

Decision-making bodies and performance of agricultural cooperative societies in Burkina Faso

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Abstract

The aim of this article is to analyse the nature of the relationship between decision-making bodies and the performance of agricultural cooperative societies in the province of Houet/Burkina Faso. We used a hypothetico-deductive approach, followed by a confirmatory multiple regression analysis of randomly collected data. The results indicate that the existence of the supervisory board or commission positively (1.037) and significantly (5%) affects the performance of agricultural cooperatives in the province of Houet/Burkina Faso. In addition, a negative relationship of -0.987 and statistically significant at 10% was observed between the existence of a board of directors or management committee and the performance of agricultural cooperative societies. This research suggests that the administrators of decision-making bodies should reframe the management style of directors or managers by emphasising the supervisory board or committee of agricultural cooperatives in accordance with the 2010 OHADA law.

Key words: Decision-making bodies, performance, cooperative societies.

JEL Classifications: P27, P13, G30

Paper type: Empirical research

1. Introduction

Since the beginning of 2014, the question of the performance of cooperative societies has always been a concern in view of the growing body of research into the social and solidarity economy (Boumali et al 2023, Le Guernic 2021, Koffi 2021, Snaibi 2020, Galor 2020, Gbede 2018, Hamissou 2014). In this situation, the players on the decision-making bodies of cooperatives are faced with the problem of making a judicious choice regarding their contribution to the performance of their entity. With this in mind, a number of researchers have carried out research into the determinants of the performance of cooperative societies. Some of the results of these studies are contradictory (Le Guernic 2021, Galor 2020, Agnimou 2019, Chomel 2017, Saisset 2016, Coofr de France 2016, IFA 2013, Zett 2013, Soulama 1998). In view of this divergence in results, several researchers recommend that the requirements placed on decision-making bodies should be strengthened in order to put in place an appropriate governance model that contributes to the performance of cooperative societies. This is why the introduction of the 2010 OHADA law has proved to be essential for reducing agency costs and having effective internal governance that enables cooperative societies to perform well (Le Guernic 2021, Yoli 2020, Agnimou 2019, IADC¹ 2018, ICA 2007, 2015, Chomel 2014). But classic theories of governance predict the failure of cooperative societies. This is because their organisation is based on the collective and democratic exercise of ownership and control rights. As a result, cooperative societies are likely to face multiple governance problems leading to institutional disadvantage.

Despite stricter requirements for decision-making bodies (OHADA 2010), agricultural cooperative societies in Burkina Faso are still suffering from operational problems. In several agricultural cooperative societies in Houet province, meetings of the board of directors or management committee are not held or do not function satisfactorily. When agricultural cooperative societies were set up, their articles of association provided for at least three (03) decision-making bodies. In practice, however, the majority of cooperative societies do not hold meetings in accordance with their statutory obligations. As a corollary to the failure to hold statutory meetings, there is a dysfunction in the characteristics associated with them (number of meetings, number of terms of office, directors' terms of office, length of meetings, etc.). Our agricultural cooperatives suffer from a number of shortcomings, particularly in terms of the organisation of decision-making bodies. In view of the above, they are struggling to grow. From this point of view, we can often use the image of an aeroplane to describe our cooperative societies, saying that they are like an aeroplane. They only survive when they are moving forward. They don't know how to tread water, let alone go backwards.

Furthermore, previous studies have not been lacking in shortcomings, as most authors have analysed the performance of cooperative societies on the basis of individual decision-making bodies. And yet, cooperatives have several internal decision-making bodies which can influence the performance of the cooperative in one way or another and simultaneously. The theoretical and empirical ambiguity of this object of study prompted us to apprehend this link, for which empirical research on this association has not provided conclusive results. Our study takes into account all the decision-making bodies governed by the OHADA 2010 green code for agricultural cooperatives in the Houet province. These were then adapted by our questionnaire addressed to the managers of agricultural cooperative societies in Houet province. To answer our research question, which is as follows: Is there a relationship between decision-making bodies and the performance of agricultural cooperative societies in Burkina Faso / Houet Province? We adopted a quantitative approach based on a questionnaire for data collection. The purpose of this research is therefore to determine the nature of the relationship between

¹ African Institute for Cooperative Law and Governance

decision-making bodies and the performance of agricultural cooperative societies in Burkina Faso/Houet Province.

