinants influencing MFI sustainability: financial determinants such as operational self-sufficiency, profitability, asset base, and portfolio quality; institutional determinants including ownership type, governance, age, and outreach capacity; and macroeconomic determinants such as GDP growth, inflation, financial freedom, and regulatory quality. Thus, the review presented synthesises the

empirical evidence on these determinants and positions it within three theoretical perspectives that underpin MFI sustainability and survival: lifecycle theory, agency theory, and institutional theory.

Microfinance institutions (MFIs) are designed to extend financial services such as credit, savings, insurance, and remittances to low-income individuals and micro-entrepreneurs who are excluded from traditional banking systems (Ledgerwood, 1999). Their sustainability refers to the ability to cover operational costs and continue service delivery without reliance on donor or concessional funds (Hermes et al., 2018). Two intertwined dimensions define sustainability: financial sustainability, reflected in indicators such as operational self-sufficiency (OSS), return on assets (ROA), and portfolio quality; and social sustainability, expressed through outreach depth, breadth, and the welfare of clients served (Armendáriz & Szafarz, 2011; Wanjau, 2007). Balancing financial viability with social inclusion has become an enduring challenge, giving rise to the persistent debate on mission drift, which is the tendency for MFIs to prioritise profitability over serving poorer clients as competition and commercialisation expand (Bhuiyan et al., 2020; Cull et al., 2007). This balance is central to understanding how MFIs survive, grow, and sustain themselves in the evolving financial landscape of emerging markets.

From a theoretical point of view, Lifecycle theory views MFIs as organisations that evolve through stages of establishment, growth, maturity, and possible decline. The survival of these MFIs is then shaped by how effectively institutions adapt strategies, build capabilities, and manage risk as they grow. The Lifecycle theory underscores that the challenges faced by MFIs depend on whether they are young or mature. Newly established (young or early-stage) MFIs tend to struggle with resource constraints and legitimacy-building, while mature MFIs must preserve efficiency, innovate, and remain competitive in more saturated environments. The Agency theory complements this perspective by highlighting the principal-agent relationships within MFIs. This is where investors, donors or regulators delegate authority to managers. Thus, potentially creating conflicts of interest under the double-bottom-line mandate. Survival is therefore strengthened when governance and monitoring mechanisms reduce opportunism, align incentives, and support prudent risk-taking while maintaining social outreach objectives (Jensen & Meckling, 1976). The institutional theory further explains survival by emphasising that MFIs operate within formal and informal institutional environments (regulations, norms, and legitimacy expectations) that shape compliance burdens, stakeholder trust, resource access, and market stability (Meyer & Rowan, 1977; Scott, 2014). Taken together, these perspectives provide an integrated foundation for examining financial, institutional, and macroeconomics/regulatory determinants of MFI sustainability and for interpreting why some determinants exert stronger survival effects than others in emerging market contexts.

Financial strength is widely acknowledged as a prerequisite for institutional longevity. Empirical studies show that higher operational self-sufficiency enables MFIs to cover costs, withstand external shocks, and reinvest surpluses productively (Mia et al., 2023). Bogan (2012) highlights that well-structured capital bases, comprising equity, retained earnings, and savings, promote institutional stability, whereas excessive reliance on external grants may distort incentives and undermine financial discipline. Capital structure affects liquidity and credit risk, as shown in Uganda by Geresem et al. (2021), even if its direct impact on profitability is limited. Size and asset base are also associated with sustainability; larger MFIs benefit from economies of scale and better risk diversification (Hermes et al., 2018). Studies by Chikalipah (2020) and Gonzalez (2007) note that while maturity and scale enhance efficiency, they can reduce outreach if MFIs shift focus toward lower-risk, higher-income clients. Smaller MFIs, by contrast, often maintain closer community engagement but struggle with high transaction costs, especially in rural markets (Lopez & Winkler, 2018).

Profitability indicators such as return on assets (ROA) and return on equity (ROE) remain central in performance analysis, with studies by Kinde (2012) and Naz et al. (2019) showing that profitability attracts investors and ensures institutional continuity. However, an excessive focus on profit can increase the risk of excluding poorer clients. Portfolio quality, usually measured through portfolio at risk (PAR), reflects credit discipline and client repayment behaviour; high default rates signal operational weaknesses and can jeopardise survival (Khan & Gulati, 2019). Collectively, evidence suggests that financial viability is indispensable, although it is not sufficient on its own to guarantee long-term sustainability.

Beyond financial metrics, institutional design and governance structures also play a fundamental role in shaping MFI performance. Ownership form, whether NGO, cooperative, non-bank financial institution (NBFI), or microfinance bank, determines mission orientation, access to funding, and the regulatory framework under which institutions operate. Hartarska and Nadolnyak (2007) show that regulation alone does not ensure superior performance; instead, it interacts with managerial quality, institutional capacity, and market conditions. Mia et al. (2023) find that legal status and regional placement influence efficiency, with NGOs performing well in outreach while NBFIs excel in profitability. Institutional age and maturity likewise influence performance outcomes. Older MFIs tend to achieve higher financial efficiency but face a greater risk of mission drift (Wijesiri et al., 2017). In contrast, younger institutions often innovate more quickly but encounter resource and capacity constraints. Linares-Zegarra and Wilson (2017) note that young MFIs grow rapidly, although sustainability improves over time as governance structures become more established. Governance quality, including transparency, accountability, and board competence, has gained prominence as a determinant of survival. Strong governance supports prudent risk management and strategic alignment between financial and social goals, while weak governance undermines stakeholder confidence and can lead to mismanagement (Tchakoute-Tchuigoua, 2010).

