https://doi.org/10.58548/2024jaep21.3153

Corporate Governance and the Value Relevance of Financial Information in Tanzanian Savings and Credit Cooperatives: A Panel-Data Approach

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Abstract: *The study examined the influence of corporate governance on the relevance of financial information towards the value of Savings and Credit Cooperative Societies (SACCOS) in Tanzania. Thus far, evidence on how corporate governance influences the relevance of financial information in cooperative societies is limited globally, notably in emerging economies. Therefore, this research contributes to the body of knowledge by extending the application of agency theory to determine this relationship among variables. The study specifically employed a quantitative panel data set of 202 SACCOs from 2013 to 2020 that was gathered from yearly financial reports and processed through descriptive analysis and regression models. Descriptive statistics demonstrate that the SACCOs' value in Tanzania is increasing. Empirical results show a significant positive relationship between earnings financial information and the value of SACCOS; the book value of equity financial information insignificantly influences the value of SACCOS. The findings deliver empirical and theoretical backing for the notion that board size, skills and supervisory committee skills have a significant impact on the relevance of financial information towards the value of the firm. However, the examination showed no proof that the number of meetings affected the relevance of financial information. This implies that Policymakers should make reforms that will enable SACCOs to improve the quality of financial information and widen the publication of financial reports through effective corporate governance, including the emphasis on online publications.*

Keywords: The value and relevance of financial information, Members' Stake Ratio, Corporate governance, and Savings and Credit Cooperatives

JEL classification: C35, D63, I39

1.0 Introduction

This article explores how corporate governance characteristics influence the relevance of financial information to the value of Savings and Credit Cooperative Societies (SACCOS). The significance of corporate governance in for-profit corporations has been extensively studied and supported (Khidmat & Wang, 2018; Krismiaji & Surifah, 2020; Mlay et al., 2022; Musleh Alsartawi, 2019). However, the impact of corporate governance on the relevance of financial information remains unclear, specifically in not-for-profit and hybrid organizations including savings and credit cooperatives. We address this issue using a database derived from SACCOS in Tanzania.

SACCOS are member-owned microfinance institutions whose basis of existence and value are savings and membership (Towo, 2020). They have been established to promote financial inclusion by offering loans to low-income individuals who are unable to access conventional financial institutions, such as banks (McKillop & Wilson, 2015). SACCOS offers financial services, specifically savings and credits, to individuals who are part of a specific geographic area, social group, or organization (McKillop et al., 2011). SACCOS's contribution to financial inclusion through financial services has been acknowledged worldwide. For instance, WOCCU reports that from 2011 to 2021, the number of people served by SACCOS increased by 50 per cent globally with a penetration rate of 12.69 per cent, and Africa's increasing rate was 61 per cent with a penetration rate of 15.66 per cent (WOCCU, 2022). In Tanzania, the number of people served increased by 61 per cent, with a penetration rate of 7.88 per cent (WOCCU, 2022). The increased number of people served by SACCOS implies that these institutions need effective corporate governance to ensure the sustainable rendering of financial services.

Corporate governance, as defined by (Fiador, 2013), refers to the system of structures and processes that businesses use to report to shareholders and the broader public. Among other parties, the governing board and supervisory committee are the primary governance mechanism for SACCOS because they are responsible for directing and controlling the management of SACCOS on behalf of members (Jones, Money & Swoboda, 2017; Hakelius, 2018). The board is construed as a central point in fostering the performance of SACCOS (P. A. Jones et al., 2017). Boards and supervisory committee members are elected by the SACCOS owners (members) and given leadership and authority over all aspects of the organization (Favalli *et al*., 2020). The governing boards are accountable for ensuring that the SACCOS achieves their purpose within the legislation and regulatory framework (Bijman *et al*., 2014). In that respect, boards must put well-thought-out and carefully thought-out strategies that support the organization's long-term viability and overall performance and effectiveness (Judge & Talaulicar, 2017).

Therefore, SACCOS governing boards have vital roles in strategic settings, monitoring and advising the management by ensuring they conduct the firms' affairs ethically and legally and ensure the organization's performance is attained. SACCOS Regulations of 2019, which provided direction on how to manage SACCOS, apart from other things, assigned the governing board to ensure that they provide Sufficient financial disclosures to members and the general public. Fiador (2013) suggest that effective corporate governance promotes development by assuring the optimal allocation of economic resources. Adequate information is a crucial element in ensuring the effective allocation of investable money and supporting corporate governance (Musleh Alsartawi, 2019). Adequate information encompassing both financial and non-financial data. For many years, financial information from the accounting statements of publicly traded companies has been the primary method of communication for companies looking to attract investors who are looking for investment opportunities. Financial reports often present information regarding a company's liquidity, solvency, profitability, efficiency, and wealth generation.

Financial statements worldwide, including those in Tanzanian SACCOs, are often created using a variety of factors, such as legal, regulatory, industry, and company-specific features (Mwakapala et al., 2024). Considering the significance of financial statements in conveying business information to shareholders and the general public, the matter of value relevance emerges as a crucial aspect that warrants examination. The value-relevance of financial information is typically measured by its capacity to effectively describe an entity's worth or to reflect information that impacts firm value indicators, such as savings and member movements (Krismiaji & Surifah, 2020). According to a principle of good corporate governance, which requires the complete disclosure of all important information to all stakeholders, the question arises as to whether corporate governance has any impact on the value-relevance of an entity's financial reports. The gap will be addressed in this study by utilizing a dataset of SACCOs in Tanzania.

