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Research Article

THE MEDIATING ROLE OF FAMILY MANAGEMENT IN THE RELATIONSHIP BETWEEN MANAGEMENT STYLES AND FIRM ECONOMIC PERFORMANCE

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Abstract

The study aims to explore the relationship between leadership styles and the firm' economic performance mediated byfamily management. A questionnaire survey was conducted to collect data from both managers and employees across 59firms situated in Bamako and peripheries, Mali. On basis of 733 recovered questionnaires, the research used the regression analysis method to test direct effects, while the Sobel procedure have been applied to test indirect effects. The results show that in a poor business environment, authoritative, persuasive, and participatory leadership styles exhibit a significant and positive correlation with firm economic performance. However, the direct impact of the consultative style is found to be non-significant. Furthermore, authoritative, persuasive and participatory styles manifest significant indirect effects through the mediation of family members' involvement in firms' management.Surprisingly but reasonably, family management has linear negative impact on firm' economic performance. These conclusions align partially with the perspectives of family involvement and family governance theories, unveiling the diverse effects of management styles on firm economic performance and underscoring the necessity for family environment improvement.

Keywords: Management styles; Firm Economic performance; Family members' involvement; Family management.

INTRODUCTION

Mali is a West African country whose economic development has recently been plagued by frequent military coups, political instability, and international strife. In the last two decades, Mali has adopted a policy of integrated and global innovation-driven development Pedercini [1][2]. In this process, the rise and growth of firms played an important role. However, the unstable environment, and low level of education posed significant challenges to its firms' sustainability. There is a risk of failure at any stage of the firm's development, according to Josefy, Harrison, Sirmon and Carnes [3]. Hence, to this day, many managers are still struggling to increase their firms' performance in this environment. It is precisely because of the turbulence, and low quality of human resource, the generation of organizational performance of Malian firms is variable, fussy, and complex, and it is more dependent on the contingency and adaptation of managers rather than the dependence on institutions and resources as firms in a stable environment. Thus, Malian firms maybe just in a position to provide evidence for upper echelons and contingency theories.
According to the upper echelons theory, the knowledge and experience of managers are not enough to support their rational decision-making in the face of complex environments. Therefore, their characteristics, traits, and styles will affect firms' strategic decisions and, in turn, economic performance. Prior literature has demonstrated the effects of management styles on firm performance. For example, Choi and Lee [4] used data from fifty-four firms to measure the relationships between four knowledge management styles (dynamic, system-, human-oriented, and passive) and firm performance. Agbo [5] examined the influence of conflict management styles, including compromising, obliging, dominating, and avoiding ones, on organizational performance.

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As demonstrated by Wang, Chich-Jen and Mei-Ling [6], the charismatic, transformational, and visionary management styles are positively related to organizational performance. Furthermore, Andrej, Breznik and Natek [7] argued that the effect of management styles is indirect, heterogeneous, and interactive. They confirmed the effectiveness of the transformational style in improving organizational performance but did not support the significant effect of the transactional style. They even found that successful managers could adopt and combine both styles in managing knowledge and improving organizational performance when knowledge management actions fail.

The above literature inspires us, but there are still yet gaps. First, existing studies discussed management styles in a one-sided manner, focusing on conflict style Agbo [5], knowledge management style Choi and Lee [4], transformational style Andrej, Breznik and Natek [7], etc. These styles are related to a project or business rather than a systematic management style at the organizational level. The most widely accepted and traditional classification of management style is that it covers authoritative, persuasive, consultative, and participatory ones, which were proposed in contingency theory by Likert [8]. Considering the current level of firm development in Mali, traditional management styles may be better suited to describe and measure the characteristics of Malian managers than modern styles. However, no literature has systematically measured the impact of four traditional management styles on economic performance.

Second, in the context of the global pursuit of innovation-driven development, and talents policy, we believe that rather than simply measuring the direct effect of management styles on firm' economic performance, it is more meaningful to explore the mediating effect of family members' involvement in firm management. This approach can provide insight into important decisions, such as whether Malian firms should attach great importance to improving the family environment and whether the management styles of Malian corporate managers should pay attention to family environment as members' involvement in management, and governance. Hence, in the context of corporate talents innovation and development, it is of great significance to explore a fitted management style or an effective combination of styles that align with the dual objectives of family environment improvement and economic performance improvement[9].In the literature database, we didn't find any similar studies. Finally, as proposed by contingency theory, successful managers have several different management styles and would choose to show one of them to match the specific situation Inyang, Agnihotri and Munoz [10]. Thus, within corporate innovation development, exploring a suitable management style or a blend aligning with both enhancing family governance and improving economic performance is crucial.However, the results of literature searches indicate a gap in studies following this approach.