Social outreach and client-centred factors further shape sustainability. Outreach reflects the social mission of MFIs, encompassing the depth of outreach (the poverty level of clients) and breadth (the number of clients served) (Kinde, 2012). Research in Ethiopia and Kenya indicates that expanding outreach can improve loan repayment by strengthening client loyalty (Nyamsogoro, 2010). However, rapid expansion may also create trade-offs between efficiency and inclusion, as Atara (2023) and Fadikpe et al. (2022) caution. NGOs typically outperform other institutional types in outreach due to their donor-supported structures. Yet their heavy reliance on external funding leaves them vulnerable during periods of donor fatigue or macroeconomic instability. In contrast, NBFIs achieve higher financial efficiency through market-based funding but often serve wealthier clients. The literature consistently indicates that achieving outreach sustainability requires aligning social objectives with financial capacity and contextual constraints.

MFIs operate within national economic and regulatory environments that significantly affect their performance. GDP growth, inflation, interest rate movements, and exchange rate stability influence loan demand, repayment capacity, and overall operational risk. Chikalipah (2017) finds that economic growth positively affects MFI sustainability in Sub-Saharan Africa, while Anwar (2020) confirms that institutions operating in higher-GDP economies tend to be more efficient. High inflation, however, erodes the real value of loans and increases credit risk (Fernando, 2006). Regulatory quality and ease of doing business also shape sustainability. Simplified business regulations can enhance efficiency by reducing compliance costs (Farooq et al., 2022). In contrast, financial freedom, which allows institutions to operate with limited government interference, can improve efficiency but may heighten vulnerability in contexts with weak governance (Anwar et al., 2020). Demographic patterns, particularly in rural areas, affect operational costs and repayment dynamics. MFIs serving predominantly rural areas incur higher transaction costs but play a crucial role in poverty reduction (Lopez & Winkler, 2018). Digital finance and mobile banking have become essential tools for improving rural service delivery and lowering operational costs (Khan & Shireen, 2020). Overall, macroeconomic stability and supportive regulatory frameworks are essential for the long-term survival of MFIs, although their effects vary across regions.

Recent research highlights that sustainability determinants rarely operate in isolation; instead, their interactions often explain performance differences across institutions. For instance, financial freedom benefits some institutional types more than others, with NGOs leveraging autonomy while NBFIs depend heavily on predictable regulatory regimes (Anwar et al., 2020). Similarly, the advantage of large size is realised only when combined with strong operational self-sufficiency; otherwise, scale may amplify inefficiencies rather than reduce them (Hermes et al., 2018). The complex interplay among financial, institutional, and macroeconomic factors indicates that MFI sustainability is inherently multidimensional. While interaction terms in econometric models can capture these complexities, they often

complicate interpretation. Multi-criteria decision-making (MCDM) tools, such as the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), can help translate complex statistical relationships into more intuitive, decision-oriented rankings.

Most prior studies on MFI sustainability have relied on regression or efficiency analysis methods, such as Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA). Although these approaches identify significant relationships among variables, they rarely prioritise or rank determinants by relative importance. Multi-criteria decision-making techniques address this limitation by enabling simultaneous evaluation of multiple quantitative and qualitative criteria (Opricovic & Tzeng, 2004; Rahim et al., 2018). The TOPSIS method (Hwang & Yoon, 1981) ranks alternatives based on their proximity to an ideal and an anti-ideal solution, offering transparency, simplicity, and compatibility with normalised econometric data. Although TOPSIS has been applied in Asian microfinance contexts (Alaoui & Tkiouat, 2018; Bhanot & Bapat, 2015; Dutta & Dutta, 2011), its use in African settings remains limited. Integrating TOPSIS with survival-analysis outputs, therefore, represents a methodological innovation that bridges predictive modelling with decision-oriented analysis.

Taken together, the literature converges on financial, institutional, and macroeconomic determinants of MFI sustainability and survival, yet there is limited agreement on their relative importance or the extent to which they interact across institutional and national contexts. Moreover, few studies in Africa employ comparative or ranking methodologies capable of prioritising determinants based on empirical significance. The present study addresses this gap by integrating the Cox PH model with the TOPSIS ranking approach. This hybrid method captures both statistical significance and relative importance, translating empirical findings into actionable rankings that can inform policy design and managerial practice to strengthen MFI resilience and promote sustainable financial inclusion.

Methodology

This study adopts a quantitative, two-stage analytical framework that combines survival modelling with multi-criteria decision-making (MCDM). The first stage utilised the Cox Proportional Hazards (Cox PH) model to identify the determinants of MFIs' survival in selected emerging African economies. The second stage employed the Technique for Order Preference by Similarity to the Ideal Solution (TOPSIS) to rank and prioritise the determinants based on their relative importance. Integrating these two approaches enabled both statistical inference and decision-oriented prioritisation. While the Cox PH model quantified the effect and significance of each variable on survival time, TOPSIS converts these econometric outputs into an interpretable hierarchy of critical success factors. The Cox PH results are presented and interpreted first in the Results section, followed by the TOPSIS rankings based on those estimates.

