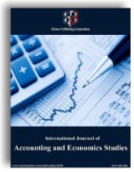
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Research paper



Cooperative Banking for A Sustainable Social Economy: Insights From Italy

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Abstract

Purpose: This paper aims to assess the dual objective of financial and social efficiency with a focus on Raiffeisen Cooperative Banks in Italy.
Method: An input-oriented Data Envelopment Analysis was used to estimate efficiency scores for each Raiffeisen Cooperative Bank. In the second stage, a regression analysis is performed to relate efficiency scores to factors that investigate their influence on relative efficiency in terms of both financial performance and social impact.
Findings: The study's findings revealed significant inefficiencies from a social perspective, while financial efficiency is generally strong, there is room for improvement in social efficiency.
Implications: Cooperative banks are crucial in promoting social well-being and sustainable development by aligning operations with the Sustainable Development Goals (SDGs). A commitment to social impact should represent a strategic priority, not merely stated in principle but operationalized through measurable and accountable indicators. Raiffeisen Cooperative Banks should harness technological innovations to elevate the effectiveness of their commercial activities. At the same time, they need to use these advancements to maintain and strengthen client relationships across both digital and face-to-face channels, ensuring they remain responsive to the social dynamics and specific needs of the local communities they serve.
Originality: The novelty of this research lies in its focus on a socio-economic sector in Italy that has not yet been studied in its dual dimensions. To the best of the authors' knowledge, this is the only study that examines the social impact - and consequently the mission coherence - of Raiffeisen Cooperative Banks, emphasizing the importance of the social mission in the sustainable development promoted by the cooperative banking system.

Keywords: *DEA Model; Social Efficiency; Social Accounting; Raiffeisen; Partnership for sustainability (SDG 17).*

1. Introduction

The Raiffeisen system, like many cooperative organizations in other countries, is recognized as part of the social economy. This economic framework was developed mostly in the 19th century as a reaction to the hardships brought about by the Industrial Revolution, which fostered relentless capitalism and deepened social inequalities, often paired with appalling labour conditions (Ávila & Campos, 2005). Within this historical backdrop, societal and cultural progress encouraged the embrace of mutualist and solidarity-based principles, influenced by movements such as utopian socialism and social Christianity.
The Raiffeisen system originated in mid-19th-century Germany as a response to widespread rural poverty and financial exclusion. This model found fertile ground in Alto Adige (South Tyrol), where a strong tradition of self-reliance and community solidarity aligned naturally with the cooperative principles (Von Mueller 2010).
In South Tyrol (Alto Adige), Raiffeisen Cooperative Banks emerged as a network of locally governed financial institutions designed to serve the region's unique linguistic, cultural, and economic characteristics. Today, they form an integral part of the Raiffeisenverband Südtirol (Raiffeisen Association of South Tyrol), which provides support, coordination, and oversight.
The Raiffeisen Cooperative Banks in Italy are part of the cooperative credit bank system (BCC), which has a long-standing and stable presence in the Italian economy, benefiting from centuries of experience. This system represents nearly 51% of the total banks in the country, with 223 out of 437 institutions categorized as BCCs. These banks stand out for their robust financial foundation and their significant role in financing essential sectors, such as agriculture, tourism, and craftsmanship, providing approximately 20% of loans to SMEs in these fields (Catturani 2017, Crovini et al. 2018, Banca d'Italia 2025). Specifically, the Raiffeisen network comprises 39 active institutions with over 72,000 members. These banks maintain an extensive presence in the autonomous province of Bolzano, operating in 112 out of 116 municipalities. Their cooperative structure enhances the local economic framework, fostering growth even in remote and rural areas by ensuring access to essential financial services and supporting sustainable development. (Casse Raiffeisen 2025).

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This study, given the unique mission of the Raiffeisen Cooperative Banks, aims to empirically analyze the fulfillment of two core goals for a cooperative bank: first, achieving social efficiency, and second, maintaining financial stability. The Raiffeisen Cooperative Bank's century-long presence in the market is a testament to its consistent financial equilibrium. However, evaluating its relative social impact (benchmark analysis) using data from accountability reporting through a statistical model like Data Envelopment Analysis (DEA) would provide valuable insights into its effectiveness in balancing these dual objectives.
This study is organized into six sections. The second and third sections review, respectively, theoretical and empirical studies that explore the rationale behind the existence of the social economy in a competitive market, as well as evidence regarding the social impact of financial institutions such as cooperative banks and microcredit initiatives across different countries. Section four details the methodology and the variables employed in the analysis. The fifth section outlines the results of the empirical study and provides a discussion of the findings. Finally, the sixth section concludes the research, summarizing the key insights and implications.