Hence, this study endeavors to answer three researchquestions. The first one probes into the significant and heterogeneous effects of management styles on firm economic performance, while the second delves into the mediating role of the family management within this relationship. Finally, the last one is about the direct relationship between family management and firm' economic performance. The measurement of direct and indirect effects will draw support from the dataset comprising Mali firms. Additionally, the potential contributions of our study can be encapsulated as follows. Firstly, it systematically analyzes and measures the influence of four traditional management styles on firm economic performance, thus providing evidence for the upper echelons theory, contingency theory, and family management theory. Secondly, it explores the mediating influence of the family management on the relationship between management styles and economic performance, thereby enriching the relevant literature within the domain of family environment influencing firm' governance. Lastly, the study's sample encompasses firms in Mali. Compared with existing studies, predominantly derived from developed or emerging developing countries[11], our research holds greater reference value for the management of firms and the economic development of poor countries. The subsequent sections of the paper are structured as follows. Part 2 offered several research hypotheses developed in line with the established framework. Part 3 detailed the research methodology, including sample presentation, data collection, measures, and statistical techniques and modeling. Part 4 outlined the results of our empirical study. The discussion of results and the summary of findings were then presented in parts 5 and 6, respectively. Additionally, implications, limitations, and future research directions were demonstrated in this part.

HYPOTHESES DEVELOPMENT

Management styles and firm economic performance

Leadership is critical to organizations' ongoing success in every sector of today's competitive global business markets. They impact significantly not only small businesses but also the world's largest corporations. According to upper echelons theory, the firm strategic decisions will depend on a manager's management style to some extent. Suitable management styles will then bring about effective decision-making and improve the economic performance of firms. Successful managers with suitable management styles often perform as follows. First, consultative managers can effectively motivate their subordinates, resulting in relatively high management performance. A consultative management style is conducive to shaping democratic culture, thoroughly stimulating the achievement motivation of subordinates and enhancing their work enthusiasm, Reglar [12]. Second, participatory managers can have a demonstration effect on employees, causing an increase in work quality and labour productivity, according to Motamedzade [13]. When managers learn more about grassroots operations and participate in factory work, they will focus more on building a more humanized working environment and have more opportunities to develop low-cost and efficient work methods, as Motamedzade [13] stated. Third, authoritative managers can regulate their organizations and promote the implementation of systems, thus improving organizational efficiency. As noted by Lee and Lee [14], authoritative leadership has a positive and significant effect on employee job satisfaction since it can assist in building and improving a well-organized corporate culture. Finally, persuasive managers can enable subordinates and employees to follow their instructions and suggestions, resulting in organizational synergy. Becker-Olsen, Cudmore and Hill [15] proposed that the persuasive management style would be suitable for implementing modern and long-term oriented strategies such as innovation,social responsibility, and environmental protection. However, contingency theory implies that the effectiveness of management styles depends on the organization's context. That is, not all suitable management styles are appropriate and effective for a given situation. From the perspective of power concentration, authoritative managers have the most significant power, the power of consultative managers is dispersed to their subordinates, and the power of persuasive and participatory managers is in the middle level. It can be inferred that for the goal of improving economic performance, the effects of authoritative and consultative management styles in a given situation are likely to be opposite, or at least one of them is invalid. Obviously, the difference between the two is that the authoritative style is suitable for small-sized organizations with low interpersonal trust in changing and complex environments, while the consultative style is suitable for large firms that have high confidence, sound supervision mechanisms, and good work routines [16]. Hence, in Mali's corporate environments, the authoritative style will be the most effective to increase economic performance, followed by the participatory and persuasive styles, and finally, the consultative style. The consultative style is possible without a significant effect on economic performance improvement.