Critical Success Factors for Microfinance Institutions (MFIs) Survival in Emerging African Markets: A TOPSIS-Based Evaluation

The study used panel data spanning the period 1999–2019 to examine MFI survival and sustainability across six emerging African economies: South Africa, Kenya, Nigeria, Egypt, Ethiopia, and Morocco. Institutional-level data were extracted from the Microfinance Information Exchange (MIX Market) database, which provides detailed financial, operational, and outreach indicators for MFIs globally. To complement this dataset, macroeconomic and governance variables were sourced from the World Bank’s World Development Indicators (WDI) and Worldwide Governance Indicators (WGI). All data cleaning, preparation, transformation, and modelling were conducted using the R statistical software environment.

Survival time is defined as the duration (in years) from an MFI’s establishment to either observed exit (event=1) or at last year it is observed operating (right-censored, event=0). Explanatory variables were chosen to reflect internal financial and organisational conditions as well as external macroeconomic and regulatory environments. To capture interdependencies, interaction terms between key variables were included. Table 1 summarises the explanatory variables, their categories, brief descriptions, and theoretically expected coefficient signs.

Table 1: Explanatory Variables, Categories, and Expected Signs (Cox PH Inputs)

Variable (s)	Category	Description	Expected sign (β)
LogMktSize: OSS	Financial (interaction)	Scale–efficiency synergy	–
OSS	Financial	Efficiency/cost recovery	–
GDPgrowth	Macroeconomic	Economic conditions/repayment capacity	–
FinFreedom	Macro–regulatory	Financial market liberalisation	± 1
NBFI: FinFreedom	Institutional–macro (interaction)	Liberalisation effect for NBFIs	\pm
GLPA	Financial/Outreach	Loan portfolio scale/outreach intensity	–
EaseDoingBus: FinFreedom	Macro–regulatory (interaction)	Regulatory efficiency: liberalisation	\pm

¹ \pm indicates an a priori ambiguous expected sign: the direction may be positive or negative depending on institutional form, lifecycle stage, and country context.

PERRURPOP	Macro/Demographic	Percentage of rural population	+
EaseDoingBus	Macro-regulatory	Regulatory efficiency/compliance cost	-
NGO	Institutional	NGO ownership form	±
NGO: RURPOP	Institutional-macro (interaction)	Rural development context effect for NGOs	±
IntRates	Macroeconomic	Interest-rate environment/funding cost	±
NBFI×RURPOP	Institutional-macro (interaction)	Rural-development context effect for NBFIs	±
NBFI	Institutional	NBFI ownership form	±
LBBGC: LogMktSize	Financial (interaction)	Loan size (avg. balance) × scale	±
RURPOP	Macro/Demographic	Economic Development (rural development context)	±
LogMktSize: GLPA	Financial (interaction)	Scale × portfolio expansion effect	±
NGO: FinFreedom	Institutional-macro (interaction)	Liberalisation effect for NGOs	±

The explanatory variables were grouped into financial, institutional and macroeconomic categories to reflect both internal and external determinants of MFI survival. Additionally, interaction terms between key variables, such as LogMktSize and OSS, NBFI and FinFreedom, and NGO and RURPOP, were also included to capture contextual interdependencies.

Stage 1: Cox Proportional Hazards (Cox PH) Model Specification and Diagnostics

The Cox Proportional Hazards (Cox PH) model is used to estimate how covariates affect the hazard, or risk of MFI exit, conditional on survival time. The CPH model is a semi-parametric regression method widely used in survival analysis because it does not require specification of the baseline hazard distribution (Cox & Oakes, 1984; Cleves et al., 2010).

$$h_i(t) = h_0(t) \exp(\beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki})$$

Where $h_i(t)$ denotes the hazard function for the institution i at time t ; $h_0(t)$ represents the baseline hazard, and X_{ki} are explanatory variables with coefficients β_k . Hazard ratios ($HR =$

e^{β}) greater than 1 indicates increased risk (reduced survival), while HR values below 1 suggest improved survival prospects. Right censoring is handled naturally within the Cox framework using the partial likelihood approach.

Cox PH model adequacy was assessed through the standard diagnostics. The proportional hazards assumption was tested and confirmed using the Schoenfeld residuals. Multicollinearity was examined using variance inflation factors (VIF). Potential influential observations and model fit were assessed using Martingale and Deviance residuals, and overall significance was evaluated using Wald and Likelihood-ratio tests. These diagnostics supported the suitability of the Cox PH model for the survival analysis conducted.

3.2 Stage 2: TOPSIS Model Ranking Procedure

To move from statistical estimation to policy -relevant prioritisation, TOPSIS was applied to the set of statistically significant determinants from the Cox PH model. In this paper, each significant determinant is treated as an alternative, and three Cox PH outputs (parameter coefficient β , hazard ratio HR, and p-value) serve as evaluation criteria. These outputs were transformed into non-dimensional values and arranged into a decision matrix. Equal criterion weights were applied in the baseline specification to avoid imposing subjective importance on any single metric.