The first part of this paper presents the theoretical framework and highlights the literature review. The second part is devoted to the research method and the results of the research. Finally, we end the article with a conclusion followed by implications.

2. Theoretical and empirical approach to the link between decision-making bodies and the performance of cooperative societies

This section presents the theory of property rights in the governance of cooperative societies. It uses the literature to explain the nature of the relationship between the existence of a board of directors and the performance of cooperative societies.

2.1 the theory of property rights in the governance of cooperative societies

In the governance of cooperative societies, the theory of property rights considers that any exchange between agents, and indeed any relationship of any kind, can be seen as an exchange of property rights. According to the work of Alchian and Demsets (1972), any exchange between agents corresponds to an exchange of property rights over objects. These property rights refer to the right to use an asset, to earn income from it and to transfer it to a third party. With this in mind, Koenig (1998) classifies property rights into four complementary dimensions, namely: the right of the owner of the business to benefit from the surplus generated by the activity; the right to increase or reduce the workforce; the right to transfer these two categories of rights to another entrepreneur; the right to make all decisions concerning the use of the asset, limited only by legal or contractual specifications. In addition, there is the absence of value creation and of regulation by the financial market of the shares held by the co-operators, leading to a certain number of consequences (Vitaliano 1983 and Cook 1995) in co-operative societies. As a result, the board of directors or management committee of cooperative societies suffers from the absence of a majority shareholder because of the democratic principle, given that ownership of the cooperative is collective. This leads to poorly defined ownership rights in cooperative societies, which in turn leads to poor diversification of assets, a lack of internal discipline, divergence of stakeholders, a tendency towards under-investment, and even decapitalisation. The fact that a cooperator benefits from the advantages of the collective organisation without sharing its duties and obligations could result in divergent interests among members.

2.2. The existence of the board of directors: effects on the performance of cooperative societies.

Although the internal governance of cooperatives has attracted the attention of many researchers, few empirical studies have examined the relationship between the existence of a board of directors and the performance of cooperative societies. The results of these studies are highly controversial. For cooperatives to function effectively, governance of the highest quality is essential, as in all other businesses (Le Guernic 2021, Koffi 2021, Cornee et al. (2020), Rijpens 2014). The work of Keasey et al (1997) has also studied the relationship between the existence of the board of directors of cooperative societies and performance. Using a variety of measures of the performance of cooperative societies, Keasey et al selected the Deshayes (1988) indicator for agricultural cooperative societies. The results of this study lead the authors to conclude that there is no significant relationship between the existence of the board and the accounting measure of performance. After what has just been mentioned, it is easy to understand that the existence of a board of directors in cooperative societies does not succeed in reducing agency conflicts between cooperative members and cooperative managers.

