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# Cooperative social and environmental disclosure and financial performance of savings and credit cooperatives in Kenya

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### ABSTRACT

This study examines the association between cooperative social and environmental disclosure (CSED) and financial performance of deposit-taking savings and credit cooperatives (SACCOs) in Kenya. Using data comprising of 1272 observations for 212 deposit-taking SACCOs in Kenya over the period 2008–2013, panel OLS analyses are performed to establish the association between SACCOs' CSED levels and financial performance. The results reveal a relatively low level of CSED by deposit-taking SACCOs in Kenya at 29.3%. As a departure from findings in mainstream studies, the study reveals a negative association between CSED and financial performance. We argue that the negative association could be due to changed regulatory landscape or a signal that Kenyan SACCOs are transitioning to financially (profit) oriented goals. The results are useful to regulators and policy makers in designing an optimal disclosure policy for SACCOs.

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### 1. Introduction

There has been increased disclosure of corporate social engagement by organizations in many developed economies in the last 15 years (Bebbington, Larrinaga, & Moneya, 2008; Branco & Rodrigues, 2006, 2008; Islam, 2010; Kent & Zunker, 2013; Luethge & Han, 2012; Maali, Casson, & Napier, 2006; Magness, 2006; McGrath, 2008; Menassa, 2010; Najah & Jarboui, 2013). However, limited studies on social and environmental disclosure exist in developing economies (Abdul Hamid, 2004; Barako & Brown, 2008; Ghazali, 2007; Guidara, Khelif, & Souissi, 2015; Ibrahim & Hanefah, 2014). Social and environmental disclosures include disclosures regarding an organization and its physical and social environment (Gray, Owen, & Adams, 2009; Guidara et al., 2015; Luethge & Han, 2012). They are largely voluntary and include disclosures that focus on community, environment, employees, customers and products (Barako & Brown, 2008; Guidara et al., 2015; Ibrahim & Hanefah, 2014; Kent & Zunker, 2013; Luethge & Han, 2012; McGrath, 2008; Menassa, 2010).

The awareness created on social and environmental disclosures has put pressure on organizations to provide information regarding the activities undertaken to meet stakeholder requirements. The provision of social and environmental information serves as a means of establishing and enhancing an organization's legitimacy through its activities relating to customers, employees, the society and the environment. Despite the importance placed on social and environmental disclosure, very

little is known about the current extent and drivers of cooperative social and environmental disclosure (CSED) practices by savings and credit cooperatives (SACCOs) as observed by Hyndman, McKillop, Ferguson, and Tony (2004).<sup>1</sup> In addition, few attempts have been made to examine the drivers of social and environmental disclosure practices by SACCOs in the context of developing economies in African countries. The current study focuses on SACCOs in Kenya, a developing country whose SACCO sector was ranked first in Africa and number seven in the world in terms of savings (CUNA, 2011). Further, Kenya's SACCOs are the only ones in Africa ranked in the transition-level (McKillop & Wilson, 2011).<sup>2</sup>

Prior studies on disclosure by SACCOs have focused on financial aspects of mandatory and/or voluntary disclosure (Hyndman et al., 2004; Spiegel & Yamori, 2004). Hyndman et al. (2004) perform basic analyses of the financial accountability of credit unions in Ireland. The study by Hyndman et al. (2004) examines the extent of financial disclosure with regard to 16 aspects covering broad content of financial statements (6 aspects) and specific accounting policies and notes to the accounts (10 aspects). Spiegel and Yamori (2004) examine

<sup>1</sup> In other jurisdictions, savings and credit cooperatives (SACCOs) are referred to as credit unions, financial cooperatives, cooperativa de ahorro y crédito, banque populaire or coopérative d'épargne et de crédit in other economies (WOCCU, 2005). The terms SACCOs and credit unions have been used interchangeably in this paper to refer to the same cooperative organization.

<sup>2</sup> McKillop and Wilson (2011) observe that the attributes of transition SACCOs include large asset size, shifts in regulatory framework, adjustments to common bond, shifts towards greater product diversification, emphasis on growth and efficiency, weakening reliance on voluntarism, recognition of need for greater effectiveness and professionalism of trade bodies and development of central services.

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the drivers of voluntary disclosure of bad loans by small cooperative associations in Japan.<sup>3</sup> The disclosure drivers examined by Spiegel and Yamori (2004) focus on size, leverage, adverse news and market structure. McGrath (2008) proposes a social disclosure framework with emphasis on credit unions in Australia. In the social disclosure framework, McGrath (2008) argues that credit unions' should focus on human resource performance, community engagement and environmental issues. In another study, Strandberg (2012) proposes a credit union social responsibility tool. To the best of authors' knowledge, no study has examined the contribution of CSED on the financial performance of SACCOs. This is despite the focus by modern SACCOs on performance and efficiency. Further, SACCOs are formed out of social principles existent among their membership. Borgström (2013) views a SACCO as a social system fueled with feelings of ownership aimed at succeeding by engaging and motivating members, their representatives, and board members in cooperation, and should therefore engage in socially-responsible activities.

The present study focuses on the contribution of CSED on the financial performance of SACCOs in Kenya. Lys, Naughton, and Wang (2015) document that organizations engage in corporate social activities in anticipation of improved future financial performance. In this study, we expect that enhanced CSED will positively impact the financial performance of SACCOs. This is despite studies that argue that corporate social responsibility (CSR) activities are an irresponsible use of an organization's resources (Friedman, 1970). Even though financial performance is viewed as a secondary objective in SACCOs, it has become a key performance measure in recent times. SACCOs in Kenya have expanded operations, diversified product base and attracted more members and this has led to a characteristic shift in the way SACCOs engage in CSED. We investigate this conjecture by examining whether CSED has had any impact on the financial performance of SACCOs in a developing country.

We focus on Kenya because it is listed as a developing country with a vibrant SACCO sector in Africa. The SACCO sector in Kenya has experienced a series of regulatory reforms and growth in operations. The regulation of SACCOs operating front-office service activities (FOSAs) and the growth in SACCOs has led to a characteristic shift towards profit-oriented outcomes. Further, SACCOs in Kenya have expanded operations and may consider engaging in more CSED to increase their visibility in the financial services space. This is to potentially attract more members, and consequently, more deposits. In this study, we examine the association between CSED and the financial performance of SACCOs to establish whether there are any economic consequences of CSED on financial performance. Using a sample of 212 deposit-taking SACCOs in Kenya over the period 2008–2013, the results reveal a negative association between CSED and financial performance. This is possibly a signal of the shifted focus by SACCOs towards profit-oriented goals. It is hoped that the study will provide important insights to regulators and policy makers in the formulation of optimal disclosure rules and regulation in the SACCO sector.

