

BUILDING COOPERATIVE RESILIENCE:

Lessons from an identity based
decision support tool

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ABBREVIATIONS

CSAT	Customer Satisfaction Survey
Coops	Cooperatives
CES	Customer Effort Score
CRMI	Cooperative Resilience Measurement Index
DCO	District Cooperative/Commercial Officer
EMEA	Agribusiness Market Ecosystem Alliance
ESG	Environmental, Social, and Governance
GIS	Geographic Information Systems
GPS	Global Positioning System
ICT	Information, Communications and Technology
ILO	International Labour Organization
KII	Key Informant Interview
MDAs	Ministries, Departments, Agencies
MSC	Microfinance Support Centre
MTIC	Ministry of Trade, Industry and Cooperatives
MoLG	Ministry of Local Government
NAAC	National Alliance of Agricultural Cooperatives in Uganda
NGOs	Non-Governmental Organisations
NPS	Net Promoter Score
NITA	National Information Technology Authority
PDPO	Personal Data Protection Office
PDMFIS	Parish Development Model Financial Inclusion System
PDMIS	Parish Development Model Information System
PLCs	Private Limited Companies
REC	Research and Ethics Committee
SACCO	Savings & Credit Cooperative Organisation
TUI	The Uhuru Institute for Social Development
UCCFS	Uganda Central Cooperative Financial Services
UMRA	Uganda Microfinance Regulatory Authority
UNCST	Uganda National Council for Science and Technology

EXECUTIVE SUMMARY

Cooperatives are increasingly faced with a complex, uncertain, and challenging landscape. Without preparation, the emerging challenges make them less resilient in supporting their members and the communities they serve. Internally, cooperatives face operational challenges, such as poor decision-making and limited technical capacity to navigate complex challenges. Externally, they operate in an increasingly volatile political and socio-economic environment. They are also faced with an uncertain legal and environmental landscape, which presents both opportunities and disruptions that impact their bottom line. These factors include technological advancements, changing consumer preferences, a service-oriented youth population alongside an aging demographic in the Global North, natural disasters, cyber threats, and capital-intensive market demands. All of these impact cooperative resilience, stability, and survival.

The agribusiness financing, production, and marketing landscape today is being shaped by four trends, namely climate change, innovations in finance, digitalization, and solutions to fragmentation. Across Uganda and the world, the most vulnerable people and systems are observed to be disproportionately excluded. For example, Uganda's smallholder farmers rely on rain-fed agriculture, traditional tools, and low-skilled farming techniques. This makes them unable to compete with their Global North counterparts, who besides enjoying government subsidies and capital injections can perform precision agriculture, round-the-clock irrigation, and monitoring systems to boost their yields.

Beyond these challenges, the broader cooperative movement in Uganda faces critical issues, including disengaged members, weak governance structures, low productivity, information asymmetry, and mission drift. These challenges largely stem from the failure of members, leaders, and partners to align with the expectations outlined in the statement on the cooperative identity, weak operational and policy frameworks. The movement lacks reliable data-driven tools to track adherence to its ethical values, and universal principles. This leads to cooperative members and leaders making less-informed decisions. As

a consequence, cooperatives remain vulnerable to adversity and disruptions and perform less efficiently.

Innovative data tools are crucial for cooperative leaders to capture, track, and utilize essential information about their operations. Such tools would help cooperatives leverage their strong identity by identifying, predicting, planning, and adapting to disruptions, ensuring they remain sustainable and resilient. It was with this understanding that the Uhuru Institute for Social Development (TUI), supported by Busara and the Open Society Foundation London, completed a formative study in 2022 to test the hypothesis that upholding the cooperative identity (values and principles) is a crucial determinant to building their resilience (Amuge et al, 2022). The immediate output of the study was the development of the Cooperative Resilience Measurement Index (CRMI). This comprehensive tool supports resilience measurement, risk assessment, and management across different types of cooperatives. The innovation aimed to foster a cooperative, identity-based resilience management model in Uganda and inspire similar innovations within Africa's cooperative movement and beyond.

The CRMI underwent the first phase of testing with 20 cooperatives in 2021 to ascertain the tool's completeness, accuracy, and relevance to cooperative resilience measurement. We later designed a two-phase mixed-methods 2-year longitudinal study. The study majorly used the Coop Profiler, a software solution that aggregates and analyzes current and historical data on cooperatives, groups, and individual members. This experiential study took a co-creative approach to ensure that the CRMI and Coop Profiler measured what matters to the cooperatives, their members and partners. Moreso, to ensure that they were accessible, inclusive, and offered dynamic capability for systems integration; accuracy with the capacity to promote business awareness; trust and transparency to build cooperative competitiveness and resilience. Broader engagement among cooperative actors was also necessary to ensure national-level acceptance and regional adoption.

The study employed mixed methods, including 109 resilience measurement surveys.¹ We also performed 218 end-user surveys² administered by the

1 A total of 59 surveys in phase 1 and 50 in phase 2 completed by leaders of the sampled cooperatives using www.coopprofiler.com

2 A total of 118 in phase 1 and 100 in phase 2

cooperative leaders. To triangulate findings, seven key informant interviews were conducted, but only in phase 1 with cooperative data aggregators and owners of other cooperatives profiling software.³ At the end of phase 1, we organized a consultative workshop, attended by 79 stakeholders from various government agencies, private sector institutions, development partners, and NGOs that work within the cooperative movement. We sought to evaluate the state of data-driven monitoring, evaluation, performance, and resilience measurement in cooperatives. At the end of phase 2, we held a dissemination workshop, attended by 78 participants, where findings from the first and second phases of the study were discussed and validated. The study also involved a literature review, focused on the state of cooperative data aggregation and sustainable resilience measurement in Uganda and beyond.

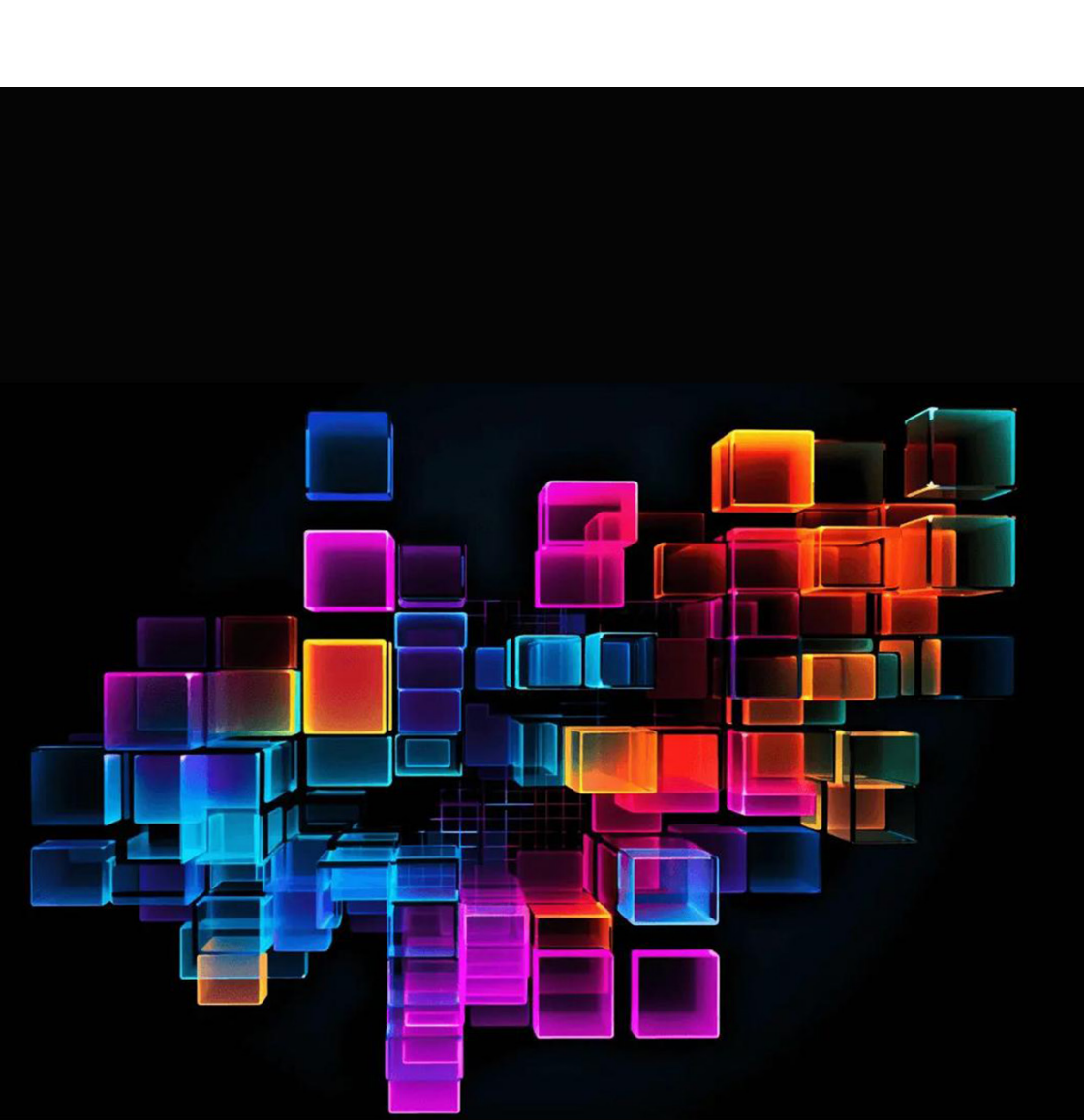
Our longitudinal study has inspired innovation and helped in building a deeper understanding and application of the cooperative identity by harnessing sustainable resilience practices among cooperative actors in Uganda and beyond. Both the Coop Profiler and the CRMI hold potential in building effective data management practices, supporting performance measurement, providing early warning, and forecasting emerging challenges and opportunities. They help in creating effective resilience measurement frameworks that support evidence-based strategies among cooperatives. Testimonies from cooperatives using these tools show that standardized, data-driven solutions are essential for generating uniform statistics that inform planning, implementation, and sustainable resilience management.