The introduction of a proportion of independent directors on the board of directors or management committee of cooperatives could guarantee the effectiveness of the control of those responsible for the performance of cooperatives. In this sense, it could be said that the greater the proportion of independent directors, the better the cooperative society performs. However, Pierre (2007) states that the board of directors does not influence the performance of cooperatives and associations. He shows that in Haiti, the board of directors or management committee of cooperatives is characterised by the fact that it is an economic instrument that the poor use to solve certain problems generated by the capitalist system. It can be said that these cooperative organisations are often managed by non-members who are capitalists who negatively affect the proper functioning of the management committee or board of directors of cooperative societies. The observed results indicate that the existence of the board of directors and the performance of cooperatives are negatively linked. Taking these statements into account, the existence of the board of directors negatively affects the performance of the cooperative society. This could mean that the board of directors or the management committee is unable to define the strategy for the sustainability of the cooperatives, to determine its mode of organisation while not being able to control the action of the director or manager by ensuring that it is consistent with the defined strategy. Conversely, Koffi (2021) and Kumar and Pathak (2008) contradict the earlier work of Pierre (2007). They apply the multiple regression method. The results of this study show that the existence of the board of directors of cooperative societies has no statistically significant effect on profit growth. This could be due to the fact that some members of the board of directors of elected cooperative societies do not work properly and do not participate in the cooperative's activities. Other members of the board of directors must not interfere in the management of the cooperative, as this would violate the practices and principles governing the coordination arrangements. The management of cooperative societies is often disastrous. Member participation is fictitious and the socio-economic impact is limited. Nevertheless, in Davis' model (1998), the board of directors remains the main means for members to monitor the behaviour of cooperative managers, while evolving in a context where it is probably more difficult to exert a particular influence on its functioning in order to give it meaning (Koffi 2021). As a result, the board of directors influences the performance of the cooperative through the behaviour of the managers. According to Hendrikse (2007), this part of the study focuses on the board of directors, regardless of whether real-life managers often strongly influence boards of directors while positively affecting the performance of the cooperative. If the presumption is that members are rational decision-makers, they will appreciate a strong board, which is responsible for delivering good profitability to members' farms as well as good service. However, it is almost impossible to make an objective assessment of the quality of the board's decision, not only for the members themselves, but also for outside observers such as researchers. According to Soulama (1992), the board of directors has a negative effect on the performance of cooperative organisations in Burkina Faso. This negative performance may be due to the fact that the cooperative spirit and the perception of the board of directors are poorly understood by the cooperative members. In addition, it suggests that the size of the board can also affect its functioning. A meeting of the Board of Directors with the cooperative members enables the managers to have an overall view of the participation of each member of the cooperative and all the members participate largely in the success of the cooperative. On the other hand, the author believes that the supervisory board has an impact on the smooth running of farmers' organisations in Burkina. To this end, the way in which the board of directors operates, which can be seen in the transparency and involvement processes in the internal governance of cooperative societies, should not be a factor taken on its own. The combination of other factors can affect the performance of cooperative societies. Subsequently, the work of Belhadi (2016) with a sample consisting of all French agricultural cooperatives in different sectors and of

different sizes, shows us the existence of a link between the size of the board of directors and the performance of cooperatives. The author shows that the relationship is not linear and that the performance indicators (net income/sales and contribution/sales) are influenced by the size of the cooperative. On the other hand, it reveals that the size of the cooperative does not influence the gross operating surplus/sales ratio and the equity/total balance sheet ratio of the cooperative. We can therefore say that size does not appear to be a substitutable variable. This result should encourage a certain caution on the part of those involved in cooperative societies who do not distinguish between these key differentiating factors, as well as on the part of governments when drawing up their support programmes for cooperatives, which are usually defined on the basis of the size criterion.

Koffi (2021), Le Guernic 2021, Adegbite (2015) and Kamdem (2014) support the idea that the governance system of cooperatives is generally based on internal mechanisms, in particular the board of directors and audit committees. The board of directors and the audit committee positively influence the performance of cooperatives to the extent that the board of directors plays a leading role in the success of the cooperative. His study reveals that the board of directors affects performance more than other modes of governance such as the cooperative principles and the director or manager of the cooperative society. It is therefore appropriate for co-operatives to focus more on the board of directors than on the other decision-making bodies of co-operatives.

The work of Koffi (2021), Yoli (2022), Cornee et al (2020), Gbede (2018) and Mahazril et al (2012) was conducted on the board practices of cooperative societies in some industrialised countries. The results of Mahazril et al (2012) state that in each industrialised country the results differ from one country to another. Drawing in particular on the work of Sayumwe (2006) in Great Britain, the board of directors of British cooperatives operates in a collegiate manner and is prohibited from using insider information for the personal benefit of board members at the risk of this being considered a criminal offence. The rules and attention paid to cooperative societies enable them to achieve their socio-economic objectives. With this in mind, the Board of Directors should focus on its composition by choosing members of integrity with a knowledge of cooperative principles and the organisation and operation of cooperative societies. This approach is developed by Toe (2014) in relation to traditional companies. He states that the composition of directors refers to the variety of cognitive resources that each member brings to the decision-making bodies. This is how we can have good functioning and organisation of decision-making bodies. Also, the study by Soboh et al (2009) on the performance of agricultural cooperatives shows that the board of directors of cooperative enterprises does not influence the performance of cooperatives. The collection and sale of agricultural products were not influenced by the existence of the board of directors. They state that the director or manager influences the performance of agricultural cooperatives, as it is the latter who are closer to the members and employees. The work of Cornee et al (2020), Mergoun and Hinti (2016), Declerck (2013) and Liebrand (2007) discuss the board of directors in the internal governance mechanisms of cooperative enterprises as the process and structure used to direct and manage the activities and affairs of a cooperative society. This board of directors helps to increase turnover, have lower cost inputs and ensure the profitability and accountability of cooperatives.