## 2. Institutional setting: the SACCO sector in Kenya

The World Economic Forum (WEF) classifies Kenya as a low-income country and ranks it in the 90th position and 6th in Sub-Saharan Africa (WEF, 2014). Kenya's economy is heavily reliant on agriculture, and this partly explains the dominance of cooperatives in Kenya (Mathuva, 2016). Cooperatives in Kenya emerged in the 1990s when Kenya experienced a series of banking failures. A cooperative organization is viewed as an autonomous association of individuals voluntarily united to meet common economic, social and cultural needs and aspirations through a mutually owned and democratically controlled enterprise (ICA, 2015; Mathuva, 2016). SACCOs are cooperatives that provide

savings and credit facilities to members who are from a particular organization, social grouping or geographical location (McKillop & Wilson, 2011). As mutuals, SACCO members are the owners of the cooperative organization. The focus of SACCOs is therefore on members and the benefits they derive (Borgström, 2013; McGrath, 2008).

According to the World Council of Credit Union (WOCCU)'s statistical report of 2014, there were 57,000 SACCOs operating in 105 countries and serving 217 million members (WOCCU, 2014).<sup>4</sup> The 57,000 SACCOs had a penetration rate of 8.2% and had mobilized US \$ 1.47 trillion in savings and shares. In 2014, Kenya had 4965 SACCOs with 5.1 million members. In the same period, Kenyan SACCOs had a penetration rate of 20.5% and had mobilized US \$ 3.2 billion in savings and shares (WOCCU, 2014).<sup>5</sup>

To register a SACCO in Kenya, permission must be sought from the Commissioner of Cooperatives. The minimum number of individuals required to form a SACCO is 15. Two types of SACCOs exist in Kenya. The first type comprises of SACCOs operating back-office service activities (BOSA). BOSA SACCOs are regulated by the Commissioner of Cooperatives and have restricted membership drawn from a particular organization, social grouping or geographical location. They are registered under the Cooperatives Act and the SACCO Act of 2008. Due to charter and regulatory limitations, BOSA SACCOs cannot serve members outside their jurisdiction. Normally, members have a check-off system whereby remittances are directly made from their workplaces or personal bank accounts into the SACCO.

The second type of SACCOs are those that operate front-office service activities (FOSAs). FOSAs are regulated by the SACCO Societies Regulatory Authority (SASRA). FOSA SACCOs operate like commercial banks and accept deposits on a day-to-day basis compared to BOSA SACCOs which receive deposits on regular basis. They have diversified membership and the public can register as members in the FOSA SACCO. Like BOSA SACCOs, FOSA SACCOs are registered under the Cooperatives Act and are regulated under the SACCO Act of 2008. However, they are subject to prudential regulations, that is, the SACCO Regulations of 2010 for deposit-taking business. FOSA products are varied and range from deposit services (e.g. fixed deposit, savings or short or call deposits) to special accounts (e.g. medical, school fees among others). In addition, the emergence of FOSA attracted other product offerings such as cheque clearing, safe custody, standing orders, electronic funds transfer, salary processing and automated teller machines (ATMs) (Mathuva, 2016). In this study, deposit-taking SACCOs refer to those SACCOs operating both FOSA and BOSA.

Of the 4965 SACCOs operating in Kenya, only 1995 were active in terms of filing audited annual returns with the regulators (SASRA, 2013). Out of the 1995 active SACCOs, 215 operated both FOSAs and BOSAs. In this study, the 215 SACCOs are referred to as "deposit-taking" SACCOs, a term which is often used by the regulator, SASRA. We focus on the 215 deposit-taking SACCOs because they are larger and operate "bank-like" activities. According to SASRA, the 215 deposit-taking SACCOs control over 78% of the market in terms of assets and deposits and a further 82% of the total membership in the sector (SASRA, 2013).

Social and environmental disclosures by SACCOs in Kenya are largely unregulated. However, the WOCCU provides some guidelines on what social aspects SACCOs should disclose, which are largely voluntary in nature. Specifically, the WOCCU highlights service to members and social goals such as on-going education, cooperation among cooperatives and social responsibility as key social activities SACCOs should engage in (WOCCU, 2007). SACCOs are expected to transfer 20% of their profits each year to a statutory reserve and can choose what proportion to distribute as interest on deposits to members. Those SACCOs which have shares are also expected to distribute dividends in addition to the

<sup>4</sup> The World Council of Credit Unions (WOCCU) is a global member body that brings all credit unions and SACCOs from over 105 countries together.

<sup>5</sup> McKillop and Wilson (2011) define penetration rate as the total number of reported credit union members scaled by economically active population.

<sup>3</sup> In Japan, small credit associations are referred to as "Shinkin" banks.

interest on member deposits. In terms of financial performance, the return on assets (ROA) and return on equity (ROE) of SACCOs in Kenya in 2014 improved from 2.32% to 2.56% and 18.78% to 19.03% respectively (SASRA, 2014).

### 3. Literature review and hypothesis development

#### 3.1. Theories on social disclosure

Since the focus of this study is on CSED and financial performance, three theories are considered. Gray, Javad, Power, and Sinclair (2001) identify three approaches in studying social and environmental reporting. The three approaches include (i) decision usefulness theory, (ii) economic theories and (iii) social and political theories. The decision usefulness theory, which originated in the mid-20th Century, attempts to view accounting as a process of providing relevant information useful for making economic decisions (Gray et al., 2001). Studies have argued that social and environmental information may affect future cash flows (or performance) (Guidara et al., 2015). This is because engaging in social and environmental disclosure is viewed as a self-regulating behavior and may be helpful in avoiding adverse effects of regulatory costs on future cash flows (Guidara et al., 2015). Guidara et al. (2015) argue that social engagement and their disclosure has a direct impact on the demand for an organization's products, which in turn affects future cash flows and improves its profitability.

According to the economic theory, the release of social disclosure can be used to reduce the information asymmetry between the management and users of that information. In such a setting, agency costs would be lower and this may improve performance. In this paper, social and political theory approach is based on stakeholder and legitimacy theories. According to the stakeholder theory, managers have a moral obligation to consider and appropriately balance the interests of all stakeholders (Freeman, 1984). The theory suggests that, to ensure continued existence, a firm's stakeholders must approve and continue to support the activities of the firm. As such, firms are forced to align their activities in conformity with the interests of the stakeholders (Gray et al., 2001; O'Donovan, 2002). Managers may engage in impression management by providing more or less information to either avoid adversity or as a result of legitimizing objectives (O'Donovan, 2002).

Legitimacy theory, which has been considered as a systems-based theory, has widely been used as an attempt to explain social reporting practices of an organization (Branco & Rodrigues, 2006; Deegan & Blomquist, 2006; Islam & Deegan, 2010; Gray et al., 2001). Luethge and Han (2012) posit that since the society gives legitimacy and status to business, the management should take societal needs into account. Legitimacy assumes that an organization is expected to match its values with societal values in order to access resources, and gain approval of its aims and place in the society and be guaranteed of continued existence (Magness, 2006).