Our observations show that the Coop Profiler and the Cooperative Resilience Measurement Index stand out in Uganda for their effectiveness in measuring cooperative performance and resilience. The tools' agility in tracking performance and resilience, through analyzing adherence to cooperative values and principles, along with their collaborative design and ethical, democratic data governance approaches, make them powerful tools for advancing the resilience of the cooperative movement. These innovations come at a crucial time, as stakeholders seek solutions that enable the delivery of relevant, efficient services with measurable and comparable impact. It would be helpful for actors within the cooperative ecosystem to take decisive

³ The data aggregators are cooperatives, government departments, NGOs and private businesses that have developed tools and solutions to improve resilience and performance among cooperatives

steps in engaging with these innovations in ways that ensure equity and value for all. We also make the case that there is an urgent need to provide affordable internet access and ensure that the cost of hardware and software is affordable. This will enable inclusive participation of cooperatives in today's complex and competitive business environment, which is powered by technology and innovations.

The Uhuru Institute continues to collaborate with movement actors to standardize the Coop Profiler and deliver results that promote the efficient and sustainable use of resources, thereby enhancing productivity, competitiveness, and sustainable resilience. TUI is currently working with partners to expand this innovation beyond Uganda. Contextualizing this innovation in other markets will offer insights for our long-term goal to expand globally and to localize the Coop Profiler and the CRMI for uniformity and comparability of cooperative metrics.



BACKGROUND

In today's complex world, communities and businesses face compounded challenges such as natural disasters, political instability, cyber threats, and a capital intensive market. These threats impact their survival, stability, sustainability, and resilience. Advancements in technologies such as cryptocurrencies, social media, e-commerce, and artificial intelligence present opportunities and threats. Cooperatives are uniquely situated, given their proximity to communities and their universal mission to improve the livelihoods and welfare of their members. Based on how well they are prepared, they can either catapult their members into taking up emerging market opportunities or risk sinking under complex threats. To better serve their communities, cooperatives have to build resilience. Resilient individuals, and institutions tend to respond more effectively by adapting when faced with threats (Martin & Giddings, 2020). However, resilience goes beyond preparation, it is the ability of complex systems (including economies) to cope with stress or shock (ibid; Taleb 2012).

Planning for the future is challenging because disruptions are often unpredictable and hard to define. As former U.S. President Dwight D. Eisenhower once observed, "plans are useless, but planning is indispensable." In saying this, Eisenhower was not asking us to abandon plans but instead emphasized the need to prioritize preparation over rigidity to cope with emerging challenges. To prepare effectively, organizations, including cooperatives, must actively identify and anticipate potential disruptions. Planning for disruptions starts with understanding what these occurrences or events might look like.

Disruptions can be categorized into three groups. They include "Black Swan events" that tend to be unprecedented, unimagined, but high-impact. Grey Swan events are high-probability and high-impact events with the potential to evolve into crises—often conceivable but neglected (Pretty, 2021). Grey Swan events are known but unlikely risks, which are often overlooked, leaving organizations unprepared. For example, with the increasing recurrence of incidents like terrorism, financial crises, climate extremes, and tech disruptions, cooperatives and other institutions remain vulnerable due

to their underinvestment in resilience planning. Notably, some challenges are internal, such as governance issues and product failures. With the right planning and resources, they are more predictable and manageable before escalating into crises. “White Swan events” have a reasonable frequency of occurrence and are inherently preventable (Pretty 2021; Resilience First 2021). Compliance failures, which our study found to be common and entrenched within many cooperatives in Uganda, fall into this category. Collectively, these occurrences increasingly pose challenges to the sustainable resilience of businesses. Ultimately, how cooperatives manage disruptions and adversity is crucial to their existence and the success of their members.

The negative impact of these events includes total business failure, disparaging income inequalities, increasing demographic imbalances, insecurity, anger, and individual and collective instability. They may worsen unemployment and food insecurity, negatively impacting the overall wellness of communities. Positive disruptions could enhance the overall quality of life and impact business success, depending on the business’ capacity and capability to adapt to emerging threats and opportunities.

There is enough empirical evidence showing that cooperatives have an innate capability in their fundamental values and principles, which enables them, unlike investor-owned firms, to manage disruption and adversity successfully (Meyer, 2008). An earlier study we conducted in 2022 confirmed that cooperatives innately deploy their self-regulating and stabilizing identity elements and subsystems to cope, adapt, and mitigate the risks and vulnerabilities that threaten their resilience (Amuge et al, 2022). Our findings showed that resilience alone can sometimes sustain harmful systems, underscoring the need to pair it with sustainability for positive, lasting outcomes. The study emphasized that individual member resilience directly influences the strength of the cooperative. Resilient cooperatives need strong membership, effective leadership, awareness, and a deeper understanding of the internal and external operating environment. They also require the capability to manage vulnerabilities and adapt to emerging changes. These factors help cooperatives to adapt and thrive in uncertain times. More importantly, they help them build resilience and contribute to stronger communities.

Globally, there is evidence of cooperatives helping communities survive adversities and disruptions, such as economic downturns and wars. Their

ability to withstand shocks and provide a distribution network guaranteeing food supplies led to their growth during the reconstruction of Germany and Japan after World War II (Birchall & Ketilson, 2009). In Sweden, following the collapse of commodity prices in 1930, cooperative federations assumed control over farm credit and the marketing of dairy, forestry products, eggs, meat, and fruit, opting for self-regulation rather than giving way to state marketing boards (ibid). These cooperatives operated under the strong leadership of the National Union of Swedish Farmers. During the Great Depression of the 1930s, electricity and telecommunication cooperatives helped transform the rural economy of the United States of America (ibid). In the 1960s, New York City seized thousands of landlord-owned properties due to tax defaults. Most landlords abandoned their buildings, triggering a severe housing crisis. Out of this turmoil, a cooperative housing movement emerged, providing stable homes for 27,000 families. Cooperative ownership is now the most common form of apartment ownership in the city (ibid). The U.S. government's bailout of private, investor-owned banks during and after the 2008 financial crisis highlighted the advantages of customer-owned cooperative banks, which are more risk-averse and less driven by the pursuit of investor profits and executive bonuses. In a sense, cooperative banking is straightforward: members (borrowers and savers) can use the cooperative to circulate funds from those who have money to other members who need it. Unlike traditional banks, no external parties extract profit, and interest rates are set to ensure the system benefits all members (ibid).

According to Kyamulesire (1988), Uganda witnessed exponential cooperative growth during the 1970s economic embargo of the Idi Amin regime. Cooperatives were the only refuge for citizens and the government. The Uganda Transport Cooperative Union provided transport for passengers and storage. Cooperative unions enabled safe bulking of agricultural products. In addition, the Cooperative Bank, Uganda Cooperative Savings and Credit Union, and the Cooperative Insurance Company of Uganda enabled access to affordable credit and insurance (ibid). The Uganda Consumer Cooperative Union powered the distribution of consumer items. While the cooperatives grew in numbers, the economic embargo of the 1970s and the numerous insurgencies (1971-2006) reduced Uganda's cooperatives to the extent that most of those that survived are a shadow of their past glory (ibid). In the 1980s, development partners and the government took a deeper interest in cooperatives with mixed results.

These cooperatives, however, rebounded, and in the past two decades, we have experienced their resurgence in Uganda, with over 45,958 registered as of August 2025 (Cooperative Registry by MTIC). Besides older agricultural cooperatives such as the Masaka Cooperative Union, there is a large number of new cooperatives focused on financial services, 69%; comprised of 10,586 Parish Development Model beneficiary SACCOs (Presidential Initiatives Uganda, 2024), 6,952 Emyooga SACCOs,⁴ plus over 14,278 SACCOs falling in neither of the categories (ibid). The majority of financial cooperative members are farmers, highlighting the centrality of agriculture to Uganda's inclusive development agenda. Among non-financial cooperatives, 25% engage in agricultural production and marketing, 3% in multipurpose activities, while the remainder operate across diverse sectors including energy production and distribution, water provision, health care, education, housing, mining, transport, handicrafts, and tourism (ibid).

Despite its inherent capacity for sustainability and resilience, Uganda's cooperative sector faces several challenges, including a fragmented and unclear legal and regulatory framework. Savings and credit cooperatives face market instability, corruption, and poor governance. They are also faced with the threat of climate change, which negatively impacts agricultural productivity, the overall sustainability of smallholder farmer cooperatives, and members' livelihoods. This consequently affects their bottom line. Our study reveals that cooperatives have limited access to tools for accurate data and performance analysis. The resilience and sustainability of cooperatives are evident in their ability to individually and collectively confront and adapt to the threats they face. Sustainable and resilient cooperatives can identify emerging threats and adjust their systems and structures promptly to manage these challenges. In some cases, they can turn these challenges into opportunities. Achieving sustainable resilience requires identifying, measuring, and validating the contributing factors for effective management and broader dissemination (Mendonça, 2016). Our past research shows that tracking adherence to the cooperative values and principles can enable the easy identification, detection of vulnerabilities, and inform strategies for coping, response, and adaptation to disruptions and adversities that cooperatives might experience internally

⁴ Emyooga SACCOs, are financial institutions established under the Presidential Initiative on Wealth and Job Creation (Emyooga), a Ugandan government program. These SACCOs are designed to empower individuals and groups engaged in specialized enterprises by providing access to savings, loans, and other financial services

and externally (Amuge et al, 2022).

When existing procedures no longer apply, cooperative members and leaders adapt or improvise to uphold organizational goals, guided by core values and principles. For instance, driven by solidarity and inter-cooperation, primary cooperatives may form secondary cooperatives to share audit services, digital tools, and supply chain systems. For robust resilience capability to exist, there is a need for an in-depth understanding of the cooperative organizational system, existing strengths, weaknesses, threats, and opportunities, and current sources of resilience, which demand profiling. Resilience profiling demands a dynamic multidimensional measurement and reporting tool that would enable a deeper understanding of the context, theoretical gaps, and the reality. A study covering Brazil, Canada, Colombia, the Philippines, the Russian Federation, and the United Kingdom revealed efforts by governments to collaborate with national statistics organizations in compiling cooperative data (Carini, 2017). In all cases, the definition of cooperative data aligned with key elements of the seven universal cooperative principles. The study recommends that national statistics or research organizations should lead the process to ensure scientific rigor, methodological consistency, and adherence to quality standards. They should not work in isolation; instead, they should form working groups composed of government agencies, cooperative organizations, private sector actors, and academic institutions to provide expertise, assess data relevance, identify gaps, and promote comprehensive analysis. The study advocates for combining methods to enhance data quality. In-depth case studies, supported by statistical registers and sample surveys, are particularly effective for ensuring broad coverage, data robustness, and timely release. Statistical registers offer comprehensive population coverage and enable more frequent and prompt reporting compared to other methods.