Although the relevance of financial information in established economies is well documented in the literature, there has been limited focus on developing economies, where the validity of financial information and its application are uncertain (Kaaya, 2019). The majority of this research overlooked non-listed firms' businesses such as SACCOS and instead concentrated on listed corporations (Badu & Appiah, 2018; Kaaya, 2019; Khidmat & Wang, 2018). Despite the relationship between financial information and firm value being the subject of extensive research over the years, the way corporate governance characteristics influence the relationship in not-for-profit entities has received limited attention. To the best of the researcher's knowledge, none of the prior studies considered the role of corporate governance in influencing the value relevance of financial information in the SACCOS context.

Scholars have dedicated many empirical efforts to examining corporate governance and the value relevance of accounting information, but the findings remain inconclusive and lack a definitive conclusion. For instance, Fiador (2013) affirmed that financial information has a significant influence on firm value in Ghana. In addition, Bagudo (2016) found earnings per Share (EPS) information substantially impacted the Nigerian stock market. Dang et al. (2020) find that accounting information earnings and book values of equity influence users' decisions. However, Khidmat and Wang (2018) find an insignificant influence of EPS on firm value until it interacts with earnings management in Pakistan. The diverse and unique nature of entities and their operational environment may be the reason for the contradictory and inconsistent facts, demanding empirical evidence on the relevance of financial information and firm value, particularly on SACCOs in Tanzania, due to limited literature. In light of the foregoing argument, the current study focuses on the influence of corporate governance in the association between financial information and the value of SACCOS.

In the context of Tanzanian SACCOS, the interaction between corporate governance characteristics and financial information strengthens the value of SACCOS. Tanzania provides a suitable environment and framework for examining the claimed relationship because economic development and access to finance are still low due to its status as a developing nation (FinScope, 2023). Financial cooperatives, particularly those dealing with low-income earners, are trying to strengthen themselves by providing quality financial information that will attract more savings and new members (Mathuva & Kiweu, 2016). Hence, the influence of corporate governance characteristics within the context of firm value and how it interacts with financial information has not been adequately documented.

The rest of the paper is organised as follows: The value relevance of accounting information in SACCOS is explained in Section 2. Section 3 of the paper presents the theoretical literature review. Section 4 describes the literature review and the development of the hypotheses. The approach is covered in Section 5. Section 6 presents and analyses the findings and discussion. In section 7, the study's conclusions are provided.

2.0 **Context**

2.1 Corporate Governance

Corporate governance can be understood as a system of interconnected rules that companies, shareholders, and managers use to control one another's behavior (Ntim & Soobaroyen, 2013). It can be defined as the stewardship responsibility of the governing board to oversee a company's strategies and to foster the achievement of its goals (Almujamed & Alfraih, 2020; Ntim & Soobaroyen, 2013). Nguyen *et al*. (2020) claim that because of the benefits of governance practices for business value, minority shareholder protection, and the efficacy of corporate codes, it has become the subject of several theoretical and empirical research. Inspired by the need to provide a forum for exploring corporate governance-related theoretical and practical concerns.

Agency theory suggests that when ownership and management are separated by incorporation, it often leads to a variety of agency problems. The conflict of interests between management and shareholders has led to the development of several mechanisms aimed at regulating the opportunistic conduct of corporate managers. Corporate governance has evolved into a significant mechanism for aligning the interests of corporate management with those of shareholders (Fama & Jensen, 1983). Corporate governance in SACCOS encapsulates the overarching framework governing the board's roles and responsibilities, decision-making processes, and oversight within these cooperative entities. It involves defining strategic directions aligned with the SACCOS's mission, setting policies, monitoring, providing advice and ensuring adherence to regulatory standards.

Recently, there have been numerous instances of corporate failures worldwide. These corporations were mostly publicly traded companies subject to regulation by the appropriate statutory authorities. Notable instances of corporate failures include Enron and WorldCom in the United States, Parmalat in Italy, Allied Irish Bank (AIB) and National Irish Bank (NIB) in Ireland since 2001 (Ebert & Griffin, 2009). Various causes contributed to these company failures, with the most significant being a flawed corporate governance framework and an insufficient institutional framework. This includes a deficient framework for financial reporting (Dang et al., 2020). According to Haslam and Chow (2016), regulations and reforms in financial reporting are frequently implemented in response to widely known business scandals and corporate governance failures. In this context, the importance of corporate governance characteristics in influencing accounting information value relevance catches the attention of this current study.

2.2 The Value of SACCOS

Regularly, the share price indicator is used to proxy the value of a firm in listed corporations where shares are transferrable in the stock market (Karim, 2019; Tsalavoutas & Dionysiou, 2014). Member shares in SACCOS, in contrast with regular shares, are exclusively accessible to cooperative members only and cannot be publicly exchanged in a stock market (Anania & Gikuri, 2015). This implies that they are not susceptible to the same market volatility as normal shares. In the absence of a stock market for SACCOS due to the nature of its institutional setup, cooperative scholars argue that changes in members' stake in terms of savings and members reflect the changes in the value of SACCOS (Ganc, 2013; D. C. Jones et al., 2016; Mojo et al., 2017; Rauterkus & Ramamonjiarivelo, 2012). Schmidt (2017) contends that members' stake changes are measured by the members ' stake ratio (MSR) in terms of changes in savings and the number of members who joined or withdrew from SACCO. Accordingly, in this study, the value of SACCOS is proxied by the MSR.