Following the standard TOPSIS procedures (Hwang & Yoon, 1981; Opricovic & Tzeng, 2004), the method normalises the decision matrix, applies the criterion weights, determines the positive and negative ideal solutions, and computes the Euclidean distance of each determinant from these ideal points. The closeness coefficient ($C^* \in [0,1]$) is then calculated, with larger values indicating determinants closer to an ideal solution and thus relatively more important for MFI survival. Following Ding et al. (2016) and Fei et al. (2016), Table 2 below shows the TOPSIS steps applied in this paper:

Table 2: TOPSIS Approach Workflow (Inputs and Outputs)

Step	Input	Output
Step 1: Construct the Decision Matrix (alternatives (factors) x criteria)	Data for all alternatives (predictor factors) across all criteria (e.g., HR, β , p-value)	Decision matrix $X = [x_{ij}]$ (rows = alternatives, columns criteria)
Step 2: Normalise the Matrix to eliminate scale differences among criteria.	Decision matrix X	Normalised matrix = $R = [r_{ij}]$
Step 3: Apply Weights to the Normalised Data.	Normalised decision matrix = R weights w_j with $\sum_j w_j = 1$	Weighted normalised matrix $V = [v_{ij}] = w_j \cdot r_{ij}$

Equal weights to ensure neutrality		
Step 4: Determine Positive and Negative Ideal Solutions (PIS and NIS)	Weighted normalised matrix V; criterion type (benefit/cost)	Positive Ideal Solution A^+ and Negative Ideal Solution A^-
Step 5: Compute distance to ideals	V, A^+, A^-	Euclidean distances for each alternative: $S_i^+ = \sqrt{\sum_{j=1}^n (V_{ij} - V_j^+)^2}$ $\forall j$ and $S_i^- = \sqrt{\sum_{j=1}^n (V_{ij} - V_j^-)^2}$ $\forall j$
Step 6: Calculate the closeness coefficient, C, C^* .	Distances S_i^+ and S_i^- from Step 5; (Implicitly relies on V, A^+, A^-)	$C^*_i = \frac{S_i^-}{S_i^+ + S_i^-}$ for each alternative; $C^* \in [0,1]$. Interpretation: a higher $C^* \rightarrow$ closer to the ideal \rightarrow a more important factor
Step 7: Ranking the predictor variables in descending order of C^* values.	Closeness coefficients C^*_i	Final ranking in descending order of C^* (highest $C^* = rank 1$)

The seven-step TOPSIS procedure provides a systematic approach for ranking the determinants of MFI survival derived from the Cox PH analysis. A sensitivity analysis was conducted by varying the weights assigned to β , HR, and p-values to assess the robustness of the resulting rankings to alternative weighting schemes.

3.3 Robustness and Sensitivity Testing

To ensure the reliability and robustness of the TOPSIS ranking outcomes, a sensitivity analysis was conducted as an additional validation step. Sensitivity analysis is essential in multi-criteria decision-making because the relative importance assigned to criteria may influence final rankings. By systematically varying the weights applied to the Cox PH-derived criteria, the analysis tests whether the prioritisation of determinants is stable or overly dependent on specific weighting choices. This process strengthens the credibility of the findings by demonstrating that the ranking of critical success factors does not hinge on any single methodological assumption. Sensitivity testing, therefore, provides confidence that the integrated Cox PH–TOPSIS framework produces results that are robust, consistent, and suitable for informing policy and managerial decision-making.

Results, Discussion, and Policy Implications

The Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) analysis was applied to rank the determinants of MFIs' survival and sustainability across six emerging African economies: South Africa, Kenya, Nigeria, Egypt, Ethiopia, and Morocco. The determinants were derived from the statistically significant factors identified in the Cox PH model. By transforming the estimated coefficients, hazard ratios, and significance levels into a multi-criteria decision matrix, the study quantified and prioritised the relative importance of each factor influencing MFI longevity.

Cox PH Results

The significant predictors from the Cox PH model are presented below in Table 3 and serve as the quantitative input for the subsequent TOPSIS analysis. Table 3 shows that several effects are interaction-dependent. Operational self-sufficiency (OSS) is associated with a higher hazard of exit ($\beta = 2.988$; HR = 19.842; $p < 0.001$), and gross loan portfolio (GLPA) is similarly associated with a higher hazard ($\beta = 2.592$; HR = 19.842; $p < 0.001$), consistent with the possibility that aggressive cost recovery and rapid portfolio expansion can elevate short-run risk. However, these risks are moderated by scale: the interactions LogMktSize: OSS ($\beta = -0.247$; HR = 0.781; $p < 0.001$) and LogMktSize: GLPA ($\beta = -0.275$; HR = 0.781; $p < 0.001$) indicate that greater institutional size/capacity reduces the hazard associated with efficiency pressures and expansion dynamics. External conditions are also significant: GDP growth increases hazard ($\beta = 0.418$; HR = 1.518; $p < 0.05$) and financial freedom increases hazard ($\beta = 0.119$; HR = 1.126; $p < 0.01$), suggesting that faster-growth and more liberalised environments can intensify competition and adjustment pressures, with additional heterogeneity captured by the significant interaction terms EaseDoingBus: FinFreedom ($\beta = 0.0065$; HR = 1.0065; $p < 0.001$), NBFi: FinFreedom (HR = 1.078; $p < 0.01$), and NGO: FinFreedom (HR = 1.111; $p < 0.01$).

In contrast, a more enabling business environment reduces hazard (EaseDoingBus: $\beta = -0.057$; HR = 0.944; $p < 0.01$), while higher interest rates increase hazard ($\beta = 0.098$; HR = 1.103; $p < 0.001$). Institutional form matters: NGOs and NBFIs exhibit lower baseline hazard relative to the reference category (LegalStat-NGO: HR = 0.0053; $p < 0.001$; LegalStat-NBFI: HR = 0.0376; $p < 0.01$), while rural-context effects are significant and institution-contingent (PERRURPOP: HR = 0.9815; $p < 0.05$; plus, NGO: RURPOP and NBFI: RURPOP interactions).