Recently, private sector players such as banks, market brokers, researchers, and policymakers have recognized the need to develop statistics on cooperatives that can be compared at both national and international levels. This need was also discussed at the 19th International Conference of Labour Statisticians (ICLS) held in Geneva in October 2013. The conference underscored the importance of having comprehensive and internationally comparable statistics on cooperatives by adopting a resolution to advance work on this topic (ILO, 2013).

The quantification of sustainable resilience status and the role of cooperatives by scholars, policymakers, and society has been insufficient in the past. Even today, knowledge of the diffusion, size, and impact of cooperatives remains fragmented (Birchall & Ketilson, 2009). The government and the private sector could address these issues if a precise platform or data were available showing how cooperatives contribute to socioeconomic welfare. Thus, the need for cooperative businesses and communities to identify the contributing factors to conceive, manage, and realise sustainable resilience. These measures ought to be validated and exercised to entrench best practices (Mendonca, 2008).

Cooperative businesses in Uganda struggle to prioritize and allocate resources for building resilience because there is no generally accepted and standardized national resilience management strategy, policy, or incentives. Most have limited appreciation of the link between resilience and business excellence. Yet, in a competitive environment, businesses that are aware of their strengths and weaknesses are more equipped to be alert, adapt, and find opportunities out of a crisis. The need for robust and reliable statistics draws attention to the debate surrounding the methods and tools used for the collection and analysis of data on cooperatives and, more generally, to the quality of the statistical process, where the term “quality” refers not only to the concept of data accuracy but also to a broader spectrum of issues (OECD, 2011). It is necessary to evaluate several dimensions related to the output/product and the statistical process itself: relevance, accuracy and reliability, timeliness and punctuality, coherence and comparability, and accessibility and clarity (Eurostat, 2014).

In Uganda, there have been very few organized efforts to measure resilience among cooperatives. While some innovations have emerged – mainly from private companies – they mostly focus on measuring the financial performance of Savings & Credit Cooperative Organizations (SACCOs) and agricultural cooperatives, rather than specifically assessing their overall resilience. A handful of cooperatives have also collaborated with development partners to develop tools and systems that enable the aggregation and analysis of data on cooperative members and the financial health of their cooperatives. One of the most notable efforts in that regard is the development of tools to manage Credit Reference Bureaus, Microfinances, SACCO accounts, finances, and, most importantly, the management of basic membership data. These efforts

give a snapshot of the cooperative membership, helping in assessing their credibility among other applications.⁵

Research on the performance of cooperative performance has been fragmented, focused on retrospective assessments using lagging indicators like membership attrition and historical post-harvest losses, often outdated. These studies aim to forecast cooperative trends and manage risks, but typically lack tools that integrate both past and future perspectives. As a result, they overlook the dynamic nature of cooperatives and fail to offer a balanced measurement approach. Another challenge is that cooperative resilience tends to reveal itself during real-time operations, limiting opportunities for controlled studies or even systematic observation. This makes it difficult to analyze resilience proactively or under consistent research conditions. Another gap is that researchers rarely offer recommendations tailored to the unique and evolving needs of individual members and cooperative businesses, insights that would help policymakers to develop relevant guidelines.

Only a handful of data stewards possess unequivocal control over personal and business data in Uganda. As a result, digital innovations and inventions are seen to redirect power and benefits away from the owners of this data (van Geuns, Kilroy, Viswanathan, Baker, & Mallavaram, 2023). They seem not to consider the actual benefits of data aggregation and analysis to the cooperatives and their members (ibid). To advance the cooperative movement, sustainable resilience measurement and development should encourage data-driven governance. The tools should also be dynamic, collaborative, and standardised. Due to the limited attention to the ethical aspects of digitally powered, data-driven performance and resilience measurements, we face the risk of multiple uncoordinated efforts that deny meaningful involvement and ownership by cooperatives and relevant stakeholders in developing and applying resilience strategies and measures. This situation impedes their interest in the long-term adoption and application of these digital innovations.

To address these challenges, we conducted a formative study to test whether upholding cooperative identity is key to resilience (Amuge et al., 2022). The study resulted in the Cooperative Resilience Measurement Index (CRMI), a comprehensive tool for assessing and managing resilience risks across different

⁵ Refer to details in Appendix 1

types of cooperatives. Grounded in cooperative identity, the CRMI tracks adherence to six cooperative values, four ethical values, and seven universal principles, as reflected in individual and organizational behavior, processes, leadership, culture, stakeholder engagement, and community impact. The CRMI was first tested in 2021 with 20 cooperatives to assess its completeness, accuracy, and relevance for measuring resilience. Findings confirmed that cooperatives, by design, possess traits such as collaboration, agility, robustness, and adaptability, attributes that are deeply rooted in their identity and systems. After this initial test, we launched a two-year longitudinal, co-creative study to refine the CRMI and integrate it with the Coop Profiler.⁶ This approach aimed to ensure the tool's accessibility, inclusivity, accuracy, and ability to foster trust, transparency, and competitiveness. The study also emphasized broad stakeholder engagement for national adoption. This research explores the practical application of resilience measurement and management using the CRMI and Coop Profiler in Uganda.

⁶ Coop Profiler is an agile decision support tool made for cooperatives with inbuilt analytics, reports and customer support. The tool also incorporates the Cooperative Resilience Measurement Index- a multi-dimensional resilience measurement framework built on the backbone of cooperative identity; designed to power cooperative resilience and foster sustainable development by identifying business gaps and projecting solutions through collaborative data governance frameworks



Contextual Insights on Cooperative Resilience Measurement

Resilient organizations, including cooperatives, thrive by adapting and evolving when faced with change. That requires avoiding two major pitfalls: imposing rigid top-down prescriptions without much thought or ignoring crucial insights from shareholders, customers, and communities. Instead, there must be meaningful engagement, a bottom-up, front-and-back dialogue among members, owners, customers, and communities, alongside formal structures. The goal of this dialogue is to encourage continuous stakeholder reflection on actual practices, and to align evolving descriptions of practice with formal frameworks.

To stay competitive and resilient, cooperatives must keep a clear distinction between what happens in practice and what is officially endorsed. The goal is not to make these two the same. Trying to do so is both unrealistic and counterproductive. If informal practices are suppressed, they slip out of sight and weaken adaptability; if they're ignored, they can undermine stability. Instead, cooperatives should treat these everyday deviations as lessons. By engaging with them constructively, these deviations become powerful mechanisms for responsiveness and meaningful change to build resilience.

In the context of resilience, Ortiz-de-Mandojana and Bansal (2016) demonstrate that sustainable business practices (those benefiting both society and the environment) enhance an organization's ability to detect and respond to threats. Investing in high-quality, reliable products, for instance, fosters trust-based customer/ member relationships, encouraging open sharing of information. Beyond identifying current risks and changes, organizations must anticipate future developments. Scenario planning, as highlighted by Hillmann et al. (2018), enables organizations to explore even improbable futures and prepare adaptive responses. To put this into perspective, a farmers' cooperative in rural Uganda might start considering the impact of climate change on their members' farming activities and, subsequently, the cooperative's earnings. A Sacco might start considering the impact of cryptocurrencies or how regulatory changes could affect their bottom line and implement measures to manage disruption. This directly contributes to the cooperatives' resilience and sustainability.

A much deeper issue here is how to measure resilience. How do you measure something that seems abstract but which nonetheless has real and tangible outcomes? Mendonca (2008) highlights some challenges in measuring resilience, such as the tendency to prioritize resilience measurement in response to a crisis, the lack of longitudinal data for meaningful comparison, and the limitations of a positivist approach due to the absence of clear definitions or validated indicators. Further, the International Labour Organisation (2022) suggests that statistics on cooperatives can provide evidence of the business's viability to its members, and comparable data can contribute to decent work and sustainable development. In Uganda, this data should have been collected by cooperative unions/ associations/ federations and by government agencies supervising and regulating these cooperatives.

Strong observation and early identification capabilities enable organizations such as cooperatives to detect and respond to changes before their full impact is realized. Weick and Quinn (1999) describe this anticipatory capacity as a key feature of High Reliability Organizations (HROs). These are technologically complex entities that operate in high-risk environments where even minor failures can lead to catastrophic outcomes. These include aviation, nuclear power plants, or chemical manufacturing facilities. In these contexts, failure prevention is a chief concern for leadership and everyone else, and performance reliability is valued as highly as productivity (Robert, 2009).

However, preparation capabilities are not only crucial for HROs but also extend to other organizations, like cooperatives, to build resilience. Preparation means that an organization is equipped to deal with unforeseen adversity and ready to capitalize on unexpected opportunities (Lengnick-Hall et al., 2011). Preparation capabilities can help organizations develop resources necessary in times of crisis, such as implementing suitable recovery plans and building meaningful relationships and mutual understanding with key stakeholders. Crucial insights on resilience can be gained from risk management, emergency planning, and business continuity management. The latter is a recent evolution of risk-based practice (Elliott, Herbane, & Swartz, 2001), providing insights into how organizations can prepare for serious events, such as developing suitable recovery plans for previously identified key business operations (Randeree, Mahal, & Narwani, 2012).

Despite the challenges of navigating an uncertain future or “living forward”, managing system complexities, and responding to emerging dynamics, there is a need to address theoretical models and their applications (Meyer, Gaba, & Colwell, 2005). This can be done by addressing multiple and overlapping systems metrics by conducting longitudinal analysis, situating phenomena in their historical contexts. The investments that businesses make in resilience management have to go beyond taking insurance. They must be as good as buying modern equipment or onboarding skilled staff who can move the industry forward. The second part is anticipation. Anticipation is the first dimension of individual and organizational resilience. It refers to the ability to detect critical developments within an organization or in its environment and to adapt proactively (Somers, 2009; de Oliveira Teixeira & Werther, 2013). Resilience does not imply the ability to prevent every failure or crisis. Often, these crises arrive without warning. However, some organizations are better placed to detect the unexpected events early and respond swiftly, while others adopt a passive “wait and see” approach. Based on studies that include the notion of anticipation in their definition of resilience, it is assumed that it comprises three specific capabilities; the ability to observe internal and external developments, the ability to identify critical developments and potential threats, and as far as possible prepare for unexpected events (Burnard & Bhamra, 2011; Kendra & Wachtendorf, 2003 and Somers, 2009). Observation and identification are related and thus considered together. Scholars such as Ortiz-de-Mandojana & Bansal (2016) agree that those capabilities are crucial to resilience. They argue that organizations must recognize early signals of crisis to respond quickly to avoid escalation.