Today's business environments, dominated by market competition, international crisis, and political turbulence, require firm managers to develop strategies and adapt their leadership styles to the dynamic environment changes. Managers play an important responsibility in the firms' organizational performance and are, in all steps, believed accountable Hosie and Nankervis [17]. According to Locke [18], we can argue that Frederick W. Taylor was the first theorist to work on the relationship between management styles and firms' economic performance. He developed, therefore, the scientific management theory to increase productivity by strategically controlling employees' performance in the firms. First, the leadership style aids managers' performance, Jiménez [19]. Cui, Lim and Song [11] argued that when the transformational and transactional styles are combined, they may better stimulate the firm's innovation performance. The transformational leadership style has a direct and positive effect on managerial performance, as noted by Nguyen, Mia, Winata and Chong [20], and can increase the enterprise's performance, Gong and Subramaniam [21] and Hodge and Greve [22]. Knowledge flows, collisions, and fusion between knowledge and the fusion of knowledge and information bring capital, technology, and management. Information exchange theorists such as Heffner and Sharif [23] mentioned that in previous studies. Although upper echelons theory establishes the relationship between management styles and firm economic performance, Katsaros, Tsirikas and Kosta [24]Kim and Toya [25], there is still a lack of mediating mechanism between them.

We then proposed the following hypothesis. **H1:** In poor business environments, (a) authoritative, (b) participatory, and (c) persuasive management styles are significantly and positively associated with firm economic performance, but the effect of (d) consultative style is not significant.

Employee conditions and motivation and firm economic performance

The employees' conditions play a more important role in employees' motivation for the job. Adapted from Marisela [26], we can argue that employees' job satisfaction, psychological empowerment, and organizational citizenship are key factors in determining organizational performance. Resource-based theorists have consistently highlighted that R&D human capital is an important source of core competitiveness and sustainable competitive advantage because the tacit knowledge mastered by R&D employees has VIRN characteristics, Coff [27]. Prior studies have demonstrated the proposition that employee conditions positively affect organizational performance. Maslow [28] suggested that workers' needs satisfaction is an essential driver for the firm's survival and growth. He demonstrated that when the workers are satisfied, they could be motivated and engaged, affecting the enterprise's growth. So, human resources development and motivation are vital firm-specific dynamic capabilities, Chen and Yu [29] that significantly affect firms development.

We therefore proposed the following hypothesis. **H2:** The employee conditions and motivation don't affect firm economic performance in poor business environments.

Family management and firm economic performance

Innovation investment decision is another matter of strategic choice, according to Sirmon and Hitt [30], and different kinds of owners are bound to impact the firm innovation investment and outcomes, note Matzler, Veider, Hautz and Stadler [31]. That influence can produce negative or positive effects on the firm management while changing the behaviors, the strategy, and the manager's power. Hence, in a study on the relationship between a family's business and firm performance, Azizi, Bidgoli and Taheri [32] argued that ownership and family members' involvement promote entrepreneurship and encourage managers to invest in the skills and talents of family members. Its definition is highly complex and can lead to confusion for other types of businesses, such as SMEs and heritage businesses. Several attempts at definitions have taken place, but without definitively ruling out the risk of ambiguity. The family business can be fundamentally differentiated from the patrimonial business because the former belongs to physical individuals linked by family ties. Most often, the leaders are the descendants of the company's founder. According to Azizi, Bidgoli and Taheri [32], a family member of different generations can be involved in a business through ownership and management, and these components should enable the family to influence the adoption of goals that meet the family's needs, which should affect the company's management practices and structures again. So, the capital of the family ownership is held by the members of the owning family. Generally, unlike family businesses, heritage businesses are run by natural persons without family ties. On this basis, the legal contours of heritage businesses are different and broader than those of family businesses. Heider, Gerken, van Dinther and Hülsbeck [33] perceive family firms as the prevalent form of entrepreneurial organizations worldwide.