2. Theoretical Framework

The social economy is a distinct sector that exists alongside the public and private sectors, and it emphasizes principles such as solidarity, democracy, and sustainability. The rationale of the social economy is built on the idea of addressing societal needs and correcting market failures through cooperative and collective action. The emergence, growth, and effectiveness of the social economy depend on a range of interconnected factors that also influence the nature and structure of a state or community. For instance, Europe is often identified with a social economy, in contrast to the United States, which is more aligned with a market-driven economy. Furthermore, within Europe itself, the Scandinavian countries stand out for having a more advanced and developed social economy compared to other European nations.
The Italian cooperative system, as an integral part of the social economy, can be understood through the same principles that explain the development of the social economy. Four theoretical frameworks provide insights into the factors driving the formation and growth of social cooperatives: a. From the perspective of behavioral economics, individuals come together to collectively reduce or manage market risks, achieving greater security than they could independently (Kahneman and Tversky 1979), b. According to social capital theory, individuals perceive unique emotional benefits, such as trust, security, and a sense of belonging, which are amplified within a group and difficult to attain alone. Religious, social, cultural, or even biological factors often underpin these perceptions Van Bakel & Horak, 2024); c. Institutional theory emphasizes the role of the local institutional framework, which shapes the collective organization of individuals in a specific context, fostering organizational activities (Roszkowska-Menkes 2023); d. Drawing from common property theory, individuals unite around shared resources and adhere to collective norms that prevent morally unacceptable behavior, promoting the responsible and sustainable management of common goods (Agrawal & Benson, 2011), Figure 1.

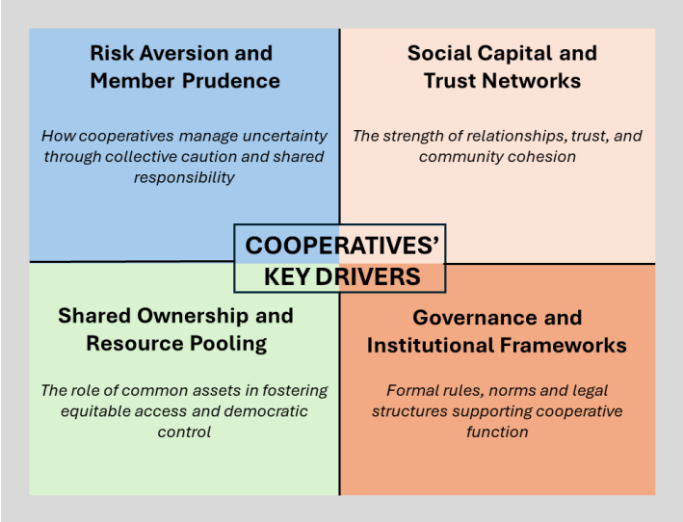


Fig. 1: Key drivers behind the formation of cooperatives (S*ource*: Authors)

In the context of behavioral economics, it is posited that individuals are non-rational economic agents (in contrast to the traditional economic theory that emphasizes the rationality of individuals). This suggests that the possibility of individuals making mistakes from individual choices is greater. The lack of rationality in choices or actions can be seen as a motivation for people to seek other ways, including non-individual ones, to have more information, more opportunities, and more cooperation in finding a satisfactory result in choices or actions. Furthermore, the heightened sensitivity to loss in comparison to gain can be regarded as a manifestation of risk aversion. One method of coping with the inherent risk associated with choices or actions is to share this risk with others, a concept referred to as risk-sharing. Consequently, the absence of individual rationality and the existence of risks that are individually unbearable can be usefully explained by behavioral economics theories. This is particularly relevant in understanding why individuals choose to organize in cooperatives and why cooperative members are willing to accept reduced personal gains to ensure greater security within the group.
Social Capital Theory explores the significance of social networks, relationships, and trust in promoting cooperation and achieving shared objectives within communities, organizations, and societies. It emphasizes those social connections – whether among families, communities, or organizations – possess both economic and social value, facilitating the exchange of information, resources, and mutual support. Regions and communities that exhibit high levels of social capital tend to be characterized by the presence of strong trust, tightly knit networks, shared values, and active civic engagement. This concept is of relevance in understanding the success and effectiveness of cooperatives. These member-owned and member-operated organizations are known to thrive in settings where social capital is well-developed, a factor which enhances their performance and sustainability.
Institutional theory, particularly when applied to organizations, suggests that organizational behavior is shaped by both external and internal institutional pressures. These pressures can take various forms, including regulatory influences such as laws, regulations, and policies that dictate organizational practices; cultural-cognitive pressures such as norms, values, and shared beliefs; and normative pressures stemming from professional or industry standards that shape operational expectations. For cooperatives, institutional pressures include legal

frameworks that facilitate their establishment, cultural norms that promote solidarity and mutual assistance, and the shared values of cooperative members. Cooperatives operate within intricate institutional environments where both formal and informal institutions play significant roles. Formal institutions consist of laws and regulations that oversee cooperative creation, operations, and financial governance (e.g., cooperative laws and tax regulations). In contrast, informal institutions encompass societal values and cultural norms that influence cooperative practices, such as the principles of solidarity and trust among members. The identity of cooperatives is influenced by these institutional dynamics. For instance, in some regions, such as many European countries, cooperatives are rooted in cultural traditions of mutual support, while in others, such as worker cooperatives tied to socialist movements, their development is more closely linked to political or economic agendas.