To examine the association between CSED and financial performance, the study is pegged on stakeholder theory. As advanced by Freeman (1984), stakeholder theory posits that organizations are accountable to the owners as well as other stakeholders. The contrasting views of different stakeholders have to be considered when making disclosure decisions since they affect an organization's ability to achieve its goals (Freeman, 1984). Organizations operate for the benefit of the various interested parties in it. This includes owners, employees, customers, regulators, creditors and other stakeholders relevant to the organization. According to the managerial facet of stakeholder theory, organizations can respond to stakeholders who have a direct economic impact upon the organization (O'Dwyer, 2003). Globally, SACCO members, who are customers as well the owners of the cooperative organization, are viewed as key stakeholders of the cooperative organization and primary readers of the annual report (Lord, Shanahan, & Robb, 2005). SACCO members are often interested in knowing what social and environmental activities the SACCO has engaged in. The nature of SACCO

operations is different from other for-profit enterprises because SACCOs are member-owned business (MOBs) as opposed to investor-owned businesses (IOBs). The main aim of the SACCO is to promote members' welfare as well as achieve certain social goals. Although profit is not the main objective of SACCOs, the recent shifts and transformation in the sector has led to SACCOs seeking profit and growth though expansion of outreach. This may have contributed to increased engagement in CSED as SACCOs strive to create visibility to the public and attract more members and deposits. Based on this argument, we therefore expect a positive contribution of CSED on the financial performance of SACCOs.

#### 3.2. CSED themes in SACCOs

McGrath (2008) observes that credit unions are owned and operated for the benefit of members and the community. This focus is entrenched in WOCCU's broad International Credit Union operating principles which have a bearing on social disclosure aspects for SACCOs. The principles are founded on the philosophy of cooperation and the central values of equality, equity and mutual self-help (WOCCU, 2007). The operating principles include social goals, service to members and consumer protection, which are aspects examined in social disclosure studies. We utilize WOCCU's operating principles in this study to guide social disclosure aspects in SACCOs. Social disclosure aspects are also adopted from prior studies such as McGrath (2008), Menassa (2010), Luethge and Han (2012), Kent and Zunker (2013) and Ibrahim and Hanefah (2014). Based on these sources, we focus on the following five aspects of CSED in a SACCO setting:

1. *Community involvement and other social activities*: This focuses on social responsibility activities undertaken by the SACCO. The community and other stakeholders should know the contribution of the SACCO to economic and social well-being, in terms of assisting the poor and needy in the society (Strandberg, 2012). According to WOCCU (2007), it entails a consideration of the needs of the community and members of the SACCO. We therefore expect SACCOs to disclose the following:
  - a. the nature of charitable and social responsibility activities sponsored,
  - b. amount spent on charitable and social activities,
  - c. contribution to and participation in Ushirika day,<sup>6</sup> and
  - d. source of funds utilized to sponsor charitable and social responsibility activities.
2. *Environmental conservation*: This covers activities carried out by the SACCO with the aim of conserving the environment. It also entails activities carried out to support environmentally friendly initiatives, such as offering green loans (Kariuki & Rai, 2010; Lys et al., 2015). With respect to environmental conservation, we expect SACCOs to disclose the following:
  - a. the nature of environmental conservation activities the SACCO is engaged in,
  - b. amount spent on environmental conservation,
  - c. environmental policies or a statement indicating the SACCO's concern for the environment,
  - d. conservation of natural resources, energy and recycling activities in the business and
  - e. provision of green loans to support businesses.

<sup>6</sup> "Ushirika" is a Swahili word for Cooperation. This is a day set aside for SACCOs in Kenya to meet and share their experiences. During Ushirika day, awards are presented to winning SACCOs based on their governance, mobilization of savings, innovativeness, and efficiency among other categories. Ushirika day is set in line with the cooperative principle of "cooperation with other cooperatives".

3. *Member welfare*: SACCO members are viewed as key stakeholders who are owners as well as customers of the SACCO. The credit union operating principles in [WOCCU \(2007\)](#) emphasize the importance of SACCO members and service to members. SACCOs are expected to actively promote the education of their members and educate them on the type of products they provide ([Ryder, 2003](#); [WOCCU, 2007](#)). Based on this premise, we anticipate SACCOs to provide the following disclosures regarding their members' welfare:
  - a. the number of members for the last two or more years,
  - b. information on member education or training,
  - c. amount spent on member education or training,
  - d. information relating to recruitment of members and
  - e. provision for disabled, aged, and difficult-to-reach customers.
4. *Products and services*: A SACCO society should provide full disclosures on the types of products it has ([WOCCU, 2007](#)). This enables current and potential members to be aware of the types of products offered and make an informed choice that maximizes their welfare. We therefore anticipate SACCOs to provide the following information regarding their product and service offering:
  - a. marketing of the SACCO's products and services,
  - b. products and services offered by the SACCO,
  - c. information on the quality and terms of the products and services,
  - d. how the SACCO handles customer matters e.g. complaints and feedback and
  - e. lending and investment policies.
5. *Human resource welfare*: Organizations are expected to behave responsibly not only to the society but also in terms of improving the welfare of their employees ([Menassa, 2010](#); [Strandberg, 2012](#); [Sutantoputra, 2009](#)). This category entails disclosure of the SACCO's commitment towards hiring and retaining high-quality workforce. According to WOCCU's operating principles, SACCOs should actively promote the education of their officers and employees ([WOCCU, 2007](#)). [Ryder \(2003\)](#) recognizes the importance of developing quality workforce in a credit union since it helps inculcate quality and a high performance culture. Our disclosure items with regard to employee welfare are consistent with those utilized by [Haniffa \(2002\)](#), [Maali et al. \(2006\)](#), [McGrath \(2008\)](#), [Kent and Zunker \(2013\)](#) and [Ibrahim and Hanefah \(2014\)](#). More specifically, we anticipate SACCOs to provide disclosures on the following:
  - a. the number of employees for the last two or more years,
  - b. brief employee profiles,
  - c. an indication of employee morale e.g. trips, turnover, strikes,
  - d. information on employee education and/or training,
  - e. amount spent on employee education and/or training,
  - f. employee salaries, allowances and benefits,
  - g. employee health and safety,
  - h. policies or information on employment of minorities or women and
  - i. industrial relations.

Table 1 presents a summary of the specific CSED aspects under each thematic area.

Using the CSED index comprising 28 information items, we assess the level of CSED for each and every deposit-taking SACCO in the sample over the six-year period, 2008–2013.