3.0 Theoretical Framework

Corporate governance and the Value relevance studies have used various theories, assumptions and philosophies to support and draw conclusions from their studies. This study employed agency theory to ascertain how the variables relate. The Agency Theory was developed by Jensen and Meckling (1976), who described the relationship between two parties, owners of an organization (principals) and those who manage the organization (agents) with different interests.

The theory addresses the problem of conflicting interests between owners and managers due to the separation of ownership and control (Jensen & Meckling, 1976). Differences in the goals or interests of owners and agents give rise to the agency conflict. An agency problem arises when the interests of the main (the owners) and the agent are frequently at odds (Royer, 1999). The theory argues that the board members representing owners have the role of monitoring the management to work as per the owners' interests to decrease potential conflicts between the two parties. Fama and Jensen (1983) suggest that such a monitoring role is vital because it limits the agent's self-interest behaviour in situations of ambiguity between the agent and principal. Thus, boards act as conflict rectifiers through monitoring and controlling activities done by the management.

In SACCOS, the agency relationship is likewise valid. Members of SACCOS only gather for the Annual General Meeting, where they democratically choose the board to oversee SACCOS operations. Under the direction of the board, SACCOS choose managers (agents) to act on their behalf to accomplish their goals. Therefore, the boards are responsible for overseeing SACCOS managers, ensuring that SACCOS members' interests are safeguarded, and providing financial institutions with resources in the form of advice and strategic settings, such as strategic planning and policies (Bijman et al., 2013; 2014). This implies that SACCOS are created to prioritize the welfare of their members instead of maximizing profits. By overseeing and controlling the managers' actions, the board members operate as a vital check and balance for SACCOS members and can contribute to the organization's sustained success. Because the board members are also members (owners), users of the services offered, and beneficiaries, they may have to share some of the damages if a manager exhibits opportunistic activity. According to Guerrero et al. (2017), boards have a responsibility to oversee and regulate managers by requiring dependable financial reporting, which makes them liable for the success or failure of SACCOS.

The foundation for analysing the connection between corporate governance and the applicability of financial information is thus provided by agency theorists. As a result, a theory has been applied to investigate how corporate governance traits and the significance of financial data relate to SACCOS value. It was applied throughout the interpretation and discussion of the results, assisting the researcher in coming to logical conclusions. The body of research indicates that studies have used agency theory (Almujamed & Alfraih, 2020; Fiador, 2013; Khidmat & Wang, 2018). However, those studies have concentrated on listed corporations and neglected non-market entities. Their findings cannot be generalised to all firms, especially the SACCOS sub-sector in emerging economies, particularly in Tanzania, due to differences in operating environment. The current study's underpinnings with agency theory fill this knowledge gap.

4.0 Literature Review and Hypotheses Development

In this section, we review previous research related to the relevance of financial information on the value of a firm and how women leaders moderate this relationship. The literature review forms the basis for developing the hypotheses used in this study. We first cover the association between financial information and the value of SACCOS, and then the influence of corporate governance on the relationship between financial information and SACCOS value. These associations are covered in the following subsections.

3.1 Financial Information and the Value of SACCOS

Scholars argue that financial information earnings and the book value of equity influence the value of the firm (Alanezi, 2011; Fiador, 2013; Khidmat & Wang, 2018; Utami et al., 2021). Consequently, this study hypothesizes that Earnings Per Share (EPS) and Book Values per share (BVS) financial information influence the value of SACCOS.

Several studies have explored the influence of financial information on firm value and found that financial information can make a difference in users' decisions and influence the value of the firm (Alanezi, 2011; Fiador, 2013; Khidmat & Wang, 2018; Utami et al., 2021). The literature review includes studies on the relationship between financial information and firm value have been conducted. However, such studies and their empirical justifications are grounded in listed profit-based firms. Similarly, most studies have been conducted in developed economies (Kaaya, 2019; Mostafa, 2016). Therefore, more insight is needed into the relationship between financial information and firm value in various contexts, including the SACCOs-sub sector in sub-Saharan Africa, especially in Tanzania, where cooperative firms are not listed in the stock market.

Empirically, there are mixed opinions on how financial information influences firm value. For instance, Almujamed and Alfraih (2020) find that accounting information (earnings and book value) influences firm value. However, the study period was one year, which might have limited the conclusions drawn by the study. Khidmat and Wang (2018) investigated the relevance of accounting information produced by non-financial listed firms on the Pakistan Stock Exchange.

This study reveals that earnings and book value are relevant for shareholders. Fiador (2013) found that earnings accounting information influences share prices in Ghana. However, this study finds that book value accounting information does not significantly affect stock prices. Dang et al. (2020) state that earnings accounting information influences users' decisions and firm value. Krismiaji and Surifah (2020) argued that earning information is a significant information user value when deciding on a reporting entity.