Commons Theory explores the management, use, and preservation of shared resources that are collectively owned or shared by a community. It examines how communities and organizations govern and sustain resources that are accessible to all members but not owned by any one individual, often referred to as common-pool resources (CPRs). Commons Theory addresses both the potential benefits and challenges of managing these resources, with a focus on balancing individual interests with collective needs. Given that cooperatives are voluntary forms of organization based on mutual trust, the theory in question emphasizes that these economic organizations, particularly those managing shared resources, often draw on principles from commons theory to maintain sustainability. The principles of Commons Theory, as identified by Ostrom, pertain to the management of common-pool resources and are as follows: a. the establishment of clear boundaries and rules; b. the implementation of collective monitoring and enforcement mechanisms; c. the establishment of mechanisms for conflict resolution; d. the capacity to adapt to changing circumstances; e. the promotion of effective communication and trust among users.

A cooperative economic organization cannot thrive or develop effectively unless the factors highlighted by various economic theories are simultaneously present and interconnected within a specific economic context. This is well exemplified by the failure of the Soviet cooperative system, which underscores this principle. In this case, the institutional factor played a disruptive role through the coercive collectivization of productive resources in Eastern European countries. Cooperatives established and managed through force, imposition, and centralized control, while disregarding individual agency and local autonomy, ultimately led to their failure.

3. Literature Review

Based on the theoretical context synthesized in the second session, while commercial banks are generally focused on financial outcomes, cooperative banks, on the other hand, must maintain not only a degree of financial balance but also direct their attention primarily toward social objectives. In the absence of such a distinction, the question arises as to how cooperative banks could be distinguished from commercial banks. Consequently, for cooperative banks, a balance between financial efficiency and social efficiency must be achieved.

Research on the financial and social efficiency of banking cooperatives remains relatively limited compared to the vast number of studies examining the financial performance of commercial banks, which are primarily driven by profit maximization (Alam et al. 2021, Galletta et al. 2022, Polo-Garrido & Vargas-Ulloa 2024). Although credit cooperatives are known to create value beyond merely serving their members, contributing to wider societal benefits (Kosinowski 2020, Groeneveld 2021), this banking model has not garnered substantial academic attention. This lack of interest may be attributed to the sector's prioritization of non-financial goals and its strong alignment with corporate citizenship principles embedded in its ethical frameworks and public commitments (Polo-Garrido & Vargas-Ulloa, 2024). Another possible factor is the relatively small share of banking cooperatives within national financial markets, which may reduce their appeal as a research subject. Furthermore, studies assessing the efficiency of these institutions - or financial entities with dual objectives - predominantly focus on financial performance, while social efficiency remains an underexplored area (Sousa de Abreu et al. 2018, Campoverde et al. 2019, Camargo Martins et al. 2024, Polo-Garrido, Vargas-Ulloa 2024).

This relative neglect of social efficiency underscores the necessity for adopting social accounting frameworks that can systematically capture, measure, and report the social value generated by cooperative banks. In the absence of social accounting, the intangible and long-term benefits these institutions deliver - such as fostering financial inclusion, supporting local economies, and enhancing social cohesion - remain unquantified and undervalued. Without robust tools to assess social performance, there is a risk that cooperative banks may be evaluated solely by financial metrics, thereby misrepresenting their full impact and potentially undermining their legitimacy as distinct entities within the banking sector. Social accounting thus becomes essential not only for transparency and accountability, but also for reinforcing the cooperative identity and for informing governance, strategy, and stakeholder engagement in line with their dual mission (Bodentstein, Fouché & Polo-Garrido 2024).

Referring to the available literature, there is particular interest in identifying the trade-off between the financial performance and social impact of cooperative banks, as well as other financial institutions that have dual goals: financial and social.

In their research, Burgstaller et al. (2023) examined both the financial and social efficiency of 401 Austrian regional banks, including savings banks and credit cooperatives, which fall under the category of stakeholder banks. Using Data Envelopment Analysis (DEA), the study evaluates efficiency from both financial and social perspectives while considering the benefits for stakeholders. Additionally, a second-stage truncated regression model is employed to analyze the impact of market conditions on efficiency levels. The results suggest that when social objectives are considered, traditional efficiency rankings shift considerably, highlighting the necessity of a broader performance framework in evaluating stakeholder-oriented banking models. Amersdorffer et al. (2015) conducted a study using data from 15 Bulgarian agricultural credit cooperatives (ACCs), compiling a database that combines financial performance indicators from 2000 to 2009 with social performance data from 2009. The assessment of social performance was based on a recognized social auditing methodology, which provides the foundation for constructing a social output measure. The study introduced an innovative analytical model for Data Envelopment Analysis (DEA), producing significant findings for the ACC sample. Interestingly, the efficiency rankings revealed that only ACCs with strong financial performance achieved higher positions when social output was factored into the evaluation.