However, Boulet (1972) identifies factors that explain the management results of the Languedoc-Roussillon caves coopératives. In his analysis, he highlights the difficulties of decision-making by the board of directors of cooperatives. This decision-making has a negative impact on the economic performance of the cooperative winery. This could mean that the Board of Directors is experiencing difficulties and is unable to take decisions, which means that certain directors or managers of the cooperatives are influencing the Board's decisions. It is in this

sense that we can say that it is no exaggeration to say that the problem of decision-making in a cooperative is a veritable vicious circle.

Cooperatives are also faced with problems relating to governance. Cooperative boards of directors play an important role in linking the actions of managers to the interests of cooperative members. Corporate governance applies specifically to cooperative societies whose objective is the satisfaction of the cooperative members. As such, sound and effective governance contributes to improving the financial performance and sustainability of cooperative societies (Frey et al. 2015). In the same vein, Ouédraogo (2008) states in a study using the Likert method² that research into cooperative governance begins with the study of the board of directors or the management committee depending on the size of the cooperative. It represents an opportunity for co-operators to meet, discuss the co-operative and make suggestions together. The board of directors or management committee therefore occupies an important place in the governance of cooperatives. The work of Burress et al (2011) addresses the issue of the board of directors of cooperative enterprises and cooperative performance. The quantitative results relating to agricultural cooperatives measure financial performance through its indicator on return on equity, which is the result of the net income/equity ratio. The board of directors in the governance of cooperative enterprises has a positive influence on cooperative performance in the USA through its transparency and involvement in the success of agricultural cooperatives. The Chairman's perception of the Board of Directors as active is a driving force that encourages all Board members to do their best for the cooperative. Co-operators take part in the various training courses and meetings organised by the Board of Directors. This demonstrates the significant participation of cooperative members in the decision-making bodies of cooperative companies. As a result, the proportion of members present or having voted at the last election of directors is high. From the above, we can see that the board of directors of cooperatives does influence performance, but we can say that the influence of this variable is greater on the performance of cooperative societies than purely structural determinants. In sum, we formulate the following relative hypothesis:

H: the existence of a board of directors or management committee has a positive and significant effect on the performance of agricultural cooperative societies in Houet province.

3. Research method and results.

This section presents the research method, followed by an interpretation and discussion of the results of the analysis method.

3.1. Research method

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3.1.1 Data collection methods and tools

A quantitative approach (Creswell 2003) is used to address our problem. Our epistemological position is inspired by positivism³ and determinism⁴, because we are seeking to verify, test or falsify a questionnaire closed to large numbers. As a researcher, we therefore need to come closer to an ideal of universal objectivity (Comte 1798-1857).

² A Likert scale is a psychometric tool used to measure attitudes in individuals. It consists of one or more statements (statements or items) for which the respondent expresses a degree of agreement or disagreement.

³ Positivists apply the principle of causality, generally translated into a few traditional statements (Bordas, 2018):

⁴ The determinist: co-operatives form an immense mechanism made up of real facts that follow one another according to the principle of causality.

Data was collected using a questionnaire designed for this purpose. The quantitative analysis confirms or refutes our research hypotheses. A sample of 119 respondents from the 13 communes of Houet province was used in our quantitative study. From this sample, a questionnaire was distributed in advance to each respondent so that they could familiarise themselves with the questions before we arrived to collect the data. Participation by the managers of the agricultural cooperative societies was voluntary, with no constraints. We collected the data face-to-face with the respondents. In addition, we enlisted the help of some ZAT managers to distribute the questionnaires and collect the data. Table 1 below shows how the questionnaire was used.

Table 1: Overview of how the questionnaire was used

Questionnaires Elements	Total questionnaire distributed	Questionnaire returned	Questionnaire operated after return	Questionnaire not used after return
Total number of questionnaires	289	200	119	81
% according to ⁵ E Q	100%	69,20%	41,17%	28,02%

Source: Study data.

However, after random distribution of our questionnaire, table 2 shows that 7.56% of the agricultural cooperative societies with a board of directors (SCOOP-CA) versus 92.44% of the simplified agricultural cooperative societies (SCOOP-S). We surveyed nine (09) managers of agricultural cooperative societies with a board of directors compared to one hundred and nineteen (110) simplified agricultural cooperative societies (SCOOP-S). Table 2 shows the types of agricultural cooperative societies and the categories of people surveyed in Burkina Faso/Houet province.