### 3.3. CSED and financial performance

Although disclosure has been found to have a positive impact on financial performance ([Quayes & Hasan, 2014](#)), studies investigating the relation between CSED and financial performance have produced mixed results ([Abdul Hamid, 2004](#); [Branco & Rodrigues, 2008](#); [Guidara et al., 2015](#); [Hackston & Milne, 1996](#); [Lan, Wang, & Zhang, 2013](#); [Luethge &](#)

**Table 1**  
CSED aspects in SACCOs.

Social disclosure category/item
<i>Panel 1: Community involvement and other social activities (4 items)</i>
1. Nature of charitable and social responsibility activities sponsored
2. Amount spent on charitable and social activities
3. Contribution to and participation in Ushirika day <sup>6</sup>
4. Source of funds utilized to sponsor charitable and social responsibility activities
<i>Panel 2: Environmental conservation (5 items)</i>
5. Nature of environmental conservation activities the SACCO is engaged in.
6. Amount spent on environmental conservation
7. Environmental policies or a statement indicating SACCO's concern for the environment
8. Conservation of natural resources, energy and recycling activities in the business
9. Provision of green loans to support businesses
<i>Panel 3: Member welfare (5 items)</i>
10. Number of members for the last two or more years
11. Information on member education or training
12. Amount spent on member education or training
13. Information relating to recruitment of members
14. Provision for disabled, aged, and difficult-to-reach customers
<i>Panel 4: Products and services (5 items)</i>
15. Marketing of the SACCO's products and services
16. Products and services offered by the SACCO
17. Information on the quality and terms of the products and services
18. How the SACCO handles customer matters e.g. complaints and feedback
19. Lending and investment policies
<i>Panel 5: Human resources welfare (9 items)</i>
20. Number of employees for the last two or more years
21. Brief employee profiles
22. Indication of employee morale e.g. trips, turnover, strikes
23. Information on employee education and/or training
24. Amount spent on employee education and/or training
25. Employee salaries, allowances and benefits
26. Employee health and safety
27. Policies or information on employment of minorities or women
28. Industrial relations

[Han, 2012](#); [Najah & Jarboui, 2013](#)). Whereas some studies establish a positive association between CSED and financial performance, other studies have found negative or no relationship at all.

Overall, some literature posits that CSED may affect financial performance in a number of ways such as (i) improved employee motivation and productivity, (ii) improved product acceptance by customers, (iii) increased acceptance by investors and financiers who are interested in socially responsible investment, and (iv) lower adverse effects of future regulatory costs ([Guidara et al., 2015](#)). [Lys et al. \(2015\)](#) find that organizations engage in corporate social responsibility (CSR) in anticipation of improved future financial performance. [Lan et al. \(2013\)](#) find that more profitable organizations disclose more information than those with lower returns. In support of this finding, [Hackston and Milne \(1996\)](#) establish a positive relationship between the firm's social responsiveness and financial performance. In the context of developing countries, [Fauzi and Idris \(2009\)](#) and [Setiawan and Darmawan \(2011\)](#) document a significant and positive association between CSR and financial performance. [Rahmawati and Dianita \(2011\)](#) also find a positive association between social and environmental disclosure and financial performance. [McGrath \(2008\)](#) posits that the benefit of providing social disclosures should justify the costs to obtain and prepare that information. [Guidara et al. \(2015\)](#) argue that the benefits of social and environmental disclosures may exceed the costs of providing them translating into improved financial performance as depicted in [Fig. 1](#).

Despite the positive influence of CSED on financial performance, [Friedman \(1970\)](#) argues that CSR is costly and reduces an organization's competitiveness and financial performance. [Abdul Hamid \(2004\)](#) finds an insignificant association between social disclosure and profitability in the same period. This discussion motivates the hypothesis being tested in this study:

## CSED Framework in SACCOs

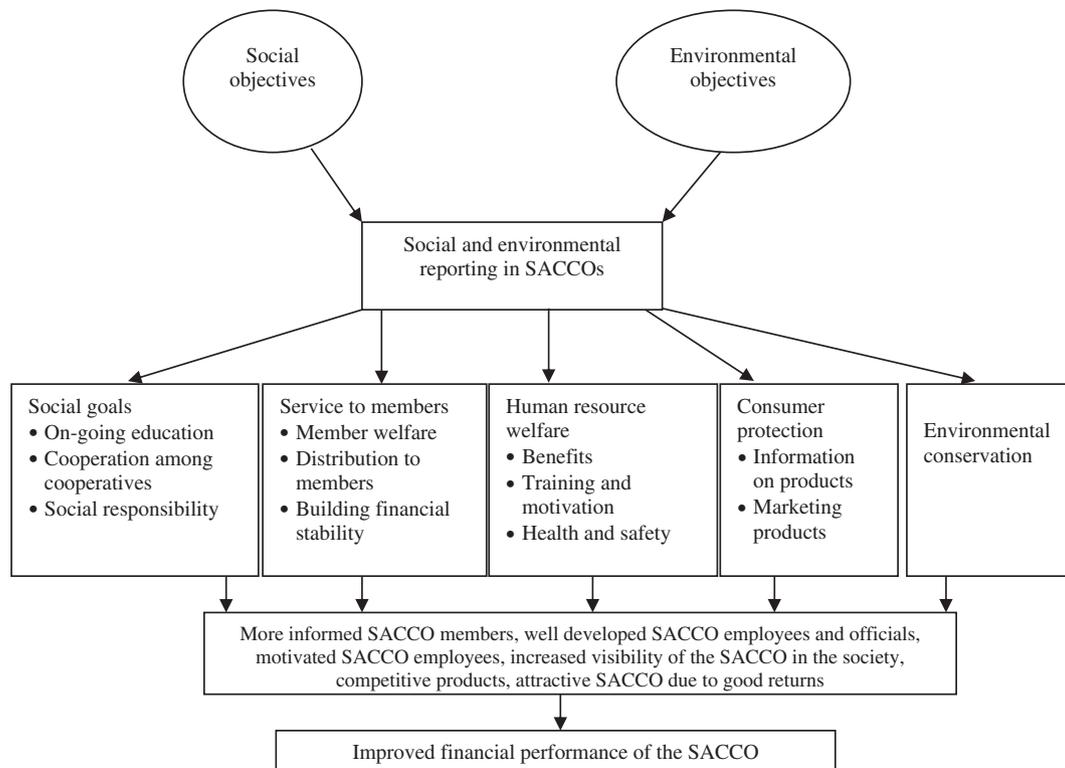


Fig. 1. CSED framework in SACCOs.