Others, such as Madni and Jackson (2009), argue that businesses need anticipation capabilities to avoid threatening situations or to minimize potential negative consequences. They define anticipation as “the ability to ‘look down the line’ to determine how the environment is expected to change to make decisions and take actions in the present that promote desirable outcomes and circumvent disruptions in the future. Preparation does not necessarily mean planning for the unexpected. It means that organizations prepare without knowing if, when, or where an unexpected event will occur in the future. Such a preparation capability may be developed by expanding general knowledge and technical capabilities, and generalized command over resources (Aldunce, Beilin, Handmer, & Howden, 2014). In summary,

anticipation capabilities build a resilience potential which can be defined as “resilience that is not presently evident or realized” Somers (2009). Anticipation capabilities build the foundation for an effective response to critical situations and thus realize resilience; however, they provide control only to a limited extent, and important actions, adjustments, and decisions must be undertaken in real time. Thus, organizations also need to develop coping capabilities.

According to Mitroff (2005, p. 376), smart organizations practice resilience management consistently, both in times of stability and during crises. Consequently they experience fewer crises and are more competitive. Mitroff, recognized worldwide as an authority in crisis management, has developed a plan that extends beyond “disaster preparedness” to help businesses become accustomed to working in the face of unsettling facts. In an age of terror, cyberattacks, large-scale corporate fraud, and more, crises are no longer a question of “if”, but “when”. No organization, regardless of its size, industry, or location, is immune to this reality. Mitroff emphasizes the need for effective planning and execution, including meticulous tracking of all aspects of the business. He argues that while resilience management has gained renewed urgency in today’s turbulent times, the need for careful planning long predates recent crises. Mitroff emphasizes that contingency plans are only as effective as the people responsible for executing them. He outlines seven core competencies that every organization must develop to manage emerging crises effectively. These are outlined below.

- I Right heart (emotional IQ):** By accepting a crisis as inevitable, organizations can process much of the shock and grief beforehand, and avoid making the effects of the crisis even worse through unconstructive responses.
- II Right thinking (creative IQ):** “Crises don’t care how the world is organized”, thus out-of-the-box thinking is essential.
- III Right social and political IQ:** Understanding that organizations are vulnerable not only to industry-specific risks but also to broader, complex challenges affecting all organizations is essential for building true resilience.
- IV Right integration (integrative IQ):** Crises are perceived differently by various stakeholders and are never straightforward problems with simple solutions. It is crucial to identify and reconcile these perspectives in advance for clear, coordinated responses when crises occur.
- V Right technical IQ:** “Think like a controlled paranoid” to uncover ways in which malicious forces could cause a crisis in one’s business. Question every assumption about what is “normal,” “impossible,” or “absurd.”
- VI Right aesthetic IQ:** Reconsider the formal structure of the organization (typically designed to address problems as they emerge) and instead adopt a model where crisis management is treated as a core discipline, equal in importance to functions like finance.
- VII Spiritual IQ:** Reject the notion that individuals’ physical, mental, and emotional selves operate in isolation. Recognize that crises often prompt deep reflection on the meaning of work and life. Establish in advance why the organization’s mission matters personally and collectively to continue to inspire and sustain people through challenging times.

Box 1: Essential lessons to help cooperatives and other organizations survive a crisis

Adapted from Mitroff, I. I. (2005). Why some companies emerge stronger and better from a crisis: 7 essential lessons for surviving disaster. AMACOM/American Management Association.

Through capacity strengthening, formal training, and simulation practices, cooperative leaders can ensure that the benefits and objectives of such plans are achieved (Gibb & Buchanan, 2006). Such practices can help organization members learn complex procedures and develop both personal and collective action guidelines. For example, rural committee members of a cooperative union may struggle to maintain accurate records. Through targeted training,

they can acquire skills to document member information, savings, and other crucial data. During our study, we trained cooperative members on integrating digital tools like the Coop Profiler to collate and process their data. While some cooperative leaders struggled with basic concepts, most (younger, tech-savvy members) gained these skills through regular interaction with the devices and with the platform. Other members relied on the support of their kin.

The high-reliability organizational theory forms the basis for cooperative organizational resilience tracking, audits, and measurement. Just like HRO requirements, the cooperative values and principles that constitute the cooperative identity enable standardisation, monitoring, prevention, detection, mitigation, and communication of the effects of failure and improvisation to maximize efficiency of the cooperative identity system.



Harnessing digitally powered, data-driven, decision-support tools: Snapshot of Coop-Profiler and the Cooperative Resilience Measurement Index (CRMI)

- **The Coop Profiler** is a web and mobile-based software that enables cooperatives in Uganda and South Africa to collect, analyse data, measure, and report on the status of their businesses and members.⁷ The software supports all types of cooperative enterprises, including financial, agricultural, industrial, housing, and manufacturing, as well as government agencies, private sector actors (e.g., banks and off-takers), and development partners. Users can assess and rank data subjects across multiple parameters, such as demographic data, business turnover, capital adequacy, governance, social solidarity, and others, enabling users to design targeted and effective strategies. Cooperatives can capture and update data on individual members, groups, and the status of the cooperative at any time, with full updates conducted annually. The data feeds into a customized database and dashboard, which the cooperative can access independently. The cooperative may also grant access (either restricted or unrestricted) to selected partners, based on mutually agreed and documented terms. This gives cooperatives ownership of the data, and an upper hand in developing new business models with these partners.

Coop Profiler is so far being used by 42 cooperatives in Uganda and South Africa. Initial feedback shows agility, credibility, and reliability in helping cooperatives collect and process members' data. Coop Profiler is one of several tools aiming to support evidence-based decision-making within the cooperative sector. More tools are outlined in Appendix 1. However, their impact is limited by fragmentation as they operate in isolation, making it difficult to share and analyze data across systems.

It stands out as a comprehensive solution that enables cooperatives and their partners to aggregate, store, and analyze cooperative data—processing this data to support collaborative decision-making while ensuring strict adherence to data privacy, access control, and authentication protocols. Its mobile application offers offline data

⁷ Available at www.coopprofiler.com

collection capabilities, preventing data loss and minimizing user fatigue during connectivity disruptions. The tool fosters collaboration, promotes data comparability, supports compliance monitoring, enables performance measurement, and streamlines information sharing among stakeholders. This reduces duplication of efforts and enhances sector-wide efficiency. Coop Profiler is designed with the needs of Micro, Small, and Medium-sized cooperatives in mind, offering affordable and flexible pricing plans for cooperatives and their members. TUI offers a revenue-sharing incentive to encourage use. Cooperatives receive a 5% loyalty bonus for each of the over 100 individual members profiled, based on the user fees collected.

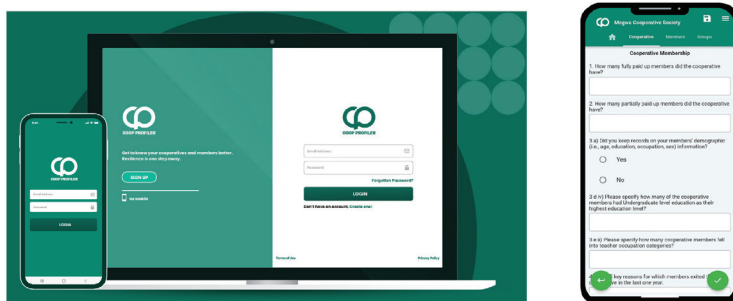


Figure 1: Screenshot of the Coop Profiler

- **The Cooperative Resilience Measurement Index (CRMI)** is hosted within the Coop Profiler and is an index used to assess cooperatives' adherence to core values and principles of the cooperatives and their impact on the community.⁸ The tool is agile and multi-dimensional, designed to assess resilience through the lens of the statement on the cooperative identity and tracks how well cooperatives and their members adhere to cooperative values and the seven universally recognized cooperative principles. Adherence is reflected in individual and

⁸ Cooperative values include self-help, self-responsibility, democracy, equality, equity, and solidarity. Members also uphold ethical values of honesty, openness, social responsibility, and caring for others. These values are put into practice through seven principles: voluntary and open membership; democratic member control; member economic participation; autonomy and independence; education, training, and information; cooperation among cooperatives; and concern for community.

organizational behavior, governance processes, membership culture, and stakeholder engagement.

The index promotes standardization and consistency in cooperative and membership data, enabling reliable performance tracking and resilience assessment. The tool fosters compliance, comparability, and collaboration, aligned with cooperative statistical guidelines, to support an integrated and functional cooperative sector ecosystem that is powered by innovation. CRMI was conceptualised and developed through a strategic partnership between the Uhuru Institute for Social Development (TUI), Busara, and the Open Society Foundation London.

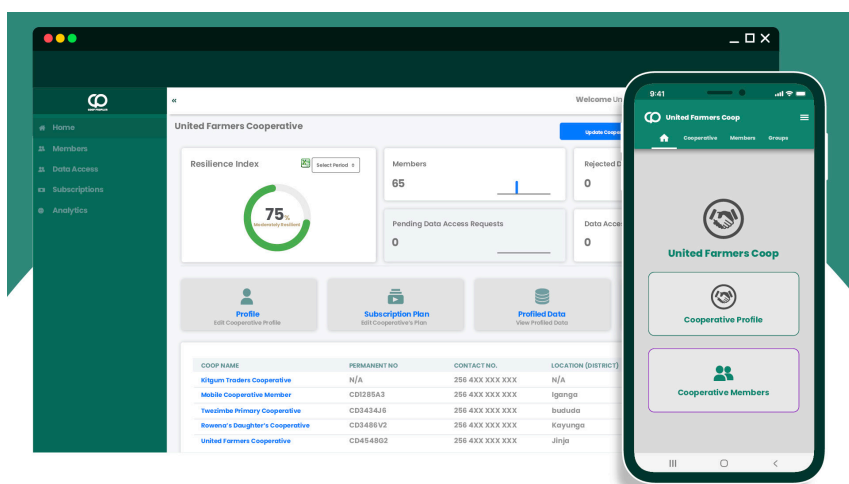


Figure 2: Screenshot of the CRMI

Study methodology

We applied mixed-methods and a participatory approach directly involving cooperative leaders as both data subjects and enumerators. This deepened engagement with the Coop Profiler and CRMI, making the tools more accessible through an awareness-driven rollout.