Table 2: Forms of agricultural cooperative societies (SCOOP-CA and SCOOP-S) in Houet province.

Agricultural cooperatives	Frequencies	Percentage	Manager/Director
SCOOP-CA	09	7,56	9
SCOOP-S	110	92,44	110
Total	119	100	119

Source: Study data.

3.1.2. Data analysis methods and tools

Our field of study has enabled us to use a range of methods for to summarise and interpret the data. and interpret them. To do this, we used the STATA 15 statistical software, importing the database created as a result of our surveys. which will enable us to carry out univariate, bivariate and multivariate analyses. multivariate analyses. We therefore followed the approach adopted by Thiérta (2007) for our study. We adopted multiple linear regression regression, a technique used to to identify the linear relationship between a quantitative dependent variable and several independent, quantitative or binary variables. To this end, the multiple linear regression model of our study takes a form with the dependent variable (log discount):

Model: $\text{Logristournei} = \beta_0 + \beta_1 \text{lifetime}_i + \beta_2 \text{participation}_i + \beta_3 \text{membership}_i + \beta_4 \text{training}_i + \beta_5 \text{ca_cg}_i + \beta_6 \text{cc_surve}_i + \beta_7 \text{partenariati}_i + \varepsilon_i \forall i \in \{1; N\}$.

⁵ Use of the questionnaire

⁶ Board of Directors or Management Committee

⁷ Supervisory board or commission

3.1.3. Variables used in the study.

This section first explains the dependent variables, then the independent variables and finally the control variables. Some of the indicators we have chosen come from empirical studies. They are largely corroborated by the work of Boumali et al (2023), Yoli (2020), Saisset (2016), Rijpens et al (2015), Mahazaril et al (2012), Burress et al (2011), Soulama and Zett (2000) and Robert (2008) on decision-making bodies and the performance of cooperative societies. The survey questionnaire made it possible to collect financial information such as patronage refunds or surplus (considered in the traditional company as being the net result). From this point of view, it can be considered as an indicator of the agricultural cooperative's financial performance. This indicator is therefore used in this study as a dependent variable. Several authors have used this variable in similar studies, such as Declerck (2013), Sangue (2011) and Deshayes (1988). As for the independent variables, the study focuses on decision-making bodies. The existence of the board of directors or management committee (ca_cg) is the governing body of the cooperative society with a board of directors. It is defined as a group of legal entities or individuals who must administer a cooperative and whose role is to manage the major orientations of the organisation. It is generally the body responsible for determining strategic choices. It takes the value 1 if a ca_cg exists and 0 if it does not. This variable was used by Burress et al (2011). The existence of a supervisory board or supervisory commission (cc_surv) is the body which supervises the activities of the cooperative society with a board of directors. It is defined as a group of legal entities or individuals who ensure that the cooperative society runs smoothly. It takes the value 1 if there is the existence of cc_surv and 0 if not. This indicator is the result of our qualitative study. The size of the board of directors or management committee (taille_ca_cg) of cooperative societies is measured by the number of directors. It is made up of a minimum of three members and a maximum of twelve members (OHADA 2010). This number of directors may be temporarily exceeded in the event of a merger with one or more companies, up to the total number of directors in office for more than six months in the merged companies, but may not exceed twenty-four. According to Carter et al (2000), Hillman et al (2007) and Galia and Zenou (2013), board size is measured by the total number of directors.

3.2. Results and implications

This section presents the results of the study based on the questionnaires and documents, as well as the similarities and differences between the results of our work and those of previous studies.

3.2.1. Descriptive analysis of the variables in our study

❖ Descriptive analysis of the continuous variables in the study.

Table 3 shows that the average age of the agricultural cooperative societies surveyed was 3.94, or 04 years. Also, the average number of directors in decision-making bodies such as the board of directors is 4.5, i.e. five directors in agricultural cooperative societies with a board of directors, whereas cooperative societies with a management committee have an average of 3.5, i.e. four directors in decision-making bodies. The table shows the descriptive analysis of the continuous variables in the study.

Table 3: Description of continuous variables in the study.