Apart from being interested in earnings information, users of accounting information are interested in details about the book value of equity to make informed decisions (Badu & Appiah, 2018). Scholars have reported that the financial position of a firm through the book value of equity accounting data is valued by users of financial information (Alanezi, 2011; Bagudo, 2016; Kaaya, 2019). According to Almujamed and Alfraih (2020), book value accounting information attracts users of financial information when deciding on a reporting entity. Utami et al. (2021) investigated the relevance of accounting information to firm value in Indonesia. This study reveals that the book value of equity influences a firm’s value. Based on empirical and theoretical justifications, the following hypotheses were developed:

H1a: Earnings per share financial information is positively and significantly associated with SACCOS value

H1b: Book value of equity financial information is positively and significantly associated with SACCOS value

3.2 The Influence of Corporate Governance Characteristics on the value relevance of financial information

SACCOS corporate governance is unique regarding the practice; first, members of the board are elected from those with SACCOS membership; that is, no one outside SACCOS can become a member of the board. Furthermore, board members in SACCOS have a triple set of rights as owners, users of the services and beneficiaries, unlike in investor firms. Governing board members must implement well-thought-out and carefully crafted strategies supporting the organisation's long-term viability and effectiveness (Mlay et al., 2022). For board members to fulfil their roles as guided by the agency theory (Fama & Jensen), they need sound corporate governance characteristics comprising appropriate board size, skills, meetings and supervisory committee skills(Mlay et al., 2022; Towo, 2020). Therefore, corporate governance characteristics has an influence on the relevance of financial information as follows.

3.2.1 Board size

The number of board members has been highlighted as one factor influencing the relevance of the value of accounting information (Almujamed & Alfraih, 2020; Krismiaji & Surifah, 2020). Based on signalling theory, larger boards can be a vital instrument in improving the financial communications of the entity and reducing asymmetric information problems. Empirically, different authors favour larger boards in influencing the relevance of the value of accounting information. For instance, (Fiador, 2013) found that board size has a favourable influence on value relevance earnings and book value in Ghana. According to Almujamed and Alfraih (2020), board size positively influences the relevance of accounting information value in Kuwait. In Tanzania, the SACCO regulation 2019 guides the board size range from five to nine

members. Based on empirical and theoretical justifications, the following hypotheses were developed.
H2a: *The size of the board significantly influences the relevance of financial information to the value of SACCOS.*

3.2.2 Board skills

The signalling theory favours board members with knowledge to influence communication signals through professional interventions and influence users' decisions (Bagudo, 2016). Different studies prefer skilled directors in influencing outcomes. Mwakapala *et al.* (2024) found that financially experienced board members influence the quality of financial reports in Tanzanian SACCOs. Financial expertise board members argued to affect SACCO board performance in Tanzania by Mlay *et al*. (2022). According to earlier research by Favalli *et al.* (2020) and Mori (2014), members of the board with skills significantly increase monitoring, raising the relevance of accounting information value. The high value of the information is anticipated as the monitoring function is strengthened. In Tanzania, the laws governing SACCOs in the country do not specify the mandatory inclusion of skilled board members. The following hypotheses were developed.

H2b *Board skills significantly influence the relevance of financial information to the value of SACCOS.*

3.2.3 Board meetings

Signalling theory sheds light on how board members might lessen information asymmetry by raising pertinent concerns that challenge the organisation's operations at board meetings (Hughes, 1986). Board members decrease information asymmetry by communicating and addressing various problems during meetings (Unda et al., 2019). In Tanzania, the SACCO regulation 2019 guides the board meetings to be conducted quarterly, with an additional two emergency meetings. Various studies favour board meetings to influence the quality of accounting information (Mnif & Borgi, 2020; Musleh Alsartawi, 2019). The following hypotheses were developed.

H2c: *Board meetings significantly influence the relevance of financial information to the value of SACCOS.*

3.2.4 Supervisory committee skills

Supervisory committees in SACCOs replicate the audit committees in other corporations. SACCO laws in Tanzania establish the presence of the Supervisory Committee and how it works independently to monitor the management and the board. Mwakapala *et al. (*2024) posit that financially skilled supervisory committees positively influence the quality of financial reports and relevant accounting information. The oversight organs favoured improving the quality of financial reports if they included experts in accounting, finance, or auditing (Krismiaji & Surifah, 2020; Mnif & Borgi, 2020). The following hypotheses were developed.

H2d: *Supervisory committee skills significantly influence the relevance of financial information to the value of SACCOS.*

4.0 Research Design

4.1 Data Sources and Sample Period

The study data used in this research comes from SACCOs in the Tanzanian provinces of Arusha, Dar es Salaam and Mbeya. The large percentage of SACCOs having filed and audited financial accounts was the deliberate basis for selection (COASCO, 2022). Furthermore, these regions have many SACCOs (TCDC, 2022). The study period covers 2013–2020; the most recent data available is considered while determining this time range for the investigation. 2013 was chosen as the launch year as it marked the implementation of the Co-operative Societies Act of 2013, emphasising publishing financial reports to members. It was expected that most SACCOs would prepare their financial statements and disseminate them to members as primary users. Since the annual reports, including financial statements from Tanzanian SACCOs, are currently unavailable online, data were gathered from their physical offices.

The study population was centred on the audited financial reports submitted by SACCOS to provide the study data. The population of this study comprised 709 audited SACCOS from Arusha, Dar es Salaam and Mbeya. The sample size of this study was drawn from the sampling frame of 709 audited SACCOs in the selected regions. The Yamane formula was used to determine the sample size for the study. The formula was applied based on its aptitude to provide a rapid and accurate sample size from a finite population, as Bordens and Abbott (2011) recommended. A total of 255 SACCOS was derived. The sample size of this study was drawn from the sampling frame of 709 audited SACCOs in the selected regions. The sample size for quantitative data in this study was 255 SACCOs as determined by the use of Yamane (1967) formula as expressed,

$$n = \frac{\mathrm{N}}{1+\mathrm{N}(e^2)} \quad = \frac{709}{1+709(0.05^2)} \quad = 255 \text{ SACCOs}$$

Where n= Sample size (number of SACCOs to be selected), N= Population size (number of SACCOs), e= Margin of error.