Table 3: Significant predictor variables from the Cox PH analysis

Predictor Variables	Parameter Coefficients	Hazard ratio	Pr(> z)
OSS	2.98778000000	19.8416000000 0	2.07e-06 ***
LogMktSize: OSS	-0.24737000000	0.78080000000	5.21e-07 ***

GLPA	2.59212000000	19.8416000000 0	2.49e-05 ***
LogMktSize: GLPA	-0.27502000000	0.78080000000	2.85e-05 ***
LBBGC: LogMktSize	-0.05802000000	0.94360000000	0.00431 **
PERRURPOP	-0.01870000000	0.98150000000	0.03068*
EeasDoingBus	-0.05722000000	0.94440000000	0.00233***
GDPgrowth	0.41760000000	1.51830000000	0.04106*
FinFreedom	0.11860000000	1.12600000000	0.00543**
IntRates	0.09760150000	1.10250000000	0.0004 ***
EaseDoingBus: FinFreedom	0.00651200000	1.00650000000	7.95e-05 ***
LegalStat-NBFI	-3.28039700000	0.03761300000	0.004079 **
LegalStat-NGO	-5.23516900000	0.00532600000	0.000567 ***
LegalStat NBFI- FinFreedom	0.07517200000	1.07806900000	0.006849 **
LegalStat NGO- FinFreedom	0.10489600000	1.11059600000	0.001958 **
RURPOP	0.00000004055	1.00000000000	0.00110 **
LegalStat NBFI-RURPOP	-0.00000004392	1.00000000000	0.00366 **
LegalStat NGO-RURPOP	-0.00000004457	1.00000000000	0.00466 **

*Note. Significance codes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.*

These statistically significant Cox PH outputs (β , HR, and p-values), as shown in Table 3 above, are then used as input criteria for TOPSIS to prioritise the determinants based on their relative importance.

TOPSIS Ranking of Significant Determinants

Having identified the statistically significant factors affecting the survival of MFIs using the Cox PH model, the study applies the TOPSIS method to prioritise these determinants based on their relative importance. The Cox PH outputs, parameter coefficients (β), hazard ratios (HR), and p-values, were transformed into non-dimensional indicators and organised into a decision matrix. TOPSIS then produced closeness coefficients (C^*) for each determinant, with higher values indicating greater proximity to the ideal solution and thus greater relative importance as a survival determinant.

Normalisation and Weighting

In Step 1, the Cox PH outputs (coefficients, hazard ratios, and statistical significance) were converted into a comparable, non-dimensional form to construct the TOPSIS decision matrix. Vector normalisation was applied to each criterion so that variables measured on different scales could be evaluated jointly:

$$r_{ij} = \frac{x_{ij}}{\sqrt{\sum_{i=1}^m x_{ij}^2}}$$

where x_{ij} denotes the raw value of the determinant i under criterion j , and r_{ij} is the normalised score. Criteria were oriented so that larger values represent a stronger priority in the TOPSIS framework. Accordingly, significance was treated as a benefit criterion (e.g., using $1 - p$) so that higher values reflect stronger statistical support.

In Step 2, the normalised scores were multiplied by criterion weights to obtain the weighted normalised matrix:

$$v_{ij} = w_j r_{ij}$$

where w_j represents the weight assigned to the criterion j (baseline $w_j = \frac{1}{3}$ for coefficients, hazard ratios, and significance). For brevity, the intermediate normalised matrix is not reported; instead, the weighted normalised matrix, reflecting the outputs from Steps 1 and 2, is presented in Table 4. The weighted ratings indicate that operational and scale-related indicators (notably OSS and GLPA), alongside macro-institutional conditions, exhibit comparatively stronger composite scores, supporting their prioritisation in the subsequent TOPSIS steps.

Table 4: Weighted Normalised Matrix (Normalisation and Weighting Combined)

	X₀	X₁	X₂
OSS	3.08E-08	0.23113	0.000013
LogMktSize-OSS	-4.17E-08	0.009095	0.000003
GLPA	2.68E-08	0.23113	0.00016
LogMktSize-GLPA	-3.75E-08	0.009095	0.000184
LBBGC-LogMktSize	-1.78E-07	0.010992	0.027769
PERRURPOP	-5.52E-07	0.011433	0.197666
EasDoingBus	-1.80E-07	0.011001	0.015012
GDPgrowth	4.31E-09	0.017686	0.264543
FinFreedom	1.22E-09	0.013117	0.034985
IntRates	1.01E-09	0.012843	0.002577
EaseDoingBus-FinFreedom	6.72E-11	0.011724	0.000512
NBFI	-3.15E-09	0.000438	0.02628
NGO	-1.97E-09	0.000062	0.003653

NBFI-Finfreedom	7.76E-10	0.012558	0.044127
NGO-FinFreedom	1.08E-09	0.012937	0.012615
RURPOP	4.19E-16	0.011649	0.007087
NBFI-RURPOP	-2.35E-01	0.011649	0.023581
NGO-RURPOP	-2.31E-01	0.011649	0.030024

Ideal Solutions, Separation Measures and Closeness Coefficients

Step 3 determined the Positive Ideal Solution (A^+) and Negative Ideal Solution (A^-) for each criterion (Table 5). Steps 4 and 5 computed separation measures (S^+ and S^-) and the closeness coefficient (C^*) (Table 6). Larger C^* values indicate determinants that are closer to the ideal solution and therefore more influential in shaping MFI survival.