Variables	Number	Mean	Median	Std.dev	Max	Min
Age of scoop	119	3.94	3	4	09	2
Ca (board of directors)	09	4.5	05	4.25	12	3
Cg (management committee)	110	3.5	04	5.25	5	2

Source: Author's data

In addition to the descriptive analysis of continuous variables, we present the discrete variables in terms of frequencies and numbers. This paper shows that 97.5% of agricultural cooperatives allow free and voluntary membership. These co-operatives are voluntary organisations, open to anyone who wishes to be a co-operator. In addition, 86.6% of cooperative members participate in the economic activity and contribute equally to the capital of the agricultural cooperative society. In addition, the majority of the cooperative societies surveyed (58%) offer education and training to all their cooperators and managers so that they can contribute effectively to the development of the agricultural cooperative society, unlike 42% of the cooperatives that do not apply the fifth cooperative principle in the province of Houet due to a lack of financial resources. The table presents the discrete variables in terms of frequencies and numbers.

Table 4 : Discrete variables in terms of frequencies and numbers

Variables	Number	Frequency%
Participation	103	86.6%
Membership	114	95.7%
Training	69	58%
Partnership	105	87.6%

Source: Author's data

3.2.2. Analysis of the results on the nature of the relationship between decision-making bodies and the performance of agricultural cooperative societies.

The results of our study show that the existence of a supervisory board or commission has a positive effect on the performance of agricultural cooperative societies. This positive link at 1.037 and significant at 5% indicates that the existence of a supervisory board or commission has a positive effect on the performance of agricultural cooperative societies, as this body monitors the smooth running of cooperative societies. In this way, the supervisory board or commission observes or supervises the activities of the cooperative members and the other decision-making bodies. We can say that the supervisory board or commission of agricultural cooperative societies is a permanent body of the society with a management board made up of cooperative members elected by the general meeting, whose function is to control the actions of the management board and to grant prior authorisations where required by law or by the society's articles of association. In the context of Houet province, the supervisory board or commission is responsible for ensuring that agricultural cooperatives function properly, and for reporting to the other cooperative members. This could justify the positive relationship between the existence of the supervisory board or commission and the performance of the agricultural cooperative society in Houet province.

On the other hand, analysis of the data reveals a negative and significant relationship between the existence of a board of directors or management committee and the performance of agricultural cooperative societies in Houet province. The negative coefficient is -0.987 and statistically significant at the 10% level. The negative sign is contrary to our expectations, and may have various justifications. It can be explained by the fact that the directors of the board or the management committee are not salaried employees and also do not receive specific remuneration for their role in agricultural cooperative societies. As a result, the members of the Board of Directors or the Management Committee do not give their best, which makes the decision-making body of agricultural cooperative societies ineffective. This behaviour on the part of the body's administrators lets us know that there is no cooperative spirit, as announced by the International Cooperative Alliance (ICA). This has a negative impact on the performance of agricultural cooperative societies. In this sense, the board of directors or the management committee of agricultural cooperatives is not intended to manage the major orientations of the farmers' organisation. It is generally the body responsible for determining the direction of the

agricultural cooperative. In most of our agricultural cooperatives, the board of directors or the management committee of agricultural cooperatives rarely meets to examine the problems of the agricultural cooperative. In view of this, it can be said that the board of directors or the management committee of agricultural cooperatives does not appear to be the body responsible for the administration of the agricultural cooperative society.

Observation of the control variables in the model shows that life span has a positive and significant effect at 1% on the performance of agricultural cooperative societies. The more time passes, the more the agricultural cooperative society reaches its break-even point and begins to be more profitable than before. On the other hand, voluntary membership open to all has a negative effect on the performance of agricultural cooperative societies, significant at 10%. This negative effect shows that the more people join the co-operative, the more their objectives diversify, as the new co-operators seek to satisfy their own economic and social needs; insofar as in agricultural co-operative societies the costs are lower than in conventional businesses. Transparency of costs and equal treatment of members are major characteristics of the cooperative spirit. All cooperative members receive the same service and the same attention, regardless of the size of their deposit. Further analysis of the data from our field survey also indicates a positive and significant link at 5% on the partnership between agricultural cooperatives and the performance of agricultural cooperative societies. This cooperation reduces the cost of acquiring goods between cooperatives. This makes it possible to achieve an economy of scale corresponding to the reduction in the unit cost of a purchased product obtained by the cooperative by consolidating the partnership. Table 5 presents the results of the estimation of the relationship between decision-making bodies and the performance of agricultural cooperative societies in the province of Houet.