We trained 62 cooperatives on basic research skills and ethics, survey interpretation, and the application of the Coop Profiler and the CRMI. Following the training, 59 cooperatives actively participated in data enumeration,

with their leaders completing resilience measurement surveys through the Coop Profiler platform (www.coopprofiler.com). In total, cooperative leaders completed 109 resilience measurement surveys using the Coop Profiler in two phases: 59 in the first phase and 50 in the second. The same leaders completed 218 end-user surveys; 118 in Phase 1 and 100 in Phase 2, using Google Forms.

During Phase 1, the study team conducted seven key informant interviews with cooperative data aggregators and owners of cooperative profiling software. This phase concluded with a consultative workshop attended by 79 stakeholders from government, private sector institutions, development partners, and NGOs working with and for cooperatives. This allowed participants to assess the current landscape of data-driven monitoring, evaluation, performance, and resilience measurement within the cooperative sector. At the end of Phase 2, we organized a dissemination meeting with 78 participants, where we shared findings from both phases of the study. Cooperative representatives shared their user experiences, while stakeholders contributed insights on the future of identity-based cooperative resilience measurement in Uganda. The study also included a desk review of literature on cooperative data aggregation and sustainable resilience measurement in Uganda and globally.

Sampling

To enable hands-on interaction with the Coop Profiler and the CRMI, the study adopted a co-design approach, engaging data subjects as both participants and enumerators. For qualitative data collection, we used purposive sampling to identify key informants and workshop participants who were best positioned to provide insights on the variables under investigation. For the cooperative selection, we employed non-probability sampling, guided by the availability of cooperative leaders, their digital literacy, and their commitment to engage in the study. The study participants included cooperatives represented by their leaders, developers, and owners of cooperative databases and performance measurement tools, as well as key cooperative sector stakeholders (government agencies, private sector players, and development partners).

For the quantitative part of the study, we focused on cooperatives, each represented by an authorized leader, typically a committee member or a member of the management team. These leaders self-administered the resilience measurement survey, which was designed to support end-user

testing of the CRMI and the Coop Profiler. They also completed end-user feedback surveys covering the following results components:

- i) Customer/User Effort Score (CES),
- ii) Net Promoter Score (NPS), and
- iii) Customer/User Satisfaction Score.

For our inclusion and exclusion criteria, we defined eligible respondents as leaders actively involved in the cooperative's leadership, such as the chairperson, treasurer, or secretary. They had to have served in their role for at least 3 years for informed and experience-based responses. In determining the required sample size, we used the following formula:

Necessary Sample Size = $(Z\text{-score})^2 * \text{StdDev} * (1 - \text{StdDev}) / (\text{margin of error})^2$

Using a Z-score of 1, a standard deviation of 0.5, and a margin of error of $\pm 5\%$, the calculation yielded:

$$(1)^2 * 0.5 * (1 - 0.5) / (0.05)^2 = 50$$

This formula, adapted from Qualtrics, was appropriate given the large accessible population of 39,000 registered cooperatives in Uganda at the time. It allowed us to define the study's confidence level and margin of error. To account for potential attrition, we engaged 59 cooperatives in phase 1, exceeding our minimum target of 50. Fifty-nine cooperatives participated in the first phase, while 51 participated in the second. For a representative sample, we stratified participating cooperatives by class (primary, secondary, tertiary), ethnographic region, and length of existence. This approach enabled us to explore how these factors might influence cooperative resilience. Of those surveyed, 84.7% were primary cooperatives, 13.6% were secondary, and 1.7% were tertiary.

Cooperative Level	Number of cooperatives 2023	Number of cooperatives 2024
Primary Cooperative	50	38
Secondary Cooperative	8	9
Tertiary Cooperative	1	2

Table 1: Distribution of participating cooperatives by class

Participants came from 24 districts across all regions. Buganda had the highest representation, while the Ankole region had the least.

Regions	# of co-ops per region in Phase 1 of the study	# of co-ops per region in Phase 2 of the study	Average % participation of co-ops in both phases per region
Acholi	7	6	12%
Ankole	1	1	2%
Buganda	8	8	15%
Bugisu	2	2	3%
Bunyoro	7	6	12%
Busoga	4	3	6%
Kigezi	2	1	4%
Lango	5	1	5%
Rwenzori	7	6	12%
Sebei	3	3	6%
Teso	4	5	8%
West Nile	5	5	9%
Bukedi	4	3	6%

Table 2: Regional distribution of participating cooperatives

In terms of longevity, the cooperatives in the study had been operating for between 2 and 73 years. The majority of primary cooperatives were relatively young, established within the past 3 years, while the agricultural unions emerged as the longest-standing institutions.

Age Group	# of participating Co-ops in Phase 1	# of validated Co-ops in Phase 1	# of participating Co-ops in Phase 2	# of validated Co-ops in Phase 2
0-5	35	29	27	26
6 - 10	14	11	12	12
11- 14	4	3	4	3
15 - 25	2	2	3	3
26 - 35	2	2	3	3
61≥	2	0	2	2
Total	59	47	51	49

Table 3: Years of operation of cooperatives participating in the study

Agricultural production and marketing cooperatives formed the most significant portion of our sample, aligning with the study’s focus on agribusiness cooperatives as the target population. This distribution is demonstrated in the chart below.

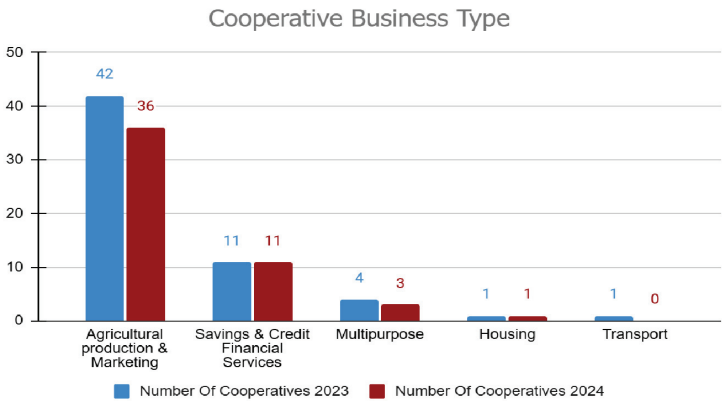


Chart 1: Distribution of cooperatives by business type

Piloting

We conducted a pilot exercise following standard data collection protocols, including identifying a sample of participants, obtaining informed consent, and administering both the survey questionnaire and key informant interviews. The pilot study involved five cooperatives and one key informant, allowing us to assess the feasibility of the proposed data collection processes and the quality of the anticipated data.

The pilot study helped determine whether the survey questions were clear, accurate, and aligned with the study objectives. It also assessed whether participants could easily understand the questions and provide meaningful responses. The pilot further evaluated the enumerators' familiarity with research ethics and their capacity to administer the tools effectively. The pilot exercise allowed us to verify whether the planned processes would yield reliable measurements of the intended study outcomes. Based on insights from the pre-test, the study team revised both the Coop Profiler questionnaire and related procedures before launching the full-scale implementation.

Data cleaning

The study team synthesized the data collected during both phases of the study and prepared preliminary reports. As part of the quality assurance process, the team conducted thorough verification to assess the accuracy, consistency, and validity of the datasets. During this process, several inconsistencies were identified in the responses to the Cooperative Resilience Measurement Survey, along with instances where cooperatives failed to provide supporting documentation to validate their responses. Some cooperatives were consequently excluded from the final analysis.

Validation was further reinforced through two key stakeholder engagements. The first was a co-design workshop held on December 7, 2023, which reviewed and validated findings from the first phase. The second was the dissemination meeting, where the comprehensive report of the two-year study was presented. During this event, cooperative leaders who participated in both phases shared testimonials, providing an additional layer of validation for findings.

Analysis

We applied the PESTLE framework,⁹ to analyse the context, opportunities, and threats related to standardized cooperative data aggregation and resilience measurement, drawing on insights from key informant interviews and the consultative workshop.

For the quantitative analysis, we applied the CRMI to assess the resilience levels of each participating cooperative. CRMI employs a systems-based approach, recognizing cooperatives as organizational entities shaped by a distinct culture and identity that influence their internal operations and interactions with the broader context. This framework positions sustainable resilience as an inherent characteristic of cooperatives, cultivated through adherence to their universally accepted definition, core values, and guiding principles. Using the CRMI, we assessed how these foundational elements enable cooperatives to anticipate, respond to, and recover from disruptions while maintaining long-term viability. Cooperative identity underpins effective defense and adaptation mechanisms, and the CRMI measures the extent to which cooperatives uphold the core values and universal principles, reflecting these in their operations, organizational behavior, processes, culture, and interactions with the broader business environment.

The contribution of each cooperative value and principle to the overall resilience score is calculated by multiplying the weight assigned to its respective category by the score of the individual variable within that category. This approach ensures that each component contributes proportionally to the final index based on its assigned importance.

The following equation represents the unweighted structure of the index:

$$\sum_{i=1}^6 T_i + \sum_{j=1}^4 E_j + \sum_{k=1}^7 P_k = 1$$

T_i represents the six variables associated with traditional cooperative values, E_j denotes the four variables related to ethical cooperative values, and P_k

⁹ PESTLE is an acronym for Political, Economic, Social, Technological, Legal, and Environment

refers to the seven variables that capture the universal cooperative principles. Each of these variables contributes to the overall resilience index based on its category and assigned weight and normalized so that their combined sum equals 1, providing a standardized basis for weighting and aggregation in the resilience measurement model. Traditional cooperative values (T), were assigned a weight of 50% (0.5), while ethical values and cooperative principles were weighted at 20% (0.2) and 30% (0.3), respectively. They are based on the rationale that the attitudes, behaviors, and actions of cooperative members, leaders, and managers shape the cooperative’s institutional character that in turn, influence the cooperative system’s capacity to respond effectively to external environmental conditions.