**H1.** The level of CSED has a positive contribution on the financial performance of SACCOs in Kenya.

#### 4. Research design

##### 4.1. CSED in SACCOs' annual reports

In this study, we examine the contribution of CSED on the financial performance of deposit-taking SACCOs in Kenya over a six-year period from 2008 to 2013. To achieve this objective, the study employs content analysis of the annual reports of deposit-taking SACCOs in Kenya. Content analysis has been widely used as an approach to quantify the level of disclosure by a number of studies (Gray et al., 2001; Guidara et al., 2015; Maali et al., 2006; Menassa, 2010). To address the validity and reliability, the items in the disclosure index were adopted from prior studies on social disclosures (such as Barako & Brown, 2008; Maali et al., 2006; McGrath, 2008; Menassa, 2010) which have been tested and are based on other studies in the area.

The comprehensiveness of the index was also discussed with an accounting advisory professional working with a Big 4 audit firm which is actively involved in sustainability reporting and auditing. In addition, two independent coders, who were both CPAs (one in level II [intermediate] and the other in level III [final]), were trained by the corresponding author on how to collect and code social information data from the audited annual reports. The coders were provided with the social disclosure index and were taken through how to practically capture social disclosure items from the annual reports into the index. The coding exercise was closely coordinated by the corresponding author who reviewed the accuracy and completeness of the coding exercise on a weekly basis. The corresponding author was also involved in confirming (on a sample basis) the coding performed on a sample of annual reports at the end of the coding exercise.

A CSED index containing 28 disclosure items (see Table 1) is utilized to establish the level of CSED by SACCOs in Kenya. We replicate

Brennan's (2001), Barako and Brown's (2008) and Ibrahim and Hanefah's (2014) two way 0,1 scoring approach where we assign 1 if the relevant CSED item is communicated in the annual report and 0 if it is not. Further, we follow Maali et al. (2006) by utilizing an unweighted CSED index since the focus of the current study is not on the decision usefulness but on the level and determinants of CSED practices. In addition, prior studies find that there are no significant differences between results produced using weighted and unweighted disclosure indexes (Chow & Wong-Boren, 1987). According to Firth (1979), assigning weights to a disclosure index introduces a degree of bias (Firth, 1979). Chow and Wong-Boren (1987) observe that weights may not represent real economic consequences to the subjects whose opinions are aggregated.

##### 4.2. Sample and empirical model

The study targeted 215 deposit-taking SACCOs operating in Kenya as of 31 December 2013. The 215 deposit-taking SACCOs were selected because they provide "bank-like" services and control majority (78%) of the assets and deposits of the SACCOs in Kenya. Further, the 215 deposit-taking SACCOs control 82% of the membership in the sector. Studying the 215 deposit-taking SACCOs would therefore provide insights on the general level CSED in the SACCO sector in a developing country context. The final sample comprises of 212 deposit-taking SACCOs over the period 2008–2013. This leads to a sample comprising a total of 1272 SACCO observations over the six year period. Three SACCOs were omitted due to missing data for a number of years. Data for this study were hand collected from audited annual reports of the SACCOs. The data were provided by SASRA and the cooperatives registry located at the Commissioner of Cooperative's offices in Kenya.

While we recognize that a variety of media may be used to communicate social and environmental information (such as the internet, publications, flyers, press releases, annual reports etc.), the audited annual report is regarded as a credible source of information; it is regularly produced and is a primary means of communication to an organization's

stakeholders (Gray et al., 2001; Unerman, 2000). Gray et al. (2001) view the annual report as a central document that presents a whole picture of an organization's affairs.<sup>7</sup> Further Gray et al. (2001) observe that it is impossible to identify all disclosures on social matters over an extended period of time, and therefore not possible to assess the completeness of the social information, and the consistency of the results of content analysis. To establish the contribution of CSED on financial performance, panel OLS analyses are performed using the following model:

$$\text{Model 1: } FPROA_{it} = \beta_0 + \beta_1 CSED_{it} + \beta_2 LOANS_{it} + \beta_3 LEV_{it} + \beta_4 MEMGROW_{it} + \beta_5 BRAN_{it} + \beta_6 AGE_{it} + \beta_7 CA_{it} + \beta_8 CIR_{it} + \beta_9 NONINT_{it} + \beta_{10} NPL_{it} + \lambda_t + \rho_t + \mu_t \quad (1)$$

$$\text{Model 2: } FPROE_{it} = \beta_0 + \beta_1 CSED_{it} + \beta_2 LOANS_{it} + \beta_3 LEV_{it} + \beta_4 MEMGROW_{it} + \beta_5 BRAN_{it} + \beta_6 AGE_{it} + \beta_7 CA_{it} + \beta_8 CIR_{it} + \beta_9 NONINT_{it} + \beta_{10} NPL_{it} + \lambda_t + \rho_t + \mu_t \quad (2)$$

where:

- $FPROA_{it}$  measures the financial performance of the SACCO using  $ROA_{it}$  as a proxy,  
 $FPROE_{it}$  measures the financial performance of the SACCO using  $ROE_{it}$  as a proxy  
 $ROA_{it}$  is the return on assets,  
 $ROE_{it}$  is the return on equity,  
 $CSED_{it}$  is the actual items disclosed scaled by maximum possible items in the CSED index,  
 $LOANS_{it}$  is the natural logarithm of gross loans,  
 $LEV_{it}$  is the ratio of total debt to total assets,  
 $MEMGROW_{it}$  is the percentage change in SACCO members between the current and previous year ( $(MEM_t - MEM_{t-1}) / MEM_{t-1}$ ),  
 $BRAN_{it}$  is the number of SACCO branches as of 31 December 2013,  
 $AGE_{it}$  is the natural logarithm of number of years since the SACCO was registered until 31 December 2013,  
 $CA_{it}$  is the capital to assets ratio,  
 $CIR_{it}$  is the cost to income ratio,  
 $NONINT_{it}$  is the ratio of non-interest income to total income,  
 $NPL_{it}$  is the ratio of non-performing to gross loans,  
 $\lambda_t$  controls for cross-sectional heterogeneity among SACCOs,  
 $\rho_t$  is a period fixed effects control, and  
 $\mu_t$  captures random disturbances.

Financial performance can be measured using traditional measures (such as ROA and ROE), firm-value based measures (such as Tobin's Q), and industry specific measures (such as net interest margin in the case of banking institutions). Since SACCOs in Kenya are not listed in the capital market, firm-value based financial performance measures are not applicable. Being in the financial services sector, the net interest margin and the ROA, which are rates of return measures in the PEARLS tool, have been used to measure the financial performance of SACCOs in studies such as Esho, Kofman, and Sharpe (2005), Goddard, McKillop, and Wilson (2008a, 2008b) and Mathuva (2016).<sup>8</sup> ROE measures the stability of earnings (Goddard et al., 2008b). We note that similar cost or profit metrics have been used in studies on cooperative or other non-profit financial institutions (Esho et al., 2005; Goddard et al., 2008a, 2008b; Mathuva, 2016; Mercieca, Schaeck, & Wolfe, 2007).