Thus, this study was planned with an expected sample size of 255 SACCOs. However, 53 SACCOs were omitted because they did not have complete audited financial reports for the eight years (2013- 2020). Accordingly, the usable sample size was 202 SACCOs. making 1616-year observations for 8 years.

4.2 Dependent variable definition and measurement

As detailed in the context section, based on SACCOS' operating environment and institutional setup, changes in members' stakes are argued to reflect the value of SACCOS (Schmidt, 2017).

In line with Schmidt (2017) and Rauterkus and Ramamonjiarivelo (2012), a member's stake (MS) is constructed as the sum of savings and share capital per member.

MS = (total savings + total share capital)/total number of members.

The above formula indicates that SACCO with a higher MS is trusted more by its members. Comparing MS over time, it is expected that robust and deepening trust will translate into an increase in MS, and if the SACCO is poorly managed and governed, MS is expected to contract.

However, an MS may also statistically contract as more members join. While the SACCO may expand its outreach and earnings, each member's stake is diluted. Therefore, an alternative robust measure suggested by Schmidt (2017) and Rauterkus and Ramamonjiarivelo (2012) is the members' stake ratio (MSR) which reflects savings and membership movements.

The MSR is constructed as the average annual growth of members' stakes over the average annual growth of total membership.

$$MSR = \frac{Average\ annual\ growth\ of\ MS}{Average\ annual\ growth\ of\ total\ membership} 100$$

Valid for numerator: > 0. (1)

Where: Average annual growth rates are calculated as compound annual growth rates as follows. (Value End of Period / Value Beginning of Period) ˆ (1/Number of years) − 1

The results of the MSR are interpreted as follows: each member's share is weakened and the SACCO becomes less member-based if the MSR falls below 100%. Each member's stake was strengthened if it was greater than 100%. No alterations or movements were observed when the value was 100%.

4.3 Independent Variables

Six independent variables were identified to achieve the objectives of this study (Table 1).

Table 1: Operationalization of the Study Variables

Independent Variables			
Earnings per share (EPS)	Net earnings divided by the number of the total share	Annual report of SACCOs (2013-2020)	Bagudo (2016); Khidmat & Wang, (2018)
Book value per share (BVS)	Net assets divide by the number of the total shares	Annual report of SACCOs (2013-2020)	Badu and Appiah (2018); Khidmat andWang (2018)
Board size (BSZ)	The total number of board directors	Annual report of SACCOs	Mlay et al. (2022); Mwakapala et al.

		(2013-2020)	(2024) and Towo (2020)
Board Skills (BSK)	The percentage of members with expertise and abilities in accounting relative to the entire board	Annual report of SACCOs (2013-2020)	Mlay et al. (2022) and Mwakapala et al. (2024)
Board Meetings (BMEET)	The number of board meetings per year	Annual report of SACCOs (2013-2020)	Mlay et al. (2022); Musleh Alsartawi, (2019) and Mwakapala et al. (2024)
Supervisory Committee Skills (SCSK)	The percentage of members with expertise and abilities in accounting relative to the entire committee	Annual report of SACCOs (2013-2020)	Bagudo, (2016) and Mwakapala et al. (2024)
Control Variables			
SACCO Size (SSIZ)	The unit of measurement will be the natural log of total assets.	Annual report of SACCOs (2013-2020)	Mlay et al. (2022); Towo (2020); Mwakapala et al. (2024)
SACCO Age (SAGE)	The number of years from the founding to 2020's end	Annual report of SACCOs (2013-2020)	Mlay et al., 2022; Mwakapala et al. (2024); Towo (2020)

Two financial information variables for the value relevance construct, including EPS and BVS, and four corporate governance characteristics include board size, board skills, board meetings and supervisory committee skills. From 2013 to 2020, the SACCOs' annual reports were the source of all data.

4.4 Control Variables

Several studies have indicated that other variables can explain the value relevance of accounting information. Consequently, the research expands on previous value relevance researchers that realise that firm size (Almujamed & Alfraih, 2020) and firm age (Bagudo, 2016) might impact the value relevance of accounting information. As a result, the regression model incorporates these factors as control variables (see measurements in Table 1).

4.5 Analysis of Data

We performed multivariate analyses to examine the relationship between financial information and SACCOS values and to understand how women leaders moderate this relationship. The relationships between the variables were established using panel regression models. Normality testing, kurtosis, and skewness values were examined, as indicated in Table 2, before deciding the specification of the linear regression model for the application. Regression standards using the pooled Ordinary Least Squares method were met by testing assumptions for linear regression both before and after estimation, such as autocorrelation, heteroscedasticity, multicollinearity, and normality (Mwakapala et al., 2024; Wooldridge, 2013). The test results revealed that the data were regularly distributed. The natural logarithm was applied for the SACCO size to deal with outliers and normalcy problems, as proposed by Adams et al. (2019).