Traditional Values (50%)	Ethical Values (20%)	Principles (30%)
Self-responsibility (10%)	Honesty (7%)	Open and Voluntary Membership (4.2%)
Self-help (10%)	Openness (4%)	Member Democratic Control (5.4%)
Equity (7%)	Social Responsibility (6%)	Member Economic Participation (4.2%)
Equality (7%)	Caring for Others (3%)	Autonomy and Independence (3.6%)
Solidarity (9%)		Training, Education, and Information (5.4%)
Democracy (7%)		Cooperation among Cooperatives (3.6%)
		Concern for Community (3.6%)

Table 4: The cooperative resilience weighted index

When data is entered and validated in the Coop Profiler, the tool automatically analyzes each cooperative’s scores against the Cooperative Resilience Measurement Index. The resulting scores are then categorized based on the

following resilience scale.¹⁰

- 81–100%: Very resilient
- 61–80%: Resilient
- 41–60%: Moderately resilient
- 21–40%: Low resilience
- ≤20%: Very low resilience

The CRMI scores show the extent to which each cooperative performs across resilience indicators: collaboration, market position, security, redundancy, awareness/sensitivity, robustness, agility, science, innovation and technology development, adaptability, risk management, and sustainability. These indicators also help us to weigh the preparedness of cooperatives against potential threats in the business environment.

Other metrics

To deepen insights into the relevance and viability of the Coop Profiler and CRMI, we further assessed user experience and feasibility through the following measures:

- i. **Customer Effort Score (CES):** To measure how easily users navigated the Coop Profiler and CRMI, completed surveys, and interacted with support teams. This helped us pinpoint friction points and design solutions to reduce effort, improve satisfaction, and lower churn risk. Our profiling was as follows:

90–100%	Users experienced low effort and showed strong loyalty
70–80%	Users remain neutral but may disengage over time
0–60%	Users faced high effort and showed low loyalty

¹⁰ Initially, the Coop Profiler used a 5 point scale with percentage points and an explanation, as noted above. In the most recent update, resilience is classified into 7 levels based on percentage scores. Scores of 90–100% (A+) are classified as Ultra Resilient, reflecting exceptional adaptability and recovery. Scores of 80–89% (A-) are classified as Very Resilient, indicating strong capacity to withstand challenges. Scores of 70–79% (B+) are classified as Resilient, demonstrating consistent though less exceptional recovery ability. Scores of 60–69% (B-) are classified as Moderately Resilient, denoting adequate but limited adaptability. Scores of 50–59% (C+) are classified as Mildly Resilient, suggesting partial capacity with notable vulnerabilities. Scores of 40–49% (C) are classified as Low Resilience, reflecting restricted ability to cope and recover. Finally, scores below 40% (D) are classified as Very Low Resilience, denoting severe limitations in withstanding or overcoming stressors.

- ii. **Net Promoter Score (NPS):** We applied the NPS to gauge how likely users were to recommend the Coop Profiler and its developer. We assessed overall perception after tool use, training, and customer support. The ratings were as follows:

90–100%	Promoters	likely to recommend
70–80%	Passives	neutral but unenthusiastic
0–60%	Detractors	dissatisfied and unlikely to recommend

- iii. **Customer Satisfaction (CSAT):** We used the CSAT to capture user satisfaction and identify where the tool or support needed improvement. Scores:

9–10	Satisfied
7–8	Neutral
0–6	Dissatisfied

Study challenges

While the longitudinal study was a success, the research team encountered a few challenges. These included knowledge gaps, with some participants showing limited understanding of the statement on the cooperative identity and its application, which slowed data collection. The geographic distribution of the cooperatives also posed a logistical and navigational challenge for field work. There were a few challenges with data accuracy, with some audit reports that did not align with international standards, compromising reliability. In some cases, audit reports from the cooperatives applied company standards, hindering the analysis of key financial indicators and pointing to the need for standardized, cooperative-specific audits. Finally, low digital literacy and poor internet access excluded some participants or increased their financial burden, limiting their participation.

FINDINGS

Our study revealed that cooperative resilience management requires a holistic approach beyond traditional financial metrics. There is strong evidence that upholding the cooperative identity, including values and universal principles, can nurture cooperative resilience and sustainability. Cooperative leaders in our study agreed that, for cooperatives to be sustainable, members must feel they are getting value, which can only be achieved by leaders cultivating a close relationship with them. In addition, the cooperative sector collects a lot of data from members, but this data is held in silos, making it difficult to make comparisons and accurate analyses. We also found that data aggregation and resilience measurement tools are not standardized, making it difficult to track the application of the cooperative values and resilience. Although there exists a supervisory framework for cooperatives in Uganda, rules and regulations on data management in the country do not seem to be followed. A more precise policy alignment would help in advancing the adoption of digital tools among these cooperatives. Our study further confirms that digitisation increases productivity and efficiency by streamlining operations and enhancing future planning. Cooperatives reduce decision-making time and accelerate routine tasks such as generating beneficial owner registers, generating comparative reports, and processing member transactions etc. They achieve greater efficiency, which enables cooperatives to comply with regulatory requirements under the Tier 4 Microfinance and Money Lenders Act 2016, the Cooperative Societies Act Cap 107, and other related laws. More detailed findings are below.

i) Functional support frameworks can improve cooperative resilience

The existence of the right and functional support frameworks can strengthen cooperatives resilience by helping organizations assess and build their capabilities in a structured approach. Paired with the right support, cooperatives and their members can adopt systems that drive their long-term resilience. Achieving this requires targeted incentives such as free trial periods to run softwares, capacity strengthening and personalized training to

encourage uptake and long-term use. The findings from our research showed that most cooperatives demonstrated measurable improvement throughout the course of the 2-year study. Between 2023 and 2024, 71% of low resilience cooperatives moved to moderate, while 29% of those in the moderate category advanced to resilient. Overall, the proportion of resilient cooperatives grew by 48%, showing the impact of sustained capacity building and targeted support.

Looking at resilience magnitude across different business types, we found that Savings and Credit Cooperatives (SACCOs) accounted for the most significant proportion within the ‘resilient’ category. These cooperatives demonstrated a long-term approach to business development, underpinned by well-established organizational systems and strong partnerships, which power their resilience. They consistently met compliance requirements, including timely tax payments, filing annual returns with the Department of Cooperatives, and adherence to product standardization protocols. This combination of strategic focus, operational maturity, and regulatory compliance contributed significantly to their elevated resilience scores. We further found that agricultural cooperatives were also quite ‘resilient’ – particularly those that were engaged in perennial crops like coffee and cocoa, compared to those involved in seasonal crops, which were less resilient.¹¹

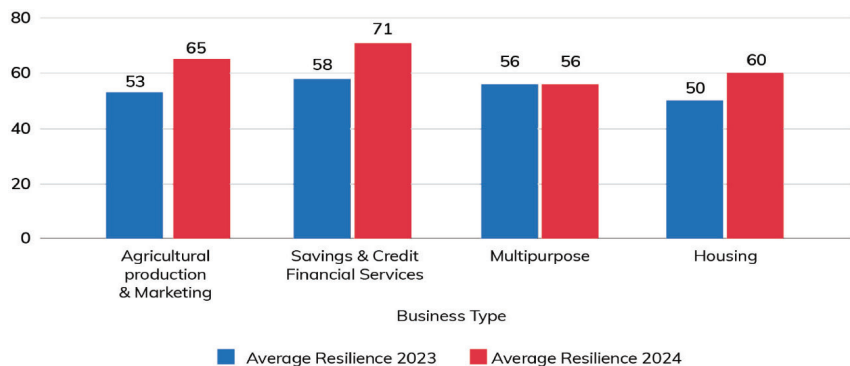


Chart 2: Average cooperative resilience in 2023 and 2024

Across all regions, resilience levels improved over the two years. Notable

¹¹ 68% of the cooperatives growing perennial crops were found to be resilient compared to 38% of the cooperatives involved with perennial crops which were found to be resilient

increases were observed in Lango (from 66% to 80%), Kigezi (68% to 77%), and Bugisu (51% to 76%), indicating significant strengthening of cooperative systems in those areas. Regions such as Sebei and Teso, which initially had some of the lowest scores in 2023 (39 and 45, respectively), also demonstrated marked progress, reaching 68% and 62% in 2024. In the Rwenzori region, cooperatives moved into the very resilient category by 11%. The majority of these cooperatives were engaged in cocoa bulking and marketing, and their rapid adaptation was strongly influenced by strict standards now aligned with the ESG (Environmental, Social, and Governance) framework required in the sector. This alignment accelerated their uptake of recommendations from the resilience survey, reinforcing the link between market compliance and institutional transformation. Overall, findings suggest that targeted interventions and continuous engagement have contributed to measurable resilience gains.

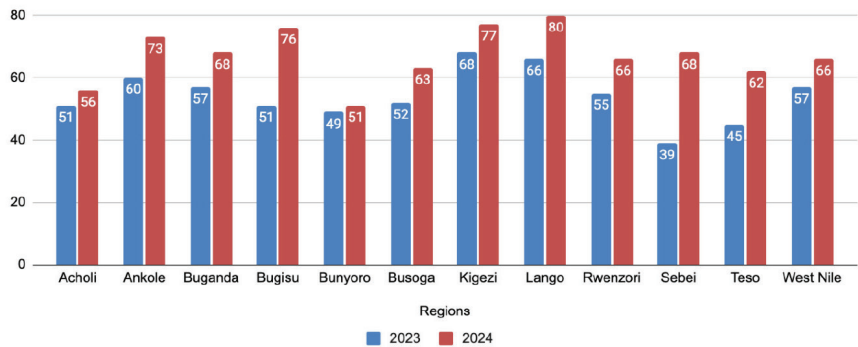


Chart 3: Cooperative resilience across regions in 2023 and 2024

The study underscores that, regardless of a cooperative’s years of operation, anchoring its foundation in the values and principles, combined with sustained efforts in professionalism, good governance, innovation, and avoiding mission drift, are key to achieving sustainable resilience. We found that resilience is driven more by early investment in systems and governance.. Nonetheless, resilience seems to grow over the years as a cooperative builds these systems. However, over a more extended period, a cooperative needs to remain true to its mission while maintaining a balance between responding to new opportunities and challenges in the operating environment.