In contrast, the study by San Jose et al. (2018) argues that there is no trade-off between financial performance and social efficiency. They employed Data Envelopment Analysis (DEA) and Factorial Analysis of Variance to assess the efficiency of financial institutions, specifically looking at country- and type-effect studies in banking. Their results, in both cases, suggest that while no trade-off between social and economic efficiency was found, they were unable to establish a positive correlation between the two. Lebovics et al. (2016) reached similar conclusions in their study, which examines the trade-off between the financial sustainability of microfinance institutions (MFIs) and their outreach to low-income clients. Their research contributes to the ongoing debate by investigating whether financial and social efficiency can coexist, particularly in the presence of implicit subsidies from the state and international donors. The findings indicate that, in the case of Vietnamese MFIs, financial and social efficiency are not interconnected. The subsidies, which form the foundation of most Vietnamese MFIs' operations, enable them to maintain high financial efficiency while simultaneously fulfilling their social objectives. In their research,

Martinez-Campillo et al. (2020) examined social banking in an emerging economy, focusing on India. Their findings indicate that Indian public banks performed relatively well in both financial and social aspects, with social efficiency slightly surpassing financial efficiency. Furthermore, their dedication to lending to priority sectors did not hinder the profit-driven objectives of conventional banking services. Regarding the factors influencing social and financial efficiency, various competing forces come into play, including regional wealth, bank size, branch networks, and rural location. These findings provide valuable insights for stakeholders of India's public banks, as they highlight whether these institutions have effectively managed their dual financial and social objectives and contributed to poverty alleviation and economic development in the country. The study by Wijesiri et al. (2015), which examines technical efficiency and its determinants of 36 microfinance institutions (MFIs) in Sri Lanka using a two-stage double bootstrap approach, comes to the same conclusion. Despite the poor financial and social performance of MFIs in Sri Lanka, there appears to be no correlation between the two. Moreover, social efficiency is higher on average, as committed NGOs receive donations and subsidies to meet social needs. Institutions without subsidies do not perform well, either financially or socially.

Piot - Lepetit et al. (2014) present intriguing findings, revealing that the trade-off between financial and social efficiency may exist for some cooperative banks while being absent for others. Using a multi-DEA approach, the study demonstrates that although a trade-off is evident for 15% of the MC2 (Mutuelles Communautaires de Croissance) in Cameroon, no such trade-off is observed for 46% of them. For the remaining 39%, the conclusions are less clear, as these institutions exhibit inefficiency in both financial and social aspects of their operations. The variations in results are primarily influenced by the banks' age and the regions in which they operate. However, in most cases, their social performance lags their financial performance. While the study does not provide definitive support for either perspective, it does indicate that some MC2 institutions successfully balance their dual financial and social objectives, demonstrating a level of complementarity in managing their double bottom line.

Several factors influence the social efficiency of cooperative banks, with the institutional component playing a crucial role. This includes both macro-institutional factors (such as state and local governance) and micro-institutional factors (related to the internal organization of the bank).

Regarding the macro-institutional aspect, Agostino et al. (2023) analyzed cooperative banks across Italy between 2006 and 2015, emphasizing that the quality of local institutions where these banks operate is just as significant as legislative reforms aimed at reducing credit risk through bank consolidation. Their findings suggest that while legislative reforms have not significantly impacted the efficiency of cooperative banks, the local institutional environment plays a decisive role in shaping their performance. Similar conclusions were drawn by Martinez-Campillo et al. (2017) and Sierra-Fernandez et al. (2019) in the Spanish context. Their research highlights that, beyond demonstrating greater resilience to financial crises, cooperative banks' social efficiency is influenced by regional institutional differences (e.g., between Madrid and Andalusia). Furthermore, cooperative banks operating in large urban or metropolitan areas face challenges in achieving social objectives. In these environments, competition is dominated by large commercial banks focused on profit maximization, making it harder for cooperative banks to fulfill their social mission.

At the micro-institutional level, San-Jose et al. (2020) examined the effects of transforming savings banks into commercial banks, further contributing to the discussion on how internal organizational changes impact social efficiency. The Spanish savings banks during the 2012-2014 period have been used as an example for other countries in which there are savings banks nowadays. The aim is to show if there are significant differences between banks and former savings banks. Then, at least in the first years after their transformation, banks are still achieving very positive results in social activities, and, besides, they are improving their economic results. In their study, Sudarmadji et al. (2020) examined the efficiency of Jakarta's bank cooperatives in terms of input variables and output variables. The saving and credit cooperatives used in this study are owned by government employees (first type) and the public (second type). The efficiency of these two types of cooperatives was analyzed separately and then compared using the Data Envelopment Analysis (DEA) method. The findings of this research indicated that the average efficiency of the first type of cooperatives was smaller than that of the second. The underlying cause is that cooperatives of the first type exhibit less efficient management, particularly in terms of cost control, compared to those of the second type. Additionally, they have less experience in the sector than in the latter.