The Hausman specification test was employed to select between fixed and random effects estimates, as customary in previous studies (Mlay et al., 2022; Mwakapala et al., 2024). The Hausman null hypothesis states that coefficients do not differ systematically. The results show that the effects of firms correlate, rejecting the null hypothesis. Accordingly, a fixed-effects model was used. The robust standard error was utilized to lower the bias created by autocorrelation and heteroskedasticity in the results.

4.6 Robustness Check

In line with prior studies on cooperatives, we use alternative measurements of the variables used in the study (Mlay et al., 2022; Mwakapala et al., 2024; Towo, 2020). For the independent variables (EPS and BVS), we assessed the robustness of the results by using unweighted valuations instead of the weighted valuations used in the study. For corporate governance variables, board skills and supervisory committee skills will be measured by a dummy that equals 1 if the SACCOS has 50% or more of the mentioned characteristics on board and 0 otherwise. The size of the board was incorporated into the natural logarithm. In addition, to improve the accuracy of estimations, year dummies are included in all models to account for changes in the macroeconomic environment that can influence the value of SACCOS in Tanzania.

4.7 Model Development

A panel regression model was employed to provide empirical evidence of the influence of financial information on the value of SACCOS and how corporate governance influences the relationship. The dependent variable is the value of SACCOS measured by members’ stake ratio, and MSR is used as the proxy. The financial information variables for this study are earnings per share and book value of equity, and EPS and BVS are used as proxies, respectively. The corporate governance variables in this study are Board size, Board Skills, Board Meetings and Supervisory Committee Skills, whereby BSZ, BSK, BMEETand SCSK are used as their proxies, respectively. SACCOS size and Age are considered the control variables. SSIZ and SAGE are used as the proxy.

4.7.1 The influence of the financial information on the value of SACCOS

To address whether the financial information produced by SACCOS is valuable to members during the 2013-2020 period (examining research hypotheses H1a and H1b). The primary model for measuring the statistical association between the dependent variable (MSR) and the independent variables (EPS and BVS) is described below. The SACCOS size (SSIZ) and age (SAGE) were used as the control variables in this model.

$$MSR_{it} = \beta 0 + \beta 1\, EPS_{it} + \beta 2\, BVS_{it} + \beta 3\, SSIZ_{it} + \beta 4 SAGE_{it} + \varepsilon_{it} \qquad (2)$$

Where;

MSR_{it} = Ratio of the weighted average of savings and capital against members for SACCOs
EPS_{it} =The earnings per share of firm i at time t
BVS_{it} =The book value per share of firm i at time t
$SSIZ_{it}$ =The natural logarithm of total assets of firm i at time t
$SAGE$ = The number of years since foundation to the end of 2020
t = Time
it = Other value relevant information

4.7.2 Influence of Corporate governance characteristics on the relationship between financial information and SACCOS value

In this study, the influence of corporate governance on the value relevance of financial information is tested by looking at the interaction effect between financial information (EPS and BVS) and the corporate governance variables (BSZ, BSK, BMEET and SCSK). The estimation aimed to test whether such an effect is significant in predicting the value of the SACCOS (MSR). The interaction effect was tested using the Moderated Multiple Regression (MMR) technique. The equation represents the moderating effect estimated by adding the product of the independent variable and the interaction effect (X*Z) as a new variable in the regression equation. The improvements in R-squared that occur when the interaction components are included in the regression model are used to characterize the interaction's effect size to determine the interaction effect (Wu & Zumbo, 2008). The extended model is as follows:

$$MSR_{it} = \beta 0 + \beta 1\, EPS_{it} + \beta 2\, BVS_{it} + \beta 3\, BSIZit + \beta 4\, BSKLit + \beta 5\, BMEETit + \beta 6 SCSKit + \beta 7\, EPS{*}BSIZit + \beta 8\, EPS{*}BSKLit + \beta 9\, EPS{*}BMEETit + \beta 10\, EPS{*}SCSKit + \beta 11\, BVS{*}BSIZit + \beta 12\, BVS{*}BSKLit + \beta 13\, BVS{*}BMEETit + \beta 14\, BVS{*}SCSKit + \beta 15 SSIZit + \beta 16\, SAGEit + \varepsilon_{it} \qquad (3)$$

Where;

MSR_{it}= The ratio of weighted savings and shares against members for SACCOs

EPS_{it}=the earnings per share of firm i at time t

BVS_{it}=the book value per share of firm i at time t

BSIZ = number of board member

BSKL = the ratio of skilled board members

MEET = number of board meetings

SCSK = the ratio of skilled supervisory committee members

$SSIZ_{it}$ = natural logarithm of total assets of firm i at time t;

$SAGE_{it}$ = number of years SACCO has been in existence

t= Time

it= other information

5.0 Results and Discussion

5.1 Descriptive statistics

Table 2 indicates the mean MSR for the 2013-2020 period to be about 120%, ranging from a minimum rate of 54% to a maximum rate of 202%. By the rule of thumb, if MSR is less than 100%, SACCO becomes less member-based, while if it is more than 100%, it indicates that SACCO is being reinforced and becomes more member-based on savings and the number of members (Schmidt, 2017). The average 120% MSR for the period under review suggests that most SACCOs in Tanzania are growing in savings and membership, which signals that the SACCOs' value is increasing. The results align with Henock (2019), who found the strong deposit mobilisation of Ethiopian SACCOs. Also, Schmidt (2017) found the average strong growth of SACCOs in Uganda regarding Savings and membership. Although the reported average MSR is promising, the reported minimum of 54% MSR advocates that some SACCOs are becoming less member-based in the country, and the value is decreasing.