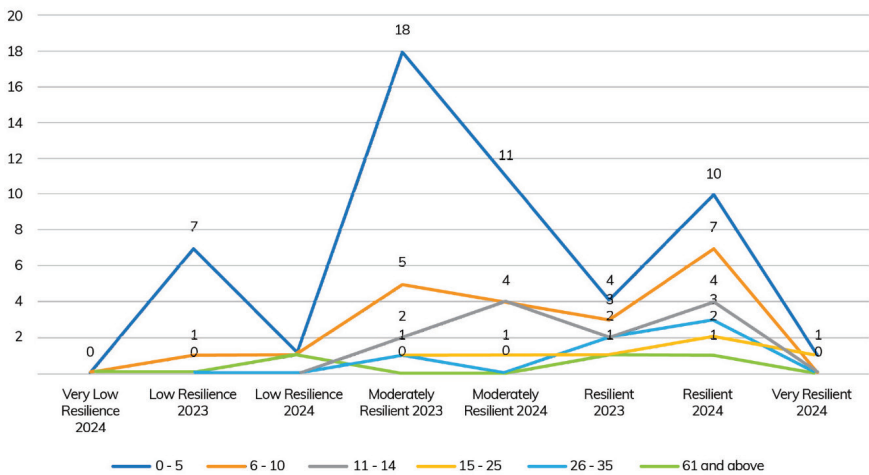


Chart 4: Resilience based on the age of the cooperative

ii) Sustained training, practice, measurement, and knowledge sharing strengthens cooperatives' commitment to their values and principles

Our study recorded a general improvement in how cooperatives upheld core values and principles, reflected in strengthened business processes, systems, relationships, and leadership behavior. This progress is evident when we compare the resilience scores in 2023 and 2024. The most significant gains were in social responsibility (rising from 58% to 87%) and voluntary and open membership (33% to 85%), following targeted training provided to cooperative leaders on applying the statement on the cooperative identity. Moderate improvements were noted in openness, economic participation, and democratic membership, while values like equity and caring for others showed marginal growth, indicating the need for sustained effort to drive deeper transformation.

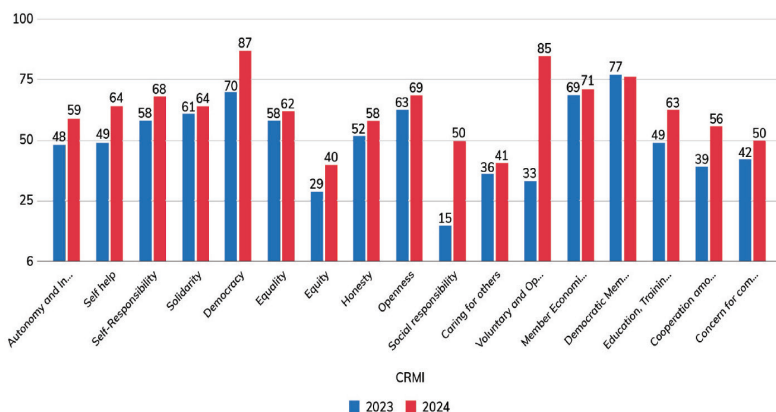


Chart 5: Resilience scores per cooperative value and principle in 2023 and 2024

iii) Improved Coop Profiler's customer satisfaction ratings highlight the tool's advantage in powering resilience measurement

The Coop Profiler tool demonstrates strong performance in customer satisfaction, particularly in usability and user advocacy, though opportunities for improvement exist in helpdesk responsiveness. More users in 2024 reported increased ease in operating devices such as computers, phones, and tablets, with 83% rating satisfaction in the highest range (90–100), up from 81% in 2023. However, helpdesk responsiveness declined, with fewer top-tier ratings (87% vs. 89%) and a significant drop in average score (70 vs. 87).

On a positive note, users were more likely to recommend Coop Profiler in 2024, with 89% providing top-tier ratings, up from 87% in 2023. The average score for this metric improved from 89% to 92%, reinforcing the tool's strong reputation despite the dip in helpdesk satisfaction. TUI is now focused on addressing support performance that enhances user uptake and retention as plans gain momentum to expand the tool beyond Uganda.

Question code	0-60				70-80				90-100				Average weighted scores	
Year	2023		2024		2023		2024		2023		2024		2023	2024
Ease with using computers, phones, or tablets (%)	0	0	8	16	22	44	23	46	22	50	23	46	81	83
Helpdesk support & responsiveness (%)	0	0	2	4	17	34	13	26	34	67	35	70	89	87
Likelihood to recommend Coop Profiler (%)	0	0	1	2	22	44	26	52	29	57	23	52	87	89

Table 5: Coop Profiler’s customer satisfaction ratings in 2023 and 2024

iv) CRMI ratings show an improvement in user experience

CRMI users in our study reported a positive overall perception of the CRMI’s quality, with the majority assigning high scores in the 9–10 range. A small proportion of respondents rated it between 0–6 (detractor category), which marginally lowered the overall average. Satisfaction scores increased slightly from 79% in 2023 to 80% in 2024, indicating a modest improvement in user satisfaction with the CRMI tool over time.

Summary														
Range	0-6				7-8				9-10				Weighted average score	
Year	2023		2024		2023		2024		2023		2024		2023	2024
Perception of CRMI quality (%)	2	4	3	6	34	67	29	58	15	29	18	36	79	80

Table 6: CRMIs customer perception ratings in 2023 and 2024

v) Data-driven tools for tracking and managing cooperative resilience are growing, but remain fragmented amidst weak coordination

Over the past decade, Uganda has experienced significant growth in digitally powered tools across sectors such as banking and the wider digital economy. Within the cooperative sector, our review indicates rising demand for these tools, with supply largely driven by government agencies, private actors, and non-governmental organizations. A comprehensive list of selected innovations is provided in Annex 1. They include tools such as the digital cooperatives registry developed by the Department of Cooperative Development of the Ministry of Trade Industry, and Cooperatives.

The Cooperatives Registration Management Information System (CRIMS), as it is known, is a web-based platform designed to digitize cooperative registration and supervision. It supports e-registration, mobile money and VISA payments, e-certification, name reservation, cooperative search, onboarding of existing cooperatives, applications for permanent registration, maximum liability requests, and annual reporting. By November 2024, when the longitudinal study concluded, CRIMS was being piloted by District Commercial Officers across Uganda. Other tools include the Microfinance Support Centre's SACCO Software, which complements the government's efforts by supporting Emyooga SACCOs and other cooperatives. The software facilitates lending operations and business development services, thereby strengthening efficiency and overall management capacity.

Looking at these tools, a pattern emerges. While several government MDAs have developed or upgraded management information systems (MIS) to improve operational efficiency, none have intentionally integrated functionality for measuring resilience. Data silos remain a significant barrier, undermining coordinated, multi-sectoral strategies for sustainable cooperative development.

Beyond these systems, other MIS solutions primarily targeting SACCOs and agricultural cooperatives have been developed, mostly by local firms and a few international providers. These tools respond to regulatory demands and the higher risk profile of financial cooperatives. However, most, besides Farmis and Gnugrid (details in the annex), require users to have accounting or

financial expertise and are limited to savings and credit operations. They also lack flexibility to serve diverse cooperative types or to track performance and resilience in line with the Statement on the Cooperative Identity.

vi) Cost-effective studies power sustainable solutions for cooperatives

Undertaking applied research is a catalyst for innovation and sustainable development, and this longitudinal study positions TUI at the forefront of that mission. Unlike previous research endeavours, it stands out as TUI's most strategic and inclusive effort, demonstrating how sustained inquiry can generate solutions to real-world challenges. Collaborating with Busara, a more established research partner, helped to refine tools, pointing to the need for closer cooperation between researchers and practitioners to move studies beyond theory to real-world applications. For effective knowledge transfer, research should go beyond informing boardroom discussions to equipping stakeholders with actionable tools and evidence, an endeavor this study sought to do. Through self-administered digital tools with built-in verification, we reduced costs, improved data accuracy, and strengthened participants' ownership of the knowledge produced. The findings were more credible, bridging the policy and practice gap by building trust among cooperative leaders and members.

vii) Rigid leadership informed by untested bias can undermine cooperatives' adaptability

The study revealed some concerns among stakeholders, particularly on the cost of maintaining the Coop Profiler, followed by risks of data misuse and potential data loss. To address these concerns, the government should expand internet access, subsidise the cost of digital hardware, and make digital infrastructure affordable while software developers should offer fair user rates that amplify social impact. Institutional partnerships have proven effective in driving down costs, making digital tools more accessible than those developed solely through private sector investment.

While Coop Profiler's ethical business practices provide a reliable safeguard, the persistent fear of data misuse underscores the importance of integrity and accountability among data stewards and custodians. Equally critical is

strengthening digital literacy within rural cooperatives to build confidence in using digital tools and to enhance their understanding of data governance, ownership rights, and responsibilities. Training data users can help drive adoption by building their skills and increasing their motivation to use digital tools.

Data in cooperatives is often collected and shared for transactional purposes, such as obtaining loans, rather than for continuous monitoring, evaluation, and resilience measurement. This narrow use reduces interest and cooperation from members, who perceive data stewards as focused on single transactions than long-term development. Establishing democratised data governance frameworks is crucial to build trust, ensuring that cooperatives, their members, and institutions that collect, store, and share data provide documentation with the highest level of integrity and accountability.

viii) Harmonise tools to enable comparable and actionable insights

Currently, data aggregation and resilience measurement tools in the cooperative sector lack standardisation, limiting their ability to power sustainable cooperative development. Beyond basic accounting, membership biodata, and loans management, information generated by most systems is not easily comparable or harmonised. For instance, the Uganda Bureau of Statistics (UBOS), the country's primary statistics body, often excludes cooperatives from national statistical frameworks.

Close collaboration between UBOS and cooperative stakeholders is crucial to integrate cooperatives into existing platforms capable of generating household and business data uniformly. This would improve comparability, enhance collaborative dissemination, and enable the government to effectively align cooperative development with national priorities. The study showed that cooperative leaders with access to records such as audit reports, AGM minutes, and organisational histories interacted seamlessly with the Coop Profiler, while those without records experienced delays and frustration. This underscores the need for professional recordkeeping within cooperatives to ensure efficient data use and maximise the benefits of digital tools.

ix) When rules are ignored, trust and participation decline

Not all data stewards and custodians comply with regulatory and ethical requirements on data governance. As a result, few data collection and sharing efforts clearly communicate benefits to cooperative members, fueling suspicion and apathy. Cooperative leaders strongly called for consent to be obtained from data subjects before sharing their information. Practising this would allow data aggregators and developers such as Coop Profiler to build the trust essential for collaborative data management.