Another aspect of relevance to this discussion is that of behavioral theory, insofar as the objective of cooperative organizations is to mitigate the risk of individual losses by optimizing social capital. This conclusion is supported by a range of studies conducted in various contexts (Italy, Spain) and over different periods. Cooperative banks have demonstrated their capacity to compete with commercial banks in their respective operating contexts, and, in periods of crisis, they have exhibited superior and more stable performance than commercial banks while maintaining their financial and social results. It is evident that the significance of these indicators varies in times of crisis, contingent on geographical location and temporal context (Stefancic 2016, Costa & Carini 2016, Pacelli et al. 2019, Sierra-Fernández et al. 2019, Zaman & Khan 2025).

Empirical research on the transformation processes of cooperative banks, particularly mergers, suggests that such financial operations can negatively affect the social mission of these banks. As a result, cooperative banks should maintain their current size and operate within specific local contexts to effectively pursue their social objectives (Martínez-Campillo & Fernández-Santos, 2017; Kuc, 2018; Coccorese & Ferri 2020).

The relationship between financial and social efficiency in stakeholder-oriented banks emerges not as a static trade-off but as a dynamic and context-dependent interplay. While some studies report conflicting objectives (Piot-Lepetit et al. 2014, Amersdorffer et al. 2015), others highlight potential synergies or at least non-conflicting coexistence (San-Jose et al. 2018, Martinez-Campillo et al. 2020). Divergences are often shaped by contextual factors such as regulatory environments, subsidy regimes, and regional disparities (Lebovics et al. 2016), as well as methodological choices. For example, studies using dual-perspective DEA models (Burgstaller et al. 2023) reveal shifts in efficiency rankings when social performance is accounted for, while others employing broader factorial analyses (San-Jose et al. 2018) may obscure intra-group variation. Additionally, misaligned timeframes between financial and social data can further distort findings (Amersdorffer et al. 2015). Ultimately, the evidence points to a heterogeneous efficiency landscape wherein the balance between social and financial objectives depends on institutional characteristics, maturity, and local conditions.

A critical implication is that stakeholder banks like the Raiffeisen institutions may strategically manage the balance between social mission and financial performance, especially using integrated reporting tools and tailored efficiency benchmarks. Future research could benefit from longitudinal and multi-level analyses that explore how changes in governance, subsidy regimes, or market competition shape this relationship over time.

4. Methodology and Variables

Building on previous research, this study applied the DEA technique, following the approach outlined by Charnes et al. (1978), using data from Raiffeisen Cooperative Banks, using five variables (two inputs and three outputs). The data was obtained from the financial statements published by the Raiffeisen Cooperative Banks and collected for 30 of them over the years 2022 and 2023. Due to data unavailability, nine out of the total 39 Raiffeisen Cooperative Banks were excluded from the analysis: the nine Raiffeisen Cooperative Banks are relatively small institutions that, taken together, account for 10% of total assets and approximately 12% of total employees among the 39 Raiffeisen Cooperative Banks operating in the region. While this exclusion may pose a limitation regarding full representativeness, the sample included covers most of the system's financial and human resources, allowing for reliable insights. Moreover, the consistency of results across the observed institutions reinforces the robustness of the findings.

Table 1: Input and output descriptive statistics

Year	Statistics	Total Assets (€)	Personnel Expenses (€)	Gross Loan Portfolio (€)	Financial Revenue (€)	Sponsoring / Social Funding[1] (€)
		INPUT	INPUT	OUTPUT	OUTPUT	OUTPUT
2022	Average	481350583	3875225	364199207	11204963	252345
	St.dev.	362204018	2615682	260424226	7499911	214051
	Max.	1754888061	11911353	1114464777	29825622	1054920
	Min	129421350	1131357	98389852	2738401	66120
2023	Average	446277701	4195636	330920463	14107498	271289
	St.dev.	341207908	2818873	234460194	9663457	180082
	Max.	1610000000	13117649	961800000	35042733	709828
	Min	124070000	1261926	92648883	3619070	72973
Total Assets (X1) = Total of all asset accounts (used to calculate social and financial efficiency)						
Personnel Expenses (X2) = total costs for the workforce (used to calculate social and financial efficiency)						
Gross Loan Portfolio (Y1) = Outstanding balance of the bank (used to calculate financial efficiency)						
Financial Revenue (Y2) = Revenue from loan portfolio (used to calculate financial efficiency)						
Sponsoring (Y3) = financial support for social activities (used to calculate social efficiency).						