Table 2: Descriptive statistics for the dependent and independent variables

Variable	Obs.	Min.	Max.	Mean	SD	Skewness	Kurtosis
Dependent variable							
MSR	1616	54%	202%	120%	37%	1.19	2.61
Independent variable							
EPS	1616	1.22	3.95	2.23	0.82	0.38	2.24
BVS	1616	1.1	4.29	1.51	0.48	0.53	2.83
Board Size	1616	3	10	6	1.511	0.46	2.58
Board Skills	1616	0	0.6	0.286	0.153	0.48	2.83
Board Meetings	1616	4	12	6	2.022	0.89	3.07
Supervisory Committee Skills	1616	0	0.523	0.305	0.131	1.01	3
SACCOs Size	1616	7.216	12.072	9.651	1.328	0.81	2.93
SACCOs age	1616	3	48	14	11	0.83	3.07

5.2 Bivariate Correlation Results

Table 3 displays the correlation matrix between the variables. The results show that the magnitude and significance of pair-wise correlations are often consistent. When evaluating the effects of multiple regression, it is unlikely that multicollinearity will be a major issue because the pair-wise correlation rate is less than 0.8. Another method for determining if explanatory variables are multicollinear is to use the Variance Inflation Factor (VIF). It is an acceptable standard because multicollinearity among variables is present when the score is five or above (Wooldridge, 2013). The results indicate that there was no multicollinearity as every value was below the suggested rate.

Table 3: Correlations Matrix

	Variables	1	2	3	4	5	6	7	8	9
1	MSR	1								
2	EPS	0.266***	1							
3	BVS	0.146***	0.0264	1						
4	Board Size	-0.0192	-0.0006	-0.0553	1					
5	Board Skills	0.0992**	0.110**	0.00544	-0.146***	1				
6	Board Meetings	0.0388	-0.0714**	0.0625	0.00345	0.0699	1			
7	Supervisory Committee skills	0.122***	0.0528	-0.0396	-0.0802*	-0.184***	0.0845*	1		
8	SACCOs Size	-0.174***	-0.0957**	0.0313	0.217***	-0.111**	-0.0127	0.106**	1	
9	SACCOs Age	-0.0809*	-0.125***	0.0465	0.263***	-0.0994**	-0.0613	0.186***	0.570***	1

"***, ** and * represents significance level at 1%, 5% and 10%."

Since the rate is within the allowable range, there is no need to be concerned about multicollinearity, according to Table 4's VIF results, which demonstrate that none of the variables exceed 5. It shows that the data were examined for multicollinearity using the variance inflation factor (VIF). When heteroskedasticity and serial correlation were present, bias was taken into account using the robust standard error estimate. This assessment modifies the independent and uniformly distributed faults. The study's linear regression assumptions were found to be reasonably met, according to the results of the diagnostic assumption test.

Table 4: Variance inflation factors (VIFs) for independent variables

Independent Variable	VIF
EPS	1.332
BVS	1.622
Board Size	1.195
Board Skills	2.081
Board Meetings	1.991
Supervisory Committee Skills	2.081
SACCOs Size	1.123
SACCOs Age	1.048

5.3 Regression results

The dataset was evaluated to ensure that it met the regression analysis assumptions. After assessment, the normality test resulted in an average normal curve. Further verification was carried out by utilising skewness and kurtosis. Table 5 (model 2) regressing MSR on earnings and book value shows that there is a positive and substantial correlation between the EPS and the MSR (β 0.0039, $p < 0.01$), which is in line with H1a. In contrast, BVS and company valuation have a positive but non-significant relationship (β 0.0131, $p > 0.1$). This suggests that SACCOs members are more interested in profitability information on the financial statements than the financial position of SACCOs when they read financial statements for decision-making. The current results might be attributed to the nature of the SACCO environment, where most members are not interested in the assets and liabilities of the firm as long as their interests are fulfilled. Positive earnings per share seem to imply that EPS gains its value relevance to members as the accumulated profits of SACCOs increase.

The findings indicate that the BVS accounting information does not significantly influence the firm value of SACCOs. SACCOs literature contends that accumulated profits reflect the performance and sustainability of SACCOs (Marwa & Aziakpono, 2015; Nyamsogoro, 2010; Towo, 2020). Consequently, the members of SACCOs will save regularly and join the sustainable SACCO. The reported results demonstrate that earnings information tends to be the value-relevant information for members when deciding about savings and membership status. This result is consistent with Fiador (2013), who affirms a significant influence of EPS on firm value in Ghana. Also, Bagudo (2016) found EPS information significantly impacted the Nigerian stock market. However, these results are contrary to Khidmat and Wang (2018), who found an insignificant influence of EPS on firm value until it interacted with earning management in Pakistan. The results reinforce the claim made by Henock (2019) that earnings and performance indicators are the most valuable information for the SACCOs to be trusted regarding sustainability and outreach in Ethiopia.