In addition to the nature of the relationship between the managers of a company, the notion of control of the capital or ownership of the enterprise is also a central and important factor in the definition of family businesses. Azizi, Bidgoli and Taheri [32] affirm that the ownership of a family business cannot be controlled by one or more natural persons other than its members. Much previous research as for Azizi, Bidgoli and Taheri [32], Matzler, Veider, Hautz and Stadler [31], and Haghjoo, Moghadam and Mousavi [34] demonstrated that a business could be characterized as family-owned if control of ownership has remained in the hands of an individual or members of the same family. According to Azizi, Bidgoli and Taheri [32], the specific characteristics of a family's business concern distinctive ownership and management structure, which may result in greater efficiency and higher economic performance than firms owned by diverse shareholders. Previous research has generally looked at family businesses in terms of their definitions and differentiation from other companies resembling them. Indeed, a lot of research is taking place today on family businesses. But, not even in Mali address the issue of the influence of the family on management behavior and company performance. They focus mainly on attempts at conceptual analysis that are confusing with other types of companies. But all the same, some previous literature, such as those of Matzler, Veider, Hautz and Stadler [31], Haghjoo, Moghadam and Mousavi [34], and Heider, Gerken, van Dinther and Hülsbeck [33], have been interested in the study on family members' involvement in family business management and governance. However, there is no existing data in the previous studies on family ownership in West Africa background.

In addition, we should note that in Mali, a family business is not necessarily run by members of the founder's family. That is also the particularity of the case of family businesses in Africa. That is a gap in the different definitions of family business. In recent years, research on family businesses has experienced a significant revival of interest, but in West Africa, the field remains poorly explored and almost unexplored in Mali. Family interference in corporate management can produce positive or negative results. In a previous study, [31]demonstrated the negative effects of family management and governance on R&D intensity. In other land, Castillo and Wakefield [35] explained that a family company is particularly suited to achieve its objectives in part due to the commitment and effort of family members and the knowledge brought to the company compared to public firms. That is due to the transmission, from generation to generation, of acquired and solidly built knowledge, allowing the establishment of a typical corporate culture shared by all family members. The strong connection between the family and the corporate spheres, as well as the concurrent roles of shareholders and operational management, are at the foundation of the outperformance of family businesses. They point out that this configuration makes it possible to make faster and, therefore, more efficient decisions. But, the relationship between family ownership and business governance can also negatively affect firms.

We then proposed the following hypothesis. **H2:** Family management has a significant and negative effect on firm economic performance in poor business environments.

The mediating role of employee conditions and motivation

Dialectical logic shows that human resources are the primary cause of the development of things, followed by leadership styles. As motivation factors, according to the incentive theory, employees' behavior is motivated by both employees' conditions and motivation and human resources management, but the effects of human resources management need to be mediated by employees' development and motivation. The relationship between management styles and human resources management should follow the logic of the motivation theory, as noted by Maslow [28]. The role of management styles is to aid managers' performance, Marisela [26]; to influence and motivate employees to reach the goals, Batista-Taran, Shuck, Gutierrez and Baralt [36]; plan, administer, establish budgets, prevent, evaluate investments, measure, and rectify discrepancies, Hans [37]; to plan, organize, manage and control, [38]. To better improve the company's organizational performance in the external environment, managers are to make more efforts to adapt their styles to external dimensions strategically. In the context of this study, for the target of firm growth, human resources management is the principal factor, and employees' conditions and motivation are the secondary factors, and the relationship between them should follow the logic of incentive theory. In certain extent, human resources management will affect the firms' strategies, and human capital investment political, thereby affecting the firms' economic performance.

We then proposed the following hypothesis. **H4:** In poor business environments, employee conditions significantly mediate the relationship between the authoritative and participatory management styles and firm economic performance but, don't mediate the consultative and persuasive styles. Employee motivation mediates significantly the relationship between the consultative and persuasive management styles and firm economic performance, but its mediating role for authoritative and participatory is not significant.

The mediating role of family management

The family members' involvement in family business management can affect the relationship between leadership styles and the company's economic performance. Haghjoo, Moghadam and Mousavi [34] researched the mediating role of family ownership in the relationship between the independent board and the company's performance in the stock exchange. Environment construction theory holds that the environment can be objective but, also subjective and social. In the face of the external uncontrollable and unstable objective environment, managers in Malian firms will pursue the construction of an internal subjective environment out of the need for psychological compensation.

We therefore proposed the following hypothesis. **H3:** Family members' involvement significantly mediates the relationship between the authoritative, participatory, and persuasive styles and economic performance, but its mediating effect between the consultative style and firm economic performance is insignificant.