Although Uganda has regulatory and supervisory frameworks under NITA-U and the PDPO, many data subjects and even some developers overlook these mandates. Data stewards often fail to explain the implications of data sharing and use in ways that are transparent and understandable. To address this gap, data license terms and conditions should clearly outline who can access data, who benefits, and what privacy safeguards are in place. They must include provisions for resolving disputes that arise from non-compliance with data safety and privacy regulations.



KEY IMPACT AREAS

1. **Building capacity in identity-based organisational resilience**

Overall, 62 cooperative leaders were trained in basic research and resilience measurement, equipping them with skills often neglected in cooperatives. These leaders can now act as data enumerators and can be contracted for future research projects, creating new income opportunities within their ecosystems.

2. **Integrating CRMI into Coop Profiler increased adoption**

Since 2017, Coop Profiler has helped cooperatives self-profile and analyse member data. This project integrated the Cooperative Resilience Measurement Index (CRMI), enabling automatic calculation of resilience magnitude. The tool received national approval through NITA-U and the Personal Data Protection Office, which approved both Coop Profiler and CRMI as complaint tools. Furthermore, adoption has been phenomenal. By August 2025, 42 agribusiness cooperatives had signed up, with the potential to profile 56,000 members.

There is also good progress in scaling the tool and the lessons beyond Uganda. ACISA (South Africa) requested a customized version for local testing. If successful, Coop Profiler and CRMI could be rolled out across the continent, positioning Uganda as a pioneer in cooperative resilience measurement.

3. **Advancing knowledge of cooperative resilience and powering behavioral change**

The Coop Profiler produces independent resilience reports generated for each cooperative. This allows for easier data comparison to track progress. For instance, between 2023 and 2024, data shows clear resilience gains:

Year	Very resilient	Resilient	Moderately resilient	Low resilience
2023	No data	21%	62%	17%
2024	4%	48%	42%	6%

Table 6: Figures showing improvement of cooperative resilience between 2023-2024

The data is useful in tracking behavioral change and organizational adaptability, which can be directly linked to leaders' participation in measuring resilience as these leaders were actively used as both data sources and research assistants which helped in powering their understanding of key concepts and integrating learning in their internal systems and operations.

4. Utilizing the cooperative identity to power resilience and policy

Cooperative leaders linked values and principles to measurable resilience outcomes. Member-level profiling now connects individual transactions to cooperative turnover and capitalization, reinforcing self-help and economic participation. CRMI and Coop Profiler were introduced to government agencies, including the Ministry of Finance and the Ministry of Cooperatives. The officials recognised their unique contribution to planning, monitoring, and supervision beyond existing systems. Widespread adoption is recommended as a pathway to ESG compliance and better evaluation of programmes such as Parish Development Model and Emyooga SACCOs.

5. Shaping practice in research and social solidarity spaces

We have been disseminating findings at multiple forums to increase learning and uptake. Abstracts and submissions for presentations were accepted and presented in key forums, including:

- Africa Social Behaviour Change Summit (Nairobi, July 2024)
- 8th Uganda Evaluation Week (Kampala, August 2024)
- 4th Conference on Cooperatives and Solidarity Economy (Johannesburg, November 2024)

- Women in Cooperatives Networking Luncheon (Nairobi, March 2025)
- The Evidence for Development Conference by AFIDEP (Nairobi, April 2025)
- Civil Society Organizations Week (Arusha, June 2025)
- Economics Science Association (ESA Conference) hosted by Busara (Nairobi, June 2025)

The final longitudinal study report will be launched by the research partners in November 2025 during the Africa Industrialisation Week

CONCLUSION AND RECOMMENDATIONS

In the past decade, we have witnessed a rise in data-driven operations and impact measurement across many industries in Uganda. Innovations in the digital economy, including membership profiling, land mapping, accounting and financial management, research, etc, are now widely adopted. Our study showed that for cooperatives to adopt data-driven tools and engage meaningfully in resilience practices, they must prioritize and invest in institutional sustainability and resilience through resource planning. This ensures that their members see the value that data-driven tools can create for themselves and the cooperatives. Our study confirms that combining the understanding of cooperative culture and practice with digitalisation, standardised data aggregation, resilience measurement, performance monitoring, good reporting, and inclusive sharing of results can accelerate productivity and deliver sustainable resilience among cooperatives.

These findings align with existing literature. For instance, Liu et al. (2024), Heng et al. (2019), Akhmadalieva and Akhmadalieva (2023), and Liu and Zhang (2023) all report that digitalization has a positive impact on firm-level productivity, including cooperative performance. Specifically, Liu and Zhang (2023) demonstrate that digitalization can significantly improve cooperative performance. Their analysis of specialized farmers' cooperatives in China shows that digitalization helped optimize resource allocation, increase production efficiency, and strengthen external service delivery and internal governance capacity. Their analysis also confirmed that digitalization has a widespread and scalable effect, particularly in underdeveloped regions. In the context of Uganda, cooperatives using digital tools to aggregate data, track, and measure performance based on standardized indicators, as outlined in the statement on the cooperative identity, can be member-centric, innovate regularly, make faster decisions, and optimally meet members' and stakeholders' needs. They are observed to be more collaborative, sensitive, adaptive, and robust, with agility and a strong market position bolstered by resource redundancy,

ensuring that the organisational system and cooperative ecosystem develop towards sustainable resilience.

To spur innovation and encourage adoption of data-driven decision tools in the cooperatives sector, the government urgently needs to harmonize regulations to make it easier for developers to implement integration, which could improve data sharing and analysis. However, the rules need to be clearly stated to maintain trust and safeguard data privacy. The government also needs to invest in lowering the cost of digital hardware and tools to make it easier for rural communities to access these innovations.

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APPENDIX

Tools by other stakeholders in the cooperative sector.

Owners	Tool (s)	Category	Function of the software
Ministry of Trade, Industry and Cooperatives (MTIC)	A digital cooperatives registry and a National Agricultural Cooperative Database, Scope Rapid	Government	The Department of Cooperative Development under MTIC oversees the registration, regulation, and supervision of cooperatives in Uganda. To enhance efficiency and regulatory compliance, the Ministry began digitizing cooperative records in 2023, leading to the launch of the Cooperatives Registration Management Information System (CRIMS) in 2024, in partnership with USAID’s ISSA project. This is a web-based platform that enables e-registration, mobile and card-based payments, document certification, name reservation, onboarding of existing cooperatives, and annual reporting. In November 2024, District Commercial Officers across Uganda were piloting the system. MTIC anticipates that CRIMS will reduce fraud, cut costs, and improve efficiency, while complementing other tools such as the Coop Profiler. MTIC also partnered with Rikolto, Agriterro, EMEA, and the National Alliance of Agricultural Cooperatives (NAAC) to develop SCOPE Rapid, a prototype National Agricultural Cooperative Database. Piloted with 260 cooperatives and launched in June 2022, it captures key governance and financial data such as whether a cooperative has a bank account, internal management systems, and payroll details. The tool provides a general snapshot of agribusiness performance but does not assess professionalism. It was designed to help local governments and development actors target, support, inform project design, and guide policy formulation.

Owners	Tool (s)	Category	Function of the software
Microfinance Department of the Ministry of Finance Planning & Economic Development			However, its rollout has stalled due to funding constraints, and its applicability beyond agricultural cooperatives remains unclear.
	Excel-based database	Government	Formerly UMRA, the Department of Microfinance licenses financial cooperatives to enhance their performance and member value. Currently, they rely on an in-house Excel-based database to manage SACCO information and offer basic accounting support. The Department is developing a digital licensing system to reduce transport costs and challenges associated with manual document verification.
Ministry of ICT & National Guidance in Uganda	Parish Development Model Financial Inclusion System (PDM-FIS)	Government	To support the rollout of the Parish Development Model (PDM), the Ministry of ICT and National Guidance, through a South Africa-based consulting firm, developed two digital tools: the Parish Development Model Information System (PDMIS) and the Parish Development Model Financial Inclusion System (PDMFIS).
	& Parish Development Model Information System (PDMIS)		PDMIS enables Parish Chiefs to collect geocoded household data to assess eligibility for funding, while PDMFIS allows Commercial and Community Development Officers to disburse loans digitally. PDMIS has proven effective in verifying whether beneficiaries received funds and, in some cases, how the funds were used. Though designed primarily for service delivery, both systems can support resilience measurement. This capability could be strengthened by upgrading PDMIS or integrating it with other robust data systems.
FARMIS	Farmis	Non-Government	Farmis is an intuitive farm management platform designed for precision agriculture. It supports data collection and analysis on farm operations, offers real-time alerts on weather and pest conditions, and generates tailored recommendations based on analyzed data.

Owners	Tool (s)	Category	Function of the software
Gnugrid	Gnugrid	Non-Government	Credit Reference Bureau software that collects and analyses personal/institutional credit information.
UCCFS	SACCO net	Non-Government	SACCO membership data and financial management.
Ensibuuko & Mercy Corps	MOBIS	Non-Government	SACCO membership data and financial management.
Sigma	Finance Solutions	Non-Government	Microfinance & SACCO membership data and financial management.
Quest Banker	Quest Banker	Non-Government	Banking, microfinance, and SACCO financial management software.

About The Uhuru Institute for Social Development

The Uhuru Institute for Social Development (TUI) is a social business that works in collaboration with cooperatives, Government MDAs, development partners, private initiatives and foundations, and non-profits in facilitating communities especially women and youth organised in cooperatives, farmer groups to efficiently deploy their full potential to mobilise and organise all forms of capital; drive efficient business and community processes, mutually connecting in solidarity for shared business and social services, competitively access affordable financing and markets, fully participating in decision making processes across various continuums, and building household wealth and wellbeing in a just social economic environment.

About Busara

Busara is a research and advisory firm, working with partners to advance and apply behavioral science towards poverty alleviation. Busara pursues a future where global human development activities respond to people's lived experiences, value knowledge generated in the context in which it is applied, and promote culturally appropriate and inclusive practices. To accomplish this, we practice and encourage behavioral science by centering and valuing the perspectives of respondents, expanding research applications, and building networks, processes, and tools that enhance the competence of practitioners and researchers.

About the report

This report draws on over two years of longitudinal research, providing an evidence-based foundation for future studies and programmatic interventions aimed at enhancing cooperative resilience in Uganda and across Africa. The study systematically examined the current state of cooperative resilience measurement, identified critical gaps framed through a behavioural lens to uncover opportunities for informed decision-making and the design of effective strategies to spur the development of cooperatives.

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