Table 5: Regression Results

Variables	Model 2		Model 3	
	Coefficient	**P-Value**	**Coefficient**	**P-Value**
EPS	0.0039***	0.0034	0.0014***	0.0012
BVS	0.0131	0.128	0.0042***	0.0032
EPS* Board Size			0.1165***	0.0032
BVS* Board Size			0.2311***	0.0046
EPS* Board Skills			0.2356***	0.0011
BVS* Board Skills			0.1102	0.2124
EPS* Board Meetings			-0.1547***	0.0022
BVS* Board Meetings			-0.1961***	0.0018
EPS*Supervisory Committee Skills			0.2578	0.2235
BVS*Supervisory Committee Skills			0.1186	0.3374
SACCOS Size	0.0123	0.1474	0.2386***	0.0016
SACCOS Age	0.0123	0.1474	0.2386	0.1532
Year fixed effect	Yes		Yes	
Constant	0.4346***	0	3.6429***	0
Observations	1,616		1,616	
R-squared	0.8087		0.8624	
Adjusted R^2	0.1436		0.1425	
F- statistics	6.02		6.34	
Number of Unique_ID	201		201	
Mean VIF	1.072		1.072	

"Robust standard errors in parentheses corrected for potential heteroskedasticity and serial correlation in the error term at *** p<0.01, ** p<0.05, * p<0.1."

The interaction between corporate governance characteristics and accounting information earnings and book values were variables of interest in this study. The way that corporate governance and accounting processes interact may have an impact on how users value accounting information for decision-making. The findings of this examination are shown in Table 5 (Model 3). Interaction between board size and EPS has a positive significant influence on MSR (β 0.1165, $p < 0.01$); similarly, interaction between board size and BVS has a positive significant impact on MSR (0.2311, $p < 0.01$). The significant positive effects of the interactive term between EPS, BVS, and board size suggest that EPS and BVS accounting information gain their value relevance as the SACCO boards get larger. These results are similar to those of Fiador (2013) in Ghana. Interaction between board skills and EPS positively influences MSR (β 0.2356, $p < 0.01$), but an interaction between board skills and BVS is not significantly related to MSR (β 0.1102, $p > 0.1$). This implies that when the board has more members with financial knowledge, EPS accounting information gains its value with no significant impact on the relevance of EPS measure.

Interaction between supervisory committee skills and EPS has a positive but non-significant influence on MSR (β 0.2578, $p>0.1$). Also, the interaction between supervisory committee skills and EPS insignificantly influences MSR (β 0.1186, $p > 0.1$). Results suggest that EPS and BVS information are not affected by the presence of members on the supervisory committee with financial experience. On the other hand, the interaction between board meetings and EPS has a negative, non-significant influence on MSR (β -0.1547, $p > 0.1$). Also, the interaction between board meetings and BVS negatively affects the MSR (β -0.1961, $p > 0.1$). The findings indicate that accounting information value relevance in SACCOs is not earned through increasing the number of board meetings. The current findings imply that to enhance the impact of financial information on membership and savings, SACCOs argued to conduct reasonable board meetings. Regular meetings also mean dealing with management matters instead of strategic issues (Alsartawi, 2019). Based on the current findings, it is argued that SACCOs should conduct a few strategic board meetings to improve the effectiveness and efficiency of monitoring SACCOs management without compromising the quality of governance.

6.0 Summary and Conclusion

This research aimed to assess the value relevance of financial information and find how corporate governance characteristics influence the relevance of accounting information in SACCOs. The findings suggest that most SACCOs in Tanzania are growing in savings and membership, which signals that the SACCOs' value is increasing. Empirical results show that EPS are strongly and favourably connected to the value of SACCOS in terms of MSR, demonstrating that earnings information tends to be the value-relevant information for members to decide on savings and membership status. However, BVS was insignificantly associated with the firm value. The results demonstrate that the BVS accounting information does not influence the SACCO's value.

Regarding how corporate governance characteristics affect the relevance of financial information, the findings deliver empirical backing for the notion that board size, board skills and supervisory committee skills influence the value relevance of financial information. The results indicate that large skilled boards have more ability to manage the quality of financial information to increase the firm value. The study, however, finds negative insignificant effects of the board meetings on the value relevance. The interaction between corporate governance characteristics and financial information earnings and book values reaffirms the viewpoint of agency theory that effective governance boards can influence communication signals and affect users' decisions.

The study has ramifications for future researchers, policymakers and regulators regarding policy and practice. The study evidenced that SACCO members value financial information as an instrument for making informed decisions. Therefore, This study proposes that to strengthen the relevance of accounting information, SACCOs should improve publications and dissemination of financial information to SACCO participants. Additionally, the quality of financial reports must be a priority of management and the governing board. Considering the operating environment of SACCOs in Tanzania, financial information is an essential tool for users' decision-making. To improve the quality of accounting information and its value relevance, the Government is advised to make reforms through the Registrar of Co-operatives and Central Bank of Tanzania to widen the publication of financial reports, including the emphasis on online publications. Doing so will help to increase the dissemination of financial information to members and perhaps improve SACCO accounting information's impact on firm value. This research provides insight that MSR is promising. However, it provides proof that the reported minimum of 54% MSR advocates that some SACCOs are becoming less member-based in the country, and the value is decreasing.

This research focused on the value relevance of financial information and how corporate governance characteristics in SACCO influence accounting information value relevance. Future studies should investigate the effects of additional variables in SACCOs, such as corporate firm-specific characteristics and adherence to accounting standards, on the value relevance of accounting information. Additionally, the MSR as the proxy for the value relevance can be tested in another subsector apart from SACCOs where savings or customers are involved, such as banks and the service industry.

Acknowledgements

"The University of Dodoma, the author's employer, is acknowledged by providing funds to the corresponding author through internal funds intended for long-term training programmes (PhD studies)."

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