<sup>7</sup> A detailed discussion on the use of annual reports as a basis for content analysis is provided by Unerman (2000).

<sup>8</sup> The PEARLS is a monitoring system which is used to assess the operational efficiency of credit unions in terms of protection of member funds, effective financial structure, asset quality, rates of return and costs, liquidity and growth. It is an acronym that is denoted by P – protection, E – effective financial structure, A – asset quality, R – rates of return and costs, L – liquidity and S – signs of growth.

### 4.3. Control variables

A number of control variables known to influence the financial performance of a SACCO are included in the models. These variables include size measured by value of gross loans ( $LOANS$ ), leverage ( $LEV$ ), membership growth ( $MEMGROW$ ), number of branches ( $BRAN$ ), age of the SACCO ( $AGE$ ), capital to assets ratio ( $CA$ ), cost to income ratio ( $CIR$ ), extent of revenue diversification measured by ratio of non-interest income to total income ( $NONINT$ ) and asset quality as measured by non-performing loans ( $NPL$ ). Goddard et al. (2008a, 2008b) and Mathuva (2016) find that size (measured by total assets and total members) is a significant determinant of SACCO's financial performance.

Goddard et al. (2008b) find a positive association between capital to assets ratio and ROA and a negative association between capital to assets ratio and ROE. With respect to leverage, Guidara et al. (2015) argue that organizations can obtain cheaper debt from banks to increase their financial performance. According to Branco and Rodrigues (2006), banks with higher visibility in terms of branches exhibit greater concern to improve corporate image through CSR disclosure.

Age has been found to have an association with disclosure (Akhtaruddin, 2005). Abdul Hamid (2004) establish a significant relationship between social disclosure and age. Further, organizations with more years of existence have built core competences that may be useful in improving performance. Studies such as Mathuva (2009, 2016) have established a negative association between the cost to income ratio in banks and SACCOs respectively. Prior studies on revenue diversification in SACCOs have unambiguously established a positive influence of revenue diversification on financial performance (Goddard et al., 2008b; Mathuva, 2016). Finally, a larger proportion of non-performing loans in a financial institution implies declining asset quality and may have adverse effects on the financial performance (Messaia & Jouini, 2013).

## 5. Results

### 5.1. Sample characteristics

Table 2 provides descriptive statistics for the 212 deposit-taking SACCOs over the period 2008–2013. The variables age (in years), loans and assets (in Kenya shillings – KShs) have been provided for information purposes. Loans and assets are presented in millions of Kenya shillings. At the time of writing this paper, the exchange rate was 1 US \$ = KShs. 102.

According to Table 2, the average ROA is 1.42% which is higher than the ROA of credit unions in Australia (0.27%) and in the US (0.47%) according to studies by Esho et al. (2005) and Goddard et al. (2008b) respectively. The ROA of 1.42% is lower than that of MFIs globally as per Quayes and Hasan (2014). According to Table 2, the ROE for SACCOs in the sample is 24.4% which is higher than that of credit unions in Australia (2.84%) and in the US (3.96%) according to Esho et al. (2005) and Goddard et al. (2008b) respectively. The relatively higher ROE by SACCOs in Kenya compared to those in Australia and the United States could be due to low equity reported by SACCOs prior to the SACCO Act of 2008 and Regulations of 2010. Before the onset of the regulations, SACCOs were classifying all member deposits as savings (liabilities). However, when the regulations were enforced in 2010, member deposits had to be clearly designated as either savings or equity in accordance with the revised International Accounting Standard (IAS) 32: Financial Instruments.<sup>9</sup>

Table 2 shows that the level of CSED by SACCOs in the sample is quite low at an overall average of 29.3% as per our yardstick. This is lower than

<sup>9</sup> While IASB acknowledges the difficulty in applying the principles of IAS 32 in classifying member's shares in cooperatives, the guidance provided in IFRIC 2 is that members' shares are ideally financial liabilities unless the entity has an unconditional right to refuse redemption of the members' shares. The restriction could be imposed by local law, regulation or the entity's governing charter. In such as case, the members' shares are classified as equity (IASB, 2004).

**Table 2**  
Descriptive statistics.

Variable	Mean	Std. dev.	Minimum	25%	Median	75%	Maximum
ROA <sub>it</sub>	0.0142	0.0316	−0.3028	0.0021	0.0096	0.0256	0.1918
ROE <sub>it</sub>	0.2440	0.7724	−1.9079	0.0170	0.0803	0.2096	6.1540
CSED <sub>it</sub>	0.2935	0.0775	0.0357	0.2500	0.2857	0.3571	0.5238
LOANS <sub>it</sub>	18.8470	1.8490	11.8780	17.6950	18.8000	20.2710	23.7700
LEV <sub>it</sub>	0.1129	0.1674	0.0000	0.0000	0.0590	0.1779	2.3070
MEMGROW <sub>it</sub>	0.2009	0.7971	−0.8128	0.0000	0.0530	0.1885	18.5943
BRAN <sub>it</sub>	2.0487	2.2518	1.0000	1.0000	1.0000	2.0000	16.0000
AGE <sub>it</sub>	3.0723	0.6136	0.0000	2.7726	3.1781	3.5553	3.8712
CA <sub>it</sub>	0.3031	2.1854	−1.5290	0.0518	0.1197	0.2298	64.5854
CIR <sub>it</sub>	0.6963	0.5251	0.0000	0.4036	0.6212	0.8792	8.5264
NONINT <sub>it</sub>	0.2707	0.2261	−0.2794	0.0836	0.2147	0.4246	0.9782
NPL <sub>it</sub>	0.0302	0.0873	0.0000	0.0000	0.0000	0.0087	0.7140
Age (in years)	25	11	1	16	24	35	48
Members	10,425	19,863	98	1190	3227	9084	158,035
Loans (KShs)	663.5024	1685.7264	0.1440	48.3910	146.1716	636.1582	21,043.3064
Assets (KShs)	901.2919	2053.0589	0.2035	85.8753	262.2100	929.3069	24,540.3607

social and environmental disclosure by Jordanian listed companies (30%) according to Ibrahim and Hanefah (2014). However, the average social disclosure level is higher than that of Islamic banks (13.3%) according to Maali et al. (2006), 15% for Kenyan banks according to Barako and Brown (2008) and 25.5% for Malaysian companies according to Ghazali (2007). However, caution should be taken when comparing the results with prior studies on social and environmental disclosure due to the varied disclosure items and coding approach. Table 2 shows that SACCOs in the sample had disbursed average loans amounting to 663.5 million Kenya shillings (US \$ 6.5 million) over the period 2008–2013. The results show that 11.39% of the sampled SACCOs utilize debt to finance operations. Table 2 shows that SACCO membership has been growing at an average of 20.09% possibly due to liberalization and changes experienced in the sector during the period under investigation. According to the results, an average SACCO in Kenya has 10,425 members.