Table 5: Positive Ideal Solution (PIS) (A^*) and Negative Ideal Solution (NIS) (A^-) Results

Index	X^0	X^1	X^2
A^*	3.08E-08	0.23113	0.264543
A^-	-2.35E-01	0.000062	0.000003

Table 6: Measures and Similarities to PIS and NIS

	S^*	S^-	C^*
OSS	0.264529	0.329703	0.554838
LogMktSize-OSS	0.34537	0.235357	0.40528
GLPA	0.264382	0.329703	0.554976
LogMktSize-GLPA	0.345232	0.235357	0.405376
LBBGC-LogMktSize	0.3233	0.237069	0.423058
PERRURPOP	0.22965	0.307426	0.572407
EasDoingBus	0.33275	0.235916	0.414858
GDPgrowth	0.213444	0.354405	0.624118
FinFreedom	0.316586	0.238129	0.429281
IntRates	0.340992	0.235545	0.408551
EaseDoingBus-FinFreedom	0.343294	0.235473	0.406853
NBFI	0.331644	0.236647	0.416419
NGO	0.348505	0.235212	0.402955
NBFI-Finfreedom	0.310414	0.239613	0.435639
NGO-FinFreedom	0.33328	0.235873	0.414428

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RURPOP	0.338313	0.235575	0.41049
NBFI-RURPOP	0.401928	0.026271	0.061352
NGO-RURPOP	0.395929	0.03239	0.07562

The TOPSIS results show a clear hierarchy of determinants. GDP growth, operational self-sufficiency (OSS), and gross loan portfolio (GLPA) record the highest closeness coefficients, followed by financial freedom, the NBFI–financial freedom interaction, and the loan-balance–size interaction (LBBGC: LogMktSize). Moderate influence is observed for ease of doing business, interest rates, and rural-context indicators. The lowest closeness coefficients are associated with institutional–rural interaction terms (NBFI: RURPOP and NGO: RURPOP), indicating comparatively weaker priority weights in the ranking framework.

4.2.3 Ranking of Determinants and Interpretation

Step 6 ranks the determinants in descending order of C^* (Table 7). The highest-ranked factors are GDP growth, rural population share (PERRURPOP), gross loan portfolio (GLPA), and operational self-sufficiency (OSS). These are followed by NBFI: financial freedom and LBBGC: LogMktSize. Mid-ranked determinants include NBFI, ease of doing business, NGO: financial freedom, rural development context (RURPOP), interest rates, ease of doing business: financial freedom, LogMktSize: GLPA, LogMktSize: OSS, and NGO. The lowest-ranked determinants are the rural interaction terms $NGO \times RURPOP$ and $NBFI \times RURPOP$, indicating comparatively weaker priority in the TOPSIS hierarchy.

Table 7: Ranking of the predictor variables

Rank	Determinant	C^*
1	GDPgrowth	0.624118
2	PERRURPOP	0.572407
3	GLPA	0.554976
4	OSS	0.554838
5	NBFI: FinFreedom	0.435639
6	FinFreedom	0.429281
7	LBBGC: LogMktSize	0.423058
8	NBFI	0.416419
9	EeasDoingBus	0.414858
10	NGO: FinFreedom	0.414428
11	RURPOP	0.410490
12	IntRates	0.408551
13	EaseDoingBus: FinFreedom	0.406853
14	LogMktSize: GLPA	0.405376
15	LogMktSize: OSS	0.405280

16	NGO	0.402955
17	NGO: RURPOP	0.075620
18	NBFI: RURPOP	0.061352

At the lower end of the ranking, institutional–rural interaction terms (NGO: RURPOP and NBFI: RURPOP) and legal status variables (NGO and NBFI) receive relatively lower priority than the leading determinants. This suggests that, while institutional form and rural operating conditions shape how MFIs access resources and manage outreach, the strongest drivers of longevity are those linked to the macroeconomic environment and core financial performance, particularly GDP growth, rural population share, portfolio scale (GLPA), and operational self-sufficiency (OSS).

Figure 2 illustrates the TOPSIS ordering of the ten most influential determinants that critically influence the survival of MFIs in Selected Emerging African Countries.