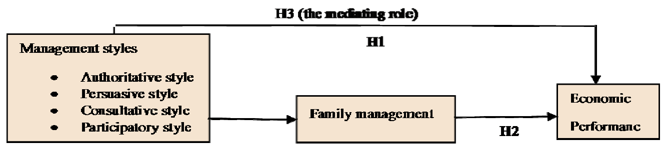

Fig. 1. The conceptual framework of the study

MATERIALS AND METHODS

Sampling

In the World Bank's Doing Business Report 2020, reported by Thijssen [39], its ease of doing business index ranked 148th out of 190 economies worldwide. Mali has fewer than 500 industrial firms, nearly 60% of which the capital. Mali is dominated by mining, and other industrial sectors include food processing, publishing and printing, textiles, and building materials. To construct our study sampling, we therefore used the probability sampling method. Probability sampling refers to the selection of a sample from a population when this selection is based on the principle of randomization, that is, random or random selection. It is more complex, takes longer to implement, and is usually more expensive than non-probability sampling. However, because the units in the population are selected at random, and it is possible to calculate the probability of selection of each unit in the sample, it allows reliable estimates to be produced and statistical inferences to be made about the population. As technique, we used systematic sampling. It was done in two steps. The first was to select the enterprises, and the second consisted to choose the respondents within each enterprise selected. For this, we had beforehand all industrial firms in Bamako and peripheries (320) and the lists of their workers. We fixed 100 firms as our sample. The survey was conducted in three times, from December 2021 to January 2022, from March 2022 to May 2022, and from July 2023 to September 2023. We sent out 1300 questionnaires to 59 firms that responded to us positively and finally returned 733 questionnaires, with a recovery rate of 56.38%. Of the respondents, 159 people were managers, and 574 were employees. Of the 159 managers, 73 were from manufacturing firms, 59 were from food enterprises, and 27 were from building firms. Among the recovered questionnaires, 1 had missing values, 59 were not conform to padding logic, and finally, 673 valid questionnaires were collected.

Questionnaire design procedure

Through the following procedures, our study questionnaire have been developed. Firstly, a majority of the items have been drawn from mature scales, although modifications were made to align them with the Malian's cultural context. A few items were self-developed. All questions were expressed in French, the official language of Mali, and verified through back translation into English. Secondly, with careful consideration of the Mali context, slight adjustments were made to the expression of a small subset of items, ensuring that their original meaning remained intact. Thirdly, the items underwent thorough discussions among research team members through several rounds, and a pretest was conducted in a sampled enterprise. Subsequent to receiving their feedback, we further improved the questionnaire. Fourth, to control common method bias, all items were randomly ranked to generate a formal questionnaire. Finally, within the questionnaire, excluding items pertaining to identity information, the core variables were measured by a 5-point Likert scale. Responses ranged from 1, indicating strong disagreement, to 5, denoting strong agreement.

Independent variables

The management styles as independent variables were measured from four dimensions, i.e., authoritative, participatory, persuasive, and consultative ones. Adapted from Jiang [40], the authoritative style was measured in three items, and the sample item was "in my firm, authoritative leadership stresses the employees." Adapted from Magbity, Ofei and Wilson [41], the participatory style was measured by three items, and its sample item was "leaders and employees share ideas in a good relationship." In addition, we developed two items for measuring persuasive style, and its sample item was "persuasive leadership motivates the employees of my firm." Finally, two items were selected and adapted from the scale proposed by Korzynski [42] to measure consultative management style, and the sample item was "employees lead, create, and participate in the firm's life."

Dependent variables

The dependent variable, firm economic performance was measured by three items Marengo [43]. They were "economic profitability of our firm is satisfying," "our firm's saving rate is growing," and "our firm's investments are growing." Considering that the quantitative indicators of the economic performance of Malian firms were not comparable across industries and unstable in time, we inferred that it would be more effective to use a psychological scale to qualitatively measure managers' and employees' perceptions of economic performance.

Mediating variables

Family management was our mediating variable. Considering several studies have explored the mediating role of innovation between leadership styles and enterprise performance Chen [44], enterprise performance, and family environment. Family environment influence, according to Craig and Moores [45], and technological environment, according to Chen [44] impacts, constitute some firm's environments. Similarly, we used a psychological scale to measure the mediating variable"employees conditions", of which the items included "employees have career plan in our firm", "our firm employees have good remunerations", "employees progress conditions are satisfying in our firm", "our firm fosters employees development", and "the needs of our firm employees are considered", adapted from Maslow [28]; "employees motivation", of which the items included "employees in our firm are strongly motivated", "in our firm, employees complaints are less important", "employees productivity in our firm is satisfying", adapted from Maslow [28] behavior and motivation theory; "family management", of which the items included "our firm is a family ownership", "the family members are involved in our management", and "family members involving has effect on our firm economic performance".