The results show that an average SACCO in the sample has 2 branches and is aged about 25 years since registration. According to the results, the average capital to assets ratio is 30.31%. Table 2 shows that the cost to income ratio is 69.31% which is higher compared to that of Kenyan banks (67.66%) according to Mathuva (2009). This depicts some level of inefficiency by SACCOs in terms of cost control. Table 2 reveals that about 27.07% of income is generated from non-interest sources. Finally, Table 2 shows that the ratio of non-performing loans to gross loans by SACCOs in Kenya is 3.02% over the

period 2008–2013. This is lower than the industry average of 5% according to SASRA (2013).

Table 3 reports the results of the Spearman correlations for the variables in this study. Overall, the results depict a significant and negative correlation between CSED and ROA at the 5% level. This result provides an initial indication of possible negative association between CSED and financial performance as measured by ROA. The results in Table 3 reveal a significant and positive correlation between CSED and the other variables except CA and CIR, which are negatively correlated with CSED ( $p < 0.05$ ). According to Table 3, financial performance (ROA and ROE) is positively correlated with the other variables with the exception of LEV, CA and CIR, which are negatively correlated with financial performance. The correlation coefficients between the dependent and independent variables are below 0.8, the threshold according to Hair, Ringle, and Sarstedt (2013). This implies that multicollinearity does not pose a serious problem in the independent variables studied. Further, the variance inflation factors are below 5, providing further proof that multicollinearity is not a problem.

5.2. Estimation results

Table 4 presents the estimation results of the regression between CSED and financial performance in Models 1 and 2 for the full sample of 212 SACCOs over the period 2008–2013. In all regressions, cross-section and period fixed effects are incorporated.

**Table 3**  
Spearman's correlation matrix and multicollinearity diagnostics.

Panel A: Spearman's correlation matrix											
Variable	CSED <sub>it</sub>	ROA <sub>it</sub>	ROE <sub>it</sub>	LOANS <sub>it</sub>	LEV <sub>it</sub>	MEMGROW <sub>it</sub>	BRAN <sub>it</sub>	AGE <sub>it</sub>	CA <sub>it</sub>	CIR <sub>it</sub>	NONINT <sub>it</sub>
ROA <sub>it</sub>	−0.0537*										
ROE <sub>it</sub>	0.0201	0.7710*									
LOANS <sub>it</sub>	0.2725*	0.0598*	0.2747*								
LEV <sub>it</sub>	0.0788*	−0.2226*	−0.1289*	0.0349							
MEMGROW <sub>it</sub>	0.0610*	0.1251*	0.0804*	−0.0295	−0.0214						
BRAN <sub>it</sub>	0.1374*	0.0952*	0.0614*	0.3258*	0.0827	0.1139*					
AGE <sub>it</sub>	0.2186*	0.0048	0.1521*	0.5735*	0.0666*	−0.1205*	0.0495				
CA <sub>it</sub>	−0.0624*	−0.1520*	−0.3447*	−0.3529*	−0.1612*	0.0794*	0.0370	−0.2257*			
CIR <sub>it</sub>	−0.1581*	−0.3627*	−0.3906*	−0.4440*	0.1013*	−0.1009*	−0.1184*	−0.3088*	0.1394*		
NONINT <sub>it</sub>	−0.0479	0.0071	0.0949*	−0.2809*	0.1319*	−0.0032	0.0912*	−0.2557*	0.2124*	0.1654*	
NPL <sub>it</sub>	0.1431*	0.1286*	0.1255*	0.2713*	0.0030	0.1472*	0.2822*	0.1026*	0.0425*	−0.1865*	−0.0164

Panel B: Multicollinearity diagnostics												
	CSED <sub>it</sub>	ROA <sub>it</sub>	ROE <sub>it</sub>	LOANS <sub>it</sub>	LEV <sub>it</sub>	MEMGROW <sub>it</sub>	BRAN <sub>it</sub>	AGE <sub>it</sub>	CA <sub>it</sub>	CIR <sub>it</sub>	NONINT <sub>it</sub>	NPL <sub>it</sub>
VIFs	1.1200			2.1400	1.0600	1.0100	1.2500	1.6900	1.0200	1.1500	1.1700	1.0900
Tolerance	0.8968			0.4680	0.9461	0.9867	0.7982	0.5922	0.9823	0.8697	0.8570	0.9136

\* Significant at the 5% level.

**Table 4**  
Estimation results – association between CSED and financial performance.

Variable	Pred. Sign	Dependent variable							
		ROA				ROE			
		Coefficient	Std. error	t-Stat.	Prob.	Coefficient	Std. error	t-Statistic	Prob.
Intercept	?	-0.1652*	0.0876	-1.8858	0.0596	-1.4551***	0.4613	-3.1545	0.0017
CSED <sub>it</sub>	+	-0.0280**	0.0140	-1.9929	0.0465	-0.6718***	0.2553	-2.6314	0.0086
LOANS <sub>it</sub>	+	0.0097*	0.0051	1.8984	0.0579	0.0764**	0.0316	2.4185	0.0158
LEV <sub>it</sub>	+	-0.0686***	0.0134	-5.1278	0.0000	-0.5256***	0.1000	-5.2561	0.0000
MEMGROW <sub>it</sub>	+	0.0017***	0.0004	4.7963	0.0000	0.0538*	0.0309	1.7436	0.0815
BRANCHES <sub>it</sub>	+	-0.0007	0.0005	-1.4042	0.1606	-0.0052	0.0104	-0.4999	0.6173
AGE <sub>it</sub>	+	0.0049	0.0052	0.9385	0.3482	0.1981***	0.0387	5.1177	0.0000
CA <sub>it</sub>	+/-	-0.0003**	0.0001	-2.3106	0.0211	-0.0071***	0.0015	-4.8258	0.0000
CIR <sub>it</sub>	-	-0.0062***	0.0017	-3.5777	0.0004	-0.1271***	0.0259	-4.9049	0.0000
NONINT <sub>it</sub>	+	0.0143***	0.0046	3.1017	0.0020	-0.0060	0.1039	-0.0577	0.9540
NPLS <sub>it</sub>	-	-0.0051	0.0064	-0.8088	0.4188	-0.0139	0.0959	-0.1449	0.8848
Firm year controls		Yes				Yes			
Cross section controls		Yes				Yes			
Adjusted R-squared		0.3083				0.4356			
S.E. of regression		0.0263				0.5803			
F-statistic		3.5071				5.3402			
Prob. (F-statistic)		0.0000				0.0000			
Durbin-Watson statistic		1.7816				1.6158			
Observations		1272				1272			

The standard errors are based on White's cross-section standard errors.