In the fundamental DEA model, two main approaches can be applied: the input-oriented approach, which focuses on maximizing the proportional reduction of inputs while maintaining constant outputs, and the output-oriented approach, which aims to maximize the proportional increase in outputs while keeping inputs unchanged (Charnes et al. 1978). Our study employs both approaches within the constant returns to scale (CRS) model, as all Raiffeisen Cooperative Banks operate under comparable conditions and face the same environmental pressures. The assessment of technical efficiency is conducted in two stages. Initially, we determine relative technical efficiency using the input-oriented DEA model under CRS assumptions. To perform this evaluation, the minimum required number of Decision-Making Units (DMUs) or Raiffeisen Cooperative Bank Units is first established. Based on various considerations, the required minimum ranges between 12 and 15 DMUs. Since our dataset includes 30 DMUs, we can proceed to the next phase of the analysis. In a second step, having imbalanced data magnitudes, the data sample means are normalized (Golany et al. 1989, Boussofiane et al. 1991, Bowlin 1998, Dyson et al. 2001). After the mean normalizing process, the relative efficiency can be calculated. In the second stage, the authors performed a regression analysis to relate efficiency scores to factors for investigating their influence on relative efficiency in terms of financial performance and social impact.

5. Results and Discussion

Using Stata 18 for data processing, the analysis of the 30 Raiffeisen Cooperative Banks included in the study reveals that financial efficiency consistently exceeds social efficiency across all models and both years. Regarding financial efficiency, the results indicate that Raiffeisen Cooperative Banks perform exceptionally well, albeit in comparison to the most efficient benchmark. Conversely, social efficiency levels are significantly lower. Notably, the disparity between financial and social efficiency exceeds 100%. A summary of these findings is presented in Table 2.

Table 2: Efficiency score based on two models

Model	Mean	Mean (%)	St.Dev.
Fineff22 – input	0,906	90,6	0,070
Fineff22 – output	0,912	91,2	0,064
Fineff23 – input	0,932	93,2	0,067
Fineff23 – output	0,932	93,2	0,067
Soceff22 – input	0,439	43,9	0,159
Soceff22 – output	0,440	44,0	0,159
Soceff23 – input	0,600	60,0	0,162
Soceff23 – output	0,600	60,0	0,162

[1] In the context of Raiffeisen Cooperative Banks, the term sponsoring / social funding assumes a broader and institution-specific meaning that extends beyond its conventional interpretation as a commercial marketing tool. Rather than denoting solely promotional or brand-oriented activities, sponsoring within these cooperative banks encompasses all financial allocations directed toward non-commercial initiatives aimed at generating positive externalities for the local community. These include support for environmental sustainability projects, cultural and sporting events, social welfare programs (families), and community infrastructure investments. As such, sponsoring serves as a financial expression of the cooperative's social mission, reflecting a deliberate reinvestment of resources into the socioeconomic fabric of the region. This expanded definition aligns with the cooperative principle of member and community orientation and thus warrants a distinct analytical treatment in both financial and social efficiency assessments.

The results indicate a slight improvement in both financial and social efficiency from 2022 to 2023. However, the gap between financial and social efficiency remains unchanged.

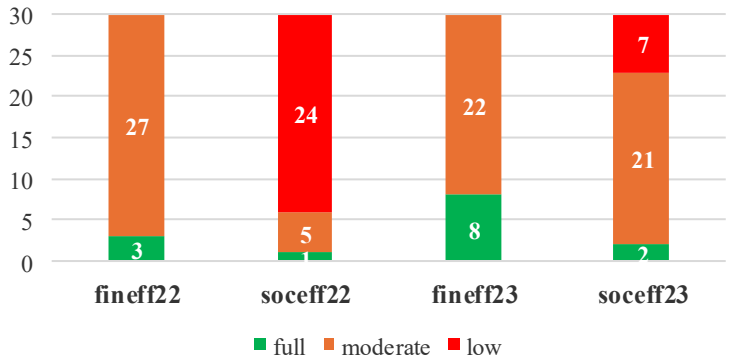


Fig.2: Distribution of Raiffeisen Cooperative Banks based on efficiency score (*Source*: Authors)

Moreover, the classification of Raiffeisen Cooperative Banks based on efficiency levels - low (score < 0.5), moderate (score between 0.5 and 1), and full efficiency (score = 1) - reveals that nearly all banks exhibit weak social performance (Figure 2). This contrasts with their financial efficiency, which is relatively high and close to optimal.

To examine the relationship between financial and social efficiency, Spearman's Rho Rank Order correlation coefficients were calculated (Efendic & Hadziahmetovic, 2017). The results indicate that there is no significant positive correlation between social and financial efficiency, suggesting that these two efficiency dimensions are unrelated (Appendix A). This finding remains consistent across both the input-oriented and output-oriented models.

The next step in our research will focus on the (in)efficiency causes (financial and social) of Raiffeisen Cooperative Banks (Bisceglia 2018, 2020). The selected Tobit model (Amore & Murtinu 2021) for explaining the observed Raiffeisen Cooperative Banks (in)efficiencies contains the following variables: Return on Equity (ROE), Return on Assets (ROA), Debt/equity ratio (DER), Operating Self Sufficiency ratio (OSS), number of bank members (NM) and number of branches (NB). Based on the detection of multicollinearity among the independent variables, the ROE variable has been excluded since strong collinearity with ROA (Appendix B). The following results have been obtained:

Table 3: Tobit Regression Results

Variable	Financial Efficiency	Social Efficiency
Intercept	0,58***	0,95***
ROA	0,108**	0,362***
DER	0,000**	-0,0002*
OSS	0,001*	-0,0034**
NM	-0,000	0,0000*
NB	-0,0008	-0,05***
Rho	0,4396	0.4322
Chibar2(01)	4.17***	5.74***
Waldchi2(6)	50.13***	31.47***

*, **, *** indicate the coefficient is significant at 10, 5, and 1 percent levels, respectively

The regression results indicate that ROA exerts a positive and significant influence on financial efficiency and social issues, with the impact on social efficiency proving to be considerably more pronounced than that on financial efficiency. While the remaining indicators are statistically significant, their impact is deemed to be less substantial in both financial and social terms. Regarding social efficacy, the number of branches, despite having a negligible impact, exhibits a negative correlation, indicating that an increase in branches is associated with a decline in social efficacy.

These findings show that the subsequent discussion will address the results. The increase in the number of branches can be motivated by commercial considerations, not so much to expand the service to the community, but rather to achieve economies of scale. This finding aligns with various studies that have demonstrated that the expansion of cooperative banks or the pursuit of mergers to achieve economies of scale can compromise social efficiency (Martínez-Campillo & Fernández-Santos, 2017; Kuc 2018; Coccorese & Ferri, 2020). Conversely, in terms of financial efficiency, the number of members and the number of branches are statistically insignificant in this context (Martínez-Campillo & Fernández-Santos, 2017). An important finding is the absence of a trade-off between financial efficiency and social efficiency, suggesting that neither is sacrificed for the other. This finding aligns with numerous studies in the field, which have consistently demonstrated the absence of a trade-off between financial efficiency and social efficiency (Wijesiri et al. 2015, Lebovics et al. 2016, San Jose et al. 2018, Martinez-Campillo et al. 2020).

A further dimension explored in this study concerns the relative social efficiency of Raiffeisen Cooperative Banks in Italy. The analysis, based on a Data Envelopment Analysis (DEA) model, reveals that these institutions generally perform at lower levels compared to a small number of more efficient peers. It is crucial to emphasize that the DEA approach is inherently relative and thus does not provide absolute efficiency scores based on sector-wide benchmarks. However, the results highlight notable disparities in how effectively different Raiffeisen Cooperative Banks convert labour and capital input into social outputs, particularly in terms of sponsorship activities.

The findings underscore the need for greater strategic emphasis on financing social initiatives, ensuring such efforts are better aligned with the banks' foundational cooperative mission. The observed variation in social efficiency could lead to a broader risk of mission drift, potentially driven by external pressures such as institutional reforms, increasing market competition, and the impact of digital transformation. These forces have, more broadly, been shown to weaken the traditional rationale for voluntarily organized cooperative structures (see Figure 1).

The Reform of the Banche di Credito Cooperativo (BCC) through Law No. 49/2016 mandated all cooperative banks to join a Cooperative Banking Group (GBC), thereby submitting to oversight by a central coordinating entity to enhance financial stability. In contrast, the Raiffeisen Banking system in South Tyrol was granted exemption by creating an Institutional Protection Scheme (IPS), as outlined in Legislative Decree No. 119/2018. This mechanism allowed the Raiffeisen Cooperative Banks to maintain strategic and operational independence while preserving their cooperative governance structure, avoiding integration into broader domestic banking groups.

For cooperative banks, maintaining operational and organizational independence should function to uphold their core social mission - a mission that must be both actively pursued and systematically assessed. Evaluating social impact should go beyond mere compliance with regulatory frameworks; it should serve as a reaffirmation of the institution's cooperative identity and enduring purpose. By incorporating accounting standards into the sphere of social reporting, cooperative banks can strengthen their accountability, support informed strategic decision-making, and more transparently demonstrate their role in advancing community welfare and local development. This transition marks a shift from governance rooted in tradition to one grounded in verifiable evidence, embedding cooperative principles within a structured and credible reporting framework.

Currently, social impact assessments often rely on narrative reports, spoken indicators, or generic ESG frameworks, many of which fall short in terms of comparability, consistency, and verifiability. This fragmentation undermines both internal utility for management and external confidence among stakeholders (Ebrahim & Rangan, 2014). Incorporating recognized accounting and sustainability standards, such as those developed by the ISSB (International Sustainability Standards Board) or the GRI (Global Reporting Initiative), could address these limitations. These standards offer key advantages (GRI 2021, ISSB 2023, Adams & Abhayawansa 2022): comparability (standardized metrics enable cross-sectional and longitudinal performance evaluations, crucial for governance and interbank benchmarking); reliability (audit-ready data increases credibility and reduces reputational risks associated with superficial or misleading claims/impact washing); transparency (a structured disclosure model supports stronger relationships with members, communities, and regulatory authorities).