Control variables

We set three control variables, including individual religion, firm size, and industry type, which respectively control the differences among individuals, firms, and industries. For individual religion, Muslims were assigned 0, otherwise assigned 1. For firm size, the number of employees less than 200 was assigned 0, otherwise assigned 1. For industry type, high technology industry was assigned 1, otherwise assigned 0.

Validity, reliability, fidelity, and common method bias

In scientific research, an instrument is considered valid if it measures what it is supposed to measure. The same instrument is faithful when it always measures only the same characteristics. In order to ensure the validity and fidelity of the survey instrument, the questionnaire to be administered to firms' workers was tested during a pilot survey carried out among about 5 managers and 33 employees in 5 firms in Bamako.

As the result of confirmatory factor analysis, the Kaiser-Meyer-Olkin and the significance of Bartlett test of sphericity indicated the suitability of factor analysis. We introduced all items for analyzing the rotation sums of squared loading, which showed that six latent constructs were extracted after varimax rotation. Each construct had eigenvalue over 1, and all of them reported 62.395% of total variances. The result further confirmed the constructs' discriminant validity and the six-factor model's adequacy for regression analysis.

Table 1. Reliability and validity

Constructs	Factor loadings of the items	CR	AVE
Authoritative style	0.857, 0.671, 0.570	0.747	0.503
Participatory style	0.693, 0.649, 0.600	0.685	0.421
Persuasive style	0.782, 0.782	0.759	0.612
Consultative style	0.798, 0.798	0.778	0.637
Family management	0.674, 0.645, 0.638	0.687	0.426
Economic performance	0.706, 0.696, 0.646	0.724	0.467

The results of reliability and validity tests were shown in Table 5.2. The convergence validity was measured by AVE (average variance extracted). As shown in the table, all AVEs ranged from 0.421 to 0.637, basically meeting the criterion suggested by Hair Jr [46] for self-developed scales. The standardized factor loading of the items ranged from 0.570 to 0.857, greater than the threshold value 0.500. Hence, the construct validity of our study was therefore confirmed. Furthermore, Cronbach's alpha shows the internal consistency of a construct as a measure of reliability. In the study, the alpha values of all constructs were above the recommended value 0.700. Finally, the CR (composite reliability) values of all constructs ranged from 0.685 to 0.778, above the recommended value 0.600.

Common method bias

Common method bias relates to how respondents complete the questionnaire. This bias is present in how respondents are able to interpret responses based on the level of abstraction, Chen and Chen [47]. One way to assess common method bias is to measure the correlation between a marker variable that should not be related to the main constructs of the research model to ensure that all constructs are not correlated with each other because of the way respondents completed the questionnaire, according to Lindell and Whitney [48]. In this study, to assess the presence of a common method bias, we adopted procedural and statistical techniques to control common method bias. First, we disrupted the order of the items in the questionnaire. Second, we ensured the anonymity and voluntariness of the recruited respondents. Third, we used Harman's single-factor test to measure it. The first principal component with the largest eigenvalue accounted for less than 40% of the total variance, meeting the requirement.

Statistical technique and modelling

Statistical technique

In our questionnaire, excluding the items about identity information, other items belonging to the core variables were measured by a 5-point Likert scale, where 1 denoted strongly disagree, and 5 denoted strongly agree. Most of the items were introduced from mature scales, but they have also been adapted according to the cultural context. A few items were self-developed. All items were expressed in French, the official language of Mali, but have been confirmed by back translation in English. The self-developed items have been discussed by the research team members for several rounds and have also been pretested in a sampled enterprise.