\*\*\* Denotes significance at 1% level.

\*\* Denotes significance at 5% level.

\* Denotes significance at 10% level.

The results in Table 4 suggest a negative association between CSED and financial performance. More specifically, there seems to exist a negative association between CSED and ROA (coefficient = -0.03, t-value = -1.99,  $p < 0.05$ ). Table 4 also shows a negative association between CSED and ROE (coefficient = -0.67, t-value = -2.63,  $p < 0.01$ ). This finding leads to the rejection of the hypothesis (H1). The negative association between CSED and financial performance may be a signal that SACCOS are transitioning to financially oriented goals. This implies increased emphasis on financial performance as opposed to social engagement. Further, the negative association may be due to the change in the regulatory landscape that could have influenced SACCOS' engagement in CSED as they now focused more on

meeting regulatory requirements and profits. These findings concur with Freedman and Jaggi (1988) who find that social reporting rises when net income declines. From a theoretical perspective, the formation of a SACCO is not motivated by profits, rather, the attainment of members' economic and social welfare. Although profitability is essential for continued sustainability of the cooperative organization, the pursuit of social goals in SACCOS is seen as one of the key performance indicators. This therefore means that SACCOS engaging in more CSED may not necessarily be the most profitable.

With regard to control variables, the results show that SACCO size as measured by loan size is positively associated with financial performance. This finding is consistent with studies such as Goddard et al.

**Table 5**  
Robustness check – regression results for profit-making SACCOS only.

Variable	Pred. Sign	Dependent variable							
		ROA				ROE			
		Coefficient	Std. error	t-Stat.	Prob.	Coefficient	Std. error	t-Statistic	Prob.
Intercept	?	0.0452	0.0299	1.5115	0.1310	-0.4543	0.6497	-0.6993	0.4845
CSED <sub>it</sub>	+	-0.0209**	0.0086	-2.4192	0.0158	-0.9682***	0.2163	-4.4768	0.0000
LOANS <sub>it</sub>	+	-0.0003	0.0016	-0.1933	0.8468	0.1247***	0.0378	3.3027	0.0010
LEV <sub>it</sub>	+	-0.0571***	0.0081	-7.0261	0.0000	-0.3700***	0.0738	-5.0110	0.0000
MEMGROW <sub>it</sub>	+	0.0012**	0.0005	2.4585	0.0141	0.0524*	0.0309	1.6948	0.0905
BRANCHES <sub>it</sub>	+	-0.0006***	0.0002	-2.5499	0.0109	-0.0155	0.0106	-1.4597	0.1447
AGE <sub>it</sub>	+	-0.0001	0.0006	-0.2148	0.8299	-0.0455***	0.0149	-3.0526	0.0023
CA <sub>it</sub>	+	-0.0004***	0.0001	-3.0408	0.0024	-0.0077***	0.0013	-5.9892	0.0000
CIR <sub>it</sub>	+/-	-0.0097*	0.0046	-2.1294	0.0335	-0.1535	0.1052	-1.4589	0.1449
NONINT <sub>it</sub>	-	0.0125***	0.0028	4.4548	0.0000	-0.0483	0.1073	-0.4502	0.6527
NPLS <sub>it</sub>	+	-0.0016	0.0105	-0.1552	0.8767	0.1705	0.1483	1.1498	0.2505
Firm year controls		Yes				Yes			
Cross section controls		Yes				Yes			
Adjusted R-squared		0.3163				0.4316			
S.E. of regression		0.0199				0.5985			
F-statistic		3.3646				4.8975			
Prob. (F-statistic)		0.0000				0.0000			
Durbin-Watson statistic		1.6746				1.7024			
Observations		1110				1125			

The standard errors are based on White's cross-section standard errors.

\*\*\* Denotes significance at 1% level.

\*\* Denotes significance at 5% level.

\* Denotes significance at 10% level.

(2008a, 2008b) and Mathuva (2016) who find a positive association between size and financial performance. Further, the results reveal higher leverage has a negative contribution to financial performance. Interestingly, the results in Table 4 show that SACCOs with higher leverage engage in more CSED. This result seems to support Guidara et al. (2015)'s view that organizations with more debt engage in higher social disclosure to attract more financing. An upward growth in SACCO members positively contributes to financial performance. Finally, the capital to assets ratio and the cost to income ratio have a significant and positive association with financial performance at the 1% level of significance. These findings are consistent with Goddard et al. (2008b) and Mathuva (2009, 2016).

### 5.3. Robustness checks

Table 5 presents the estimation results of the regression between CSED and financial performance for the full sample of 212 SACCOs over the period 2008–2013 including only positive values for ROA and ROE. In all regressions, cross-section and period fixed effects are incorporated. This is performed as a robustness exercise to determine whether the association between CSED and financial performance depicted in Table 5 still prevail.<sup>10</sup>

The findings in Table 5 are in support of a negative association between CSED and financial performance established earlier, even after considering all positive values for both ROA and ROE. This shows that the negative impact of CSED on the financial performance of SACCO prevails regardless of the profitability of the SACCO.

## 6. Conclusion and limitations

Studies on the association between CSED and financial performance have focused on large, listed companies or banks, mainly in developed economies. However, sparse literature exists on mutual organizations such as SACCOs in developing economies. Further, disclosure studies in SACCOs have maintained that the drivers of disclosures in mutual organizations are not well known. Due to the low level of disclosure by SACCOs, this study utilizes stakeholder theory to examine the contribution of CSED on the financial performance of SACCOs in Kenya. The study examines whether CSED has potential economic consequences and what this means to regulators and policy makers. The results reveal a relatively low level of CSED by deposit-taking SACCOs in Kenya. The study establishes a negative association between CSED and financial performance. This finding may signal the shift by SACCOs towards more profit-oriented goals. The negative association between CSED and financial performance could also be explained by the changing SACCO regulations over time. These results are useful to regulators and policy makers in designing an optimal disclosure policy for SACCOs in a developing country context.

The study is not without limitations. First, the reliance on a self-constructed CSED index has been found to have researcher bias. Second, binary coding, with its limitations, was adopted in scoring CSED for SACCOs in the sample. Third, the study focuses on SACCOs in one developing country and this limits the generalizability of the findings. Fourth, data on CSED were obtained from annual reports and an examination of other sources of CSED by SACCOs is warranted in future research. Finally, not all SACCOs in Kenya were studied and further studies could examine other SACCOs operating in Kenya, especially those operating BOSA.

<sup>10</sup> This robustness exercise was performed based on a comment by one of the anonymous reviewers to examine if the negative association between CSED and financial performance will still prevail if SACCOs with negative income were excluded. We appreciate this comment.

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