Nonetheless, the increasing demands for capital adequacy and risk management, coupled with intensifying competition from other BCCs and commercial banks, may create tensions between financial resilience and the maintenance of social goals. Furthermore, the rapid evolution of digital banking technologies, while boosting efficiency and access, can inadvertently erode the relational and trust-based interactions that are central to the cooperative model. Despite the potential of technology to support the dual goals (financial and social), empirical research remains limited (Gozman et al. 2017). Existing studies tend to address either digital transformation as a purely business-driven strategy or technology's role in promoting financial inclusion, seldom combining these aspects into a unified analytical approach. Furthermore, the effectiveness of technological adoption is highly dependent on contextual factors such as regulatory frameworks, digital infrastructure, and the institution's mission. This gap is particularly pronounced for cooperative banks, whose dual commercial and social objectives are deeply embedded in their identity, making rigorous empirical investigation both necessary and urgent (Zavolokina et al. 2016, Tello-Gamarra et al. 2022, Ha & Nguyen 2025). The erosion of community engagement threatens to dilute the unique social function that Raiffeisen Cooperative Banks have historically embodied (Fernández-Torres et al. 2019, Ambühl et al, 2024).

5.1 Limitations of the study

While the study attempts to shed new light on the topic, certain limitations must be acknowledged. The findings are primarily restricted by the limited availability of data for all Raiffeisen Cooperative Banks, as gathering the necessary information from all 39 banks was not feasible. The absence of these banks in the study does not undermine the relevance or validity of the findings concerning the other institutions analyzed. However, despite their smaller size, future research should aim to include data from these banks as well. For their part, these institutions should voluntarily commit to greater transparency and openness toward researchers and scholars in the field. Additionally, the selected period presents another constraint. A valuable direction for future research would be to analyze results before and after the 2016 reform. Moreover, given the lack of available data, it would also be worthwhile examining other social outputs, such as the number of creditors beyond cooperative members, including individuals, families, and small businesses.

6. Conclusions

This research examined the Raiffeisen Cooperative Banks in Italy, focusing on the distinctive characteristics of this regional model. Drawing on several decades of experience, the Raiffeisen Cooperative Banks have exhibited a notable degree of adaptability and financial stability, successfully navigating various economic crises over time. Given the dual nature of the Raiffeisen Cooperative Banks' objectives, which encompass financial and social goals, and the paucity of research focusing on this aspect, the present study sought to assess the financial and social efficiency of these institutions. The study's findings revealed significant inefficiencies from a social perspective. A further finding of the study suggests that, in the absence of a trade-off, the Raiffeisen Cooperative Banks would be able to achieve both objectives unhindered. Furthermore, the analysis indicates that efficiency in asset utilization is crucial for both financial and social performance; similarly, the increase in bank size appears to harm social efficiency.

Institutional, technological, and competitive developments have indeed put the achievement of the social objectives of the Raiffeisen Cooperative Banks under strain. While social performance does not reach the levels of financial efficiency, it is vital for the Raiffeisen Cooperative Banks to continue to maintain a strong link to the local area by identifying the sector areas that are most exposed to the risks of modern times. In line with the principles of behavioral economics, cooperatives serve to mitigate individual risk. It is therefore necessary to intervene in the environmental, social, and governance spheres to achieve ESG (Environmental, Social, and Governance) objectives. Aligning with established standards such as the Global Reporting Initiative (GRI), the European Sustainability Reporting Standards (ESRS), and the UN Sustainable Development Goals (SDGs) enables these institutions to standardize, monitor, and communicate their social impact more effectively. Such alignment can help translate cooperative values - like community reinvestment, local development, and member participation - into measurable outcomes, enhancing both external accountability and internal strategic coherence.

In parallel, the application of accounting-based tools can further strengthen the measurement and management of social efficiency. Methodologies such as Social Return on Investment (SROI) and Activity-Based Costing (ABC) can quantify the social value generated and assess the cost-efficiency of specific social initiatives. By integrating key sustainability indicators - such as employee retention, gender equity, and cooperative member satisfaction - into routine reporting practices, Raiffeisen cooperative banks can improve benchmarking, enable data-driven decision-making, and reinforce stakeholder trust through transparent and verifiable disclosures. To institutionalize this approach, banks should consider forming ESG task forces, adopting third-party assurance practices, and partnering with academic or civil society organizations to co-develop social performance indicators tailored to cooperative principles.

Raiffeisen Cooperative Banks must simultaneously harness technological innovations to both advance their commercial capabilities and nurture client relationships - balancing face-to-face interactions with digital engagement - while remaining attuned to the unique social and local needs of their communities. Only by successfully integrating such technological advancements can Raiffeisen Cooperative Banks continue to fulfill the foundational mission that established their pivotal role in the Trentino Alto Adige/Südtirol region over a century ago.

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APPENDIX

Appendix A

Correlation test

Correlation test	2022		2023	
	fineff	soceff	fineff	soceff
fineff	1		1	
soceff	0.3207	1	0.2034	1

Appendix B

Multicollinearity test

Multicollinearity test	VIF	VIF
ROA	27.30	5.54
ROE	26.66	
DER	8.88	1.22
OSS	5.54	5.42
NM	3.89	3.85
NB	3.86	3.89
MEAN	12.69	3.98