Table 5: Estimation results and verification of model significance

Independent variables	Model (logristourne)
Age of the agricultural cooperative society	0.801*** (0.134)
Participation 1	0.836** (0.320)
Membership 1	-0.610* (0.316)
Training 1	0.653 (0.320)
Existence of a board of directors or management committee	-0.987* (0.514)
Existence of a supervisory board or commission	1.037** (0.514)
Partnership1	0.701** (0.320)
Constant	8.72*** (0.648)
Comments	119
R-squared	0.2675

*** significant at the 1% level, ** significant at the 5% level and * significant at the 10% level. Robust standard deviations are shown in brackets.

Source: Author's data

To this end, the multiple linear regression model used in our study takes the form of :

$$\text{Logristournei} = 8.72 + 0.801 \text{ lifetimei} + 0.836 \text{ participationi} - 0.610 \text{ membership i} + \\ (0,134) (0,320) (0,316)$$

0.653 trainingi -0.987existence ca_cgi + 0.316 existence cc_survei+ 0.701partenariati (1)
(0,320) (0,504) (0,514) (0,320)

The hypothesis states that the existence of a board of directors or management committee has a positive and significant effect on the performance of agricultural cooperative societies in Houet province. The result obtained contradicts the first hypothesis, as it shows a negative coefficient of -0.987, statistically significant at 10%. The negative sign is contrary to our expectations. In the same vein, the high representativeness of certain stakeholders and the lack of qualification of a large number of elected board members with controversial views are weaknesses that call into question the performance of agricultural cooperatives in the province of Houet in Burkina Faso. The variable size of cooperative societies does not appear in the model, because the model is unable to take account of all the variables of interest given their high correlation. The estimation of the model without the size of the cooperatives could be explained by the presence of a strong multi-collinearity of the variables in the model. The absence of the size variable is linked to the application of the Akaike Information Criterion method (IAC⁸) which combines q ($q \leq p$) of the variables which maximises the quality of the regression thanks to a step-by-step search for the variables (successive additions or successive eliminations) in order to arrive at an optimal solution for the model. Based on the elements of our empirical research, we propose the general model of empirical and theoretical studies on the nature of the relationship between decision-making bodies and the performance of cooperative societies in the province of Houet.

3.2.2. Discussion of the results

In this section, the discussion will focus on the effect of decision-making bodies on the performance of agricultural cooperative societies. The results of the regression analysis show a negative and significant relationship at the 10% level between the existence of a board of directors or management committee and the performance of agricultural cooperative societies. These data are consistent with those of Soulama (1992), whose results show that the performance of cooperative organisations is not due to theoretical management standards (board of directors, etc.). He advocates organising the decision-making bodies of cooperative societies. This concordance of results with our research could be due to the fact that both studies are based on Burkinabe cooperative societies. With a different methodology, we arrive at the same results insofar as the cooperative societies present the same characteristics, even if Soulama's study was carried out some thirty years ago. These results do not confirm, for example, those found by Collette and Pigé (2008), who suggest that the existence of a board of directors has positive effects on the performance of cooperatives. This difference in results may be linked to the field of study, as Pigé and Collette's study is based on European cooperatives. In these cooperatives, the decision-making bodies function to good effect, compared with cooperatives in Burkina Faso, where these decision-making bodies were only set up in 2010 under the OHADA law. Also, the application of this law is proving difficult in some agricultural cooperative societies, given the level of education of the directors. Even though some cooperative societies have decision-making bodies, their operation still causes huge problems. In the same vein, the results of the study by Charreaux (1997, 2000), Ouédraogo (2008) and Rijpens (2014) show that cooperative societies, thanks to their boards of directors, manage to achieve their economic and social results.