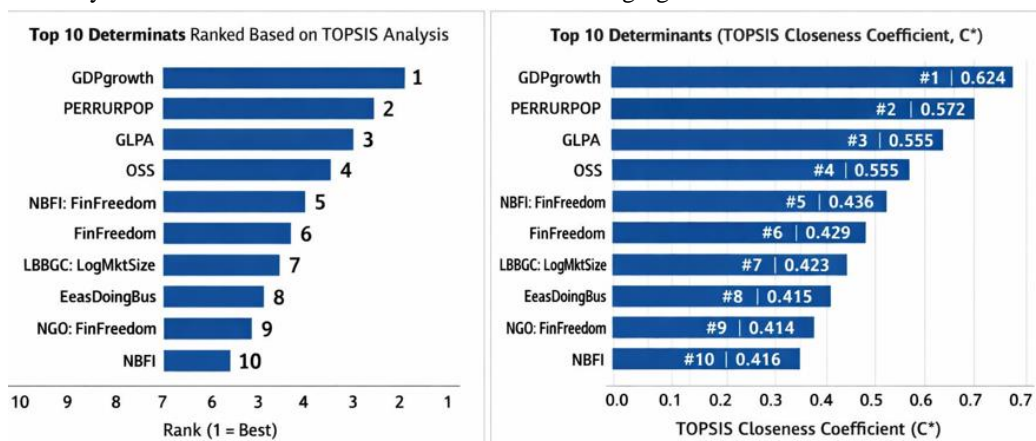


Figure 1: Top Ten Determinants that affect the Survival of MFIs

The overall pattern in Figure 2 suggests that MFI longevity depends on operating in growth-supporting macro environments, achieving sustainable cost recovery and scale, and benefiting from an enabling institutional setting, consistent with evidence that self-sufficiency and scale are central mechanisms of long-term viability (Hermes et al., 2018; Mia et al., 2023).

4.3 Sensitivity and Robustness Results

To confirm the stability of the ranking outcomes, a sensitivity analysis was performed by altering the relative weights assigned to the three criteria: hazard ratio, coefficient, and p-value. The baseline model used equal weights (1/3 each), while four alternative weighting scenarios were tested. Table 8 below shows the sensitivity results.

Table 8: Sensitivity Analysis Results

Scenario	Hazard Ratio	Coefficient (β)	p-Value	Emphasis / Description
1	0.8	0.1	0.1	Strong emphasis on hazard ratio (effect magnitude)
2	0.25	0.35	0.40	Emphasis on statistical significance (p-value)
3	0.10	0.80	0.10	Emphasis on the coefficient (direction and strength)
4	0.40	0.40	0.20	Balanced emphasis between size and direction

For Full Sensitivity Results, see Table 9 in the Appendix

Across all weighting structures, the top-ranked determinants remained broadly stable, confirming the model's robustness to weight variations. Only minor positional shifts occurred among mid-ranked variables, and variation in C^* values remained small. As the coefficient of variation (CV) across all scenarios was below 5 %, as reported by Triantaphyllou and Sanchez (1997), it is well within accepted stability thresholds. Thus, the stability of rankings supports the robustness of the integrated Cox PH-TOPSIS framework for identifying and prioritising survival determinants.

Discussion

The results show that MFI survival in emerging African economies is shaped by the combined influence of macroeconomic conditions, rural operating constraints, and internal performance. This is reflected in the TOPSIS ordering, where GDP growth, rural population share (PERRURPOP), portfolio scale (GLPA), and operational self-sufficiency (OSS) are the top factors affecting MFIs' survival. From a lifecycle theory perspective, this pattern is consistent with the idea that MFIs' vulnerability changes as they are established and grow. Increases in loan portfolio size can strain screening and monitoring, while sustained operational performance becomes essential for growth as MFIs progress toward maturity. Empirically, the importance attached to OSS and GLPA aligns with evidence that financial self-sufficiency and scale-related indicators are central to long-run sustainability (Hermes et al., 2018; Mia et al., 2023), even though some studies warn that expansion can lead to mission drift and risk (Cull et al., 2007; Bhuiyan et al., 2020). The relatively high ranking of GLPA in this study is also consistent with prior findings that scale and lending activity can improve

efficiency, but only when matched with adequate institutional capacity (Hermes et al., 2018; Chikalipah, 2020).

The high ranking of GDP growth and the rural population share indicates that the external environment is a primary constraint on survival. This is supported by the institutional theory, which emphasises that organisational outcomes depend on the enabling or constraining features of the institutional and socio-economic setting. Empirically, this is consistent with the study by Chikalipah (2017), which shows that macroeconomic conditions are materially related to MFI performance and sustainability and with findings that institutions operating in stronger economic environments tend to be more efficient (Anwar, 2020). At the same time, the high priority attached to the rural population share complements empirical work showing that rural service delivery is cost-intensive and can weaken sustainability through higher transaction costs and operational complexity (Lopez & Winkler, 2018). The relatively meaningful placement of ease of doing business also mirrors evidence that regulatory efficiency and reduced compliance burdens can support financial-sector performance by lowering costs and frictions (Farooq et al., 2022).

The results on liberalisation and institutional form support agency theory and show that the different MFIs differ in important ways. The ranking places financial freedom and related interaction terms (NBF: FinFreedom and NGO: FinFreedom) above several institutional-status variables, implying that how managers respond to liberalised conditions may matter as much as formal institutional identity. This aligns with the empirical argument that regulation and institutional form interact with managerial capacity and market conditions rather than producing uniform performance effects (Hartarska & Nadolnyak, 2007). It is also consistent with evidence that NGOs often perform strongly in outreach while NBFs can excel in profitability, reflecting different incentive structures and stakeholder pressures (Mia et al., 2023). Finally, the low priority assigned to the rural interaction terms suggests that rural constraints are widely shared across institutional forms in this study, reinforcing the broader empirical view that rurality generates persistent operational challenges regardless of ownership structure (Lopez & Winkler, 2018).

Overall, the combined Cox PH–TOPSIS approach extends prior empirical work by moving beyond identifying significant correlates of sustainability to prioritising them, showing that in the selected African economies, survival is most strongly shaped by, macroeconomic growth dynamics and rural operating constraints, and the institutional ability to translate outreach scale and cost recovery into sustainable performance, under regulatory conditions that can either enable stability or heighten competitive risk.