Our results do not corroborate those of Jensen (1993) and Yermack (1996), EA (2009), Bianchini (2007), Bianchini et al. (2008), Couderc and Marchini (2011) and Soboh et al. (2009). The work of ACI (2015) and Hendrikse (2007) goes in the same direction as that of Pigé and Collette (2008) and in the opposite direction to our thesis by stating that the existence of advice

⁸ The Akaike information criterion (AIC) is a measure of the quality of a statistical model proposed by Hirotugu Akaike in 1973.

contributes to improving the performance of agricultural cooperatives. Insofar as the mission of the board of directors of cooperative companies is to define their growth strategy, to control the action of the director or manager by ensuring that it is consistent with the predefined strategy. These contradictory results in our context could be explained by the fact that board or management committee members in agricultural cooperative societies in Houet province are not salaried employees. Consequently, some of them are not proactive in the management of agricultural cooperative societies in Houet province. They may use their actions to further their personal interests, to the detriment of the interests of the agricultural cooperative society. With this non-salaried status, directors will not be able to fully play their role of controlling and monitoring managerial behaviour, so that the interests of the cooperative society are protected and maximised. To this end, agricultural cooperative societies should provide for swearing-in before undertaking any inherent task as a director on decision-making bodies.

The relationship between the size of the board of directors or management committee and performance shows a positive (0.326) and non-significant relationship in the province of Houet. This result is not in line with those of several studies carried out in France and Norway respectively by (Mertens 2010, Forbes and Milliken 1999) stipulating that the size of the decision-making bodies (board of directors or management committee) negatively affects the effectiveness of the cooperative and in the same sense the work of Bohren and Odegaard (2004) in Norway confirms those of Mertens (2010) and Forbes and Milliken (1999). However, they corroborate those of Burress et al. (2011) in the USA who conclude that the size of the board of directors does not affect the performance of the agricultural cooperative. These differences in results could be explained in particular by the indicator used to capture the performance of the agricultural cooperative in the province of Houet and the cognitive capacity of the directors concerning the cooperative spirit.

3.2.3. Robustness of model results

In the model, the regression focuses on the influence of decision-making bodies on the performance (Log ristourne) of agricultural cooperative societies in the Houet province. We find that the r^2 is 0.2675, which means that the chosen model explains about 27% of the total variance. Even if this proportion appears rather limited or low, it is not intrinsically bad, since the data in the article are cross-sectional. This is one of the main reasons why it can be very good to have low R-squared values (Colas 2020). We find the regression interesting because it is significant overall (Fischer test: Prob > F=0.000) and there is also an absence of collinearity. In addition, these variables are significant at the 1%, 5% and 10% thresholds respectively, which adds to the interest of the model. In addition, the constant should be eliminated, as it has a low value and is not significant.

4. Conclusion

The aim of this article is to improve our understanding of the influence of decision-making bodies on the performance of agricultural cooperative societies in Burkina Faso. We propose a new approach to the question of the performance of agricultural cooperative societies with regard to decision-making bodies in order to develop a model. The contributions of this article are seen at the managerial, theoretical and methodological levels. In managerial terms, our results show that agricultural cooperative societies in Houet province need the existence of a supervisory board or commission more than a board of directors or management committee to achieve their performance in financial terms. As a result, an effort should be made to redefine the missions and composition of directors on the board of directors or management committee of agricultural cooperative societies. This article provides explanations that will be of interest to all members of the academic community. We have just briefly presented the managerial

contributions. These contributions have their limitations, but they allow us to identify research perspectives. At the theoretical level, this research has revealed a determining variable in the performance of agricultural cooperative societies, which would enrich this field in our context: the existence of a supervisory board or commission in agricultural cooperatives. Other control variables could also enrich the empirical research.

From a methodological point of view, this article proposes a model linking decision-making bodies and the performance of agricultural cooperative societies in the province of Houet, while specifying the level of significance of the determinants of the performance of agricultural cooperatives. Our research is non-dynamic and limited in nature, as it does not allow for the analysis of evolutionary phenomena (cross-sectional data). Also, it uses data collected on a random statistical sample of 119 individuals, which did not allow us to further enrich our conclusions, the fact of collecting data only from managers of agricultural cooperative societies in the province of Houet generates another limitation. For future research. It would therefore be interesting to deepen the study by considering other methods of evaluating the performance of agricultural cooperatives based on scores from governance rating agencies. We suggest recontextualising the knowledge developed within a constructivist epistemological paradigm. It would therefore be desirable to extend the research to all cooperative societies in the 17 countries of the Organisation for the Harmonisation of Business Law in Africa (OHADA) in the WAEMU area in order to assess similarities and differences.

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