Policy and Managerial Implications

The TOPSIS ranking suggests that policy and management actions should prioritise GDP growth, the share of the rural population, operational and portfolio performance (GLPA; OSS), as well as financial freedom and ease of doing business, among other determinants.

Policymakers should pursue macroeconomic stability and inclusive growth to protect borrower incomes and repayment capacity, while reducing rural transaction costs through improved rural infrastructure, connectivity, and basic financial/digital rails that lower delivery costs for MFIs serving the rural population. Managers should strengthen MFI survival prospects by balancing outreach growth with disciplined cost recovery, thus controlled portfolio expansion (GLPA) supported by robust underwriting, monitoring, and provisioning, alongside operational measures that improve OSS through cost control, productivity gains, and prudent revenue diversification, without weakening client protection. Regulators should pair ease-of-doing-business reforms (simplified licensing, reporting, and compliance) with balanced liberalisation: financial freedom can support efficiency but may increase risk in weak oversight settings, so market conduct supervision, consumer protection, and credit-information systems should be strengthened to contain destabilising competition. Finally, although legal status ranks lower, it remains relevant through conditional effects; governance and incentive alignment (agency theory) should be strengthened across institutional types. NBFIs require strong prudential standards (capital, liquidity, risk management), while NGOs benefit from tighter accountability, transparency, and performance monitoring. Development partners can reinforce these priorities through targeted capacity-building in governance, analytics, and risk management.

Conclusion and Future Directions

This study identified and ranked the critical determinants of MFI survival and sustainability in six emerging African economies (South Africa, Kenya, Nigeria, Egypt, Ethiopia, and Morocco) using a two-stage Cox PH–TOPSIS framework on panel data (1999–2019) for 210 MFIs. The Cox PH model was used to identify statistically significant predictors of survival, after which TOPSIS ranked these determinants by relative importance. The ranking shows that survival is most strongly shaped by the macroeconomic and demographic context, with GDP growth and rural population share (PERRURPOP) ranked highest, followed by portfolio scale (GLPA) and operational self-sufficiency (OSS). Regulatory and market-structure factors, particularly financial freedom, ease of doing business, and their interaction effects, also matter, indicating that liberalisation and regulatory efficiency influence MFIs differently across institutional forms, while legal status variables (NGO, NBFi) and rural-interaction terms are comparatively lower priorities.

These findings align with the study’s theoretical framework. The lifecycle theory highlights the stage-dependent trade-offs between growth and risk. On the other hand, institutional theory emphasises the strong influence of the external environment and regulatory quality, while agency theory emphasises the importance of governance and incentive alignment in sustaining OSS and managing portfolio growth under competitive pressures.

The study contributes by translating econometric evidence into an actionable prioritisation of survival determinants, offering a decision-oriented basis for policy and managerial strategy. In practice, the results support policies that promote inclusive macroeconomic stability and reduce rural delivery costs. At the same time, the study advocates for managerial strategies that balance disciplined portfolio expansion with cost recovery and risk controls.

Limitations include coverage of only six countries and a predominantly quantitative focus. Thus, future research should expand the country set and incorporate qualitative dimensions, for example, governance quality, leadership, innovation capability, and client protection. Future studies should also test alternative ranking approaches, such as entropy weighting, fuzzy TOPSIS, and non-linear methods. Overall, the Cox PH–TOPSIS framework demonstrates the value of moving from identification to prioritisation, supporting evidence-based interventions to strengthen MFI resilience and sustain financial inclusion in Africa.

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APPENDIX

Annexure 1: Sensitivity Analysis Results

Table 9: Sensitivity Analysis Results

index	Weights	TOPSIS Score
0	0.33	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EeasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-FinFreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678
1	0.33	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EeasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-FinFreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678
2	0.34	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EeasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-FinFreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678

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index	Weights	TOPSIS Score
0	0.8	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-Finfreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678
1	0.1	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-Finfreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678
2	0.1	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-Finfreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678
index	Weights	TOPSIS Score
0	0.25	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-Finfreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678
1	0.35	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EasDoingBus 0.313116

		GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-Finfreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678
2	0.4	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EeasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-Finfreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678
ind ex	Weig hts	TOPSIS Score
0	0.1	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EeasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-Finfreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678
1	0.1	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EeasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-Finfreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678
2	0.8	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EeasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-Finfreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678

Critical Success Factors for Microfinance Institutions (MFIs) Survival in Emerging African Markets: A TOPSIS-Based Evaluation

index	Weights	TOPSIS Score
0	0.4	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EeasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-FinFreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678
1	0.4	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EeasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-FinFreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678
2	0.2	Factors OSS 0.585796 LogMktSize-OSS 0.296589 GLPA 0.579802 LogMktSize-GLPA 0.295370 LBBGC-LogMktSize 0.320228 PERRURPOP 0.483220 EeasDoingBus 0.313116 GDPgrowth 0.554931 FinFreedom 0.334171 IntRates 0.315388 EaseDoingBus-FinFreedom 0.309816 NBFI 0.142875 NGO 0.007939 NBFI-FinFreedom 0.338215 NGO-FinFreedom 0.320405 RURPOP 0.312284 NBFI-RURPOP 0.320791 NGO-RURPOP 0.324678