Modelling

Using SPSS 24 software, and drawing on hierarchical regression analysis, we constructed the following models to test our hypotheses. Firstly, to measure the direct effects of management styles on firm economic performance proposed in H1, we developed models (1) and (2). To test the mediating effect, in accordance with the recommendation of Preacher [49], we employed the Sobel procedure, using PROCESS v. 3.3.Equation (1) tests the effect of control variables as a reference model.

$$\text{Economic performance}_i = a_0 + a_1 \text{Controls}_i + \mu_i \quad (1)$$

$$\text{Economic performance}_i = b_0 + b_1 \text{Management styles}_i + b_2 \text{Controls}_i + \mu_i \quad (2)$$

Second, we constructed the models (3) and (4) to measure the effect of the family management on economic performance, as the hypothesis proposed in H2.

$$\text{Economic performance}_i = a_0 + a_1 \text{Controls}_i + \mu_i \quad (3)$$

$$\text{Economic performance}_i = b_0 + b_1 \text{Family management}_i + b_2 \text{Controls}_i + \mu_i \quad (4)$$

Finally, we developed models (5) to test the mediating effect of the mediating variable, as posted in H3.

$$\text{Economic performance}_i = t_0 + t_1 \text{Management styles}_i + t_2 \text{Family management}_i + t_3 \text{Controls}_i + \mu_i \quad (5)$$

In the above equations, Controls were control variables, μ was the random disturbance, and i indicated the number of respondents.

RESULTS

Descriptive analysis

Table 2 shows the means, standard deviations, and correlation coefficient of the main variable. We found that the persuasive style is significantly and positively correlated with the authoritative style ($r=0.175$, $p<0.01$). The results have also shown that. Consultative style is not correlated with authoritative style ($r= -0.086$, $p>0.05$) and persuasive style ($r=0.074$, $p>0.05$). Participatory style is significantly and positively correlated with authoritative style ($r=0.197$, $p<0.01$) but significantly and negatively correlated with persuasive style ($r= -0.136$, $p<0.05$) and consultative style ($r=-0.166$, $p<0.01$). Family members involved in management are significantly and positively correlated with all leadership styles: authoritative style ($r=0.207$, $p<0.01$), persuasive style ($r=0.116$, $p<0.05$), consultative style ($r=0.149$, $p<0.01$), and participatory style ($r=0.127$, $p< 0.05$). Enterprise performance is significantly and positively correlated with participatory style ($r=0.117$, $p<0.05$). It is also significantly but negatively correlated with authoritative style ($r=-0.220$, $p<0.01$) and with persuasive style ($r=-0.149$, $p<0.01$). But not significantly correlated with consultative style ($r=0.034$, $p>0.5$). In other words, we can say positive correlation relationships do exist between the core variables involved in this study because most of the correlations are significant. That provides some preliminary evidence for a part of our research hypotheses.

Table 2. Means, standard deviations, and correlations

Variables	1	2	3	4	5	6
1 Authoritative style	1					
2 Persuasive style	0.175**	1				
3 Consultative style	-0.086	0.074	1			
4 Participatory style	0.197**	-.136**	-.166**	1		
5 Family management	0.207**	0.116**	0.149**	0.127*	1	
6Economic performance	-.220**	-.149**	0.034	0.117	-.179**	1

In addition, the highest correlation value is 0.798, above the threshold value of 0.75 (Tsui et al., 1995), suggesting multicollinearity problems within the variables. However, it is not confirmed by calculating variance inflation factor (VIF) values. The highest VIF value in all models is 1.225, well below the rule-of-thumb cut-off of 10, indicating that the multicollinearity would not significantly influence our research results (O'Brien, 2007).

Direct effects

The direct effects are related to the relationship between management styles and a firm's economic performance, mediating variable and economic performance. Through hierarchical regression analysis, the direct effects of leadership styles on firm economic performance are depicted in Table 3. The results of M1-M6 models show that authoritative style ($\beta = 0.252$, $p < 0.01$), persuasive style ($\beta = 0.173$, $p < 0.05$), and participatory style ($\beta = 0.190$, $p < 0.05$) affect significantly and positively companies performance. So, hypothesis H1 of this study is supported. However, it is not significant for consultative style ($\beta = 0.017$, $p > 0.01$). However, when a manager on firm organizational performance combines the different leadership styles, the impacts of authoritative style ($\beta = 0.234$, $p < 0.01$), persuasive style ($\beta = 0.151$, $p < 0.10$), and participatory style ($\beta = 0.169$, $p < 0.05$) are still significantly positive, but the impact of consultative style ($\beta = 0.061$, $p > 0.01$) becomes even more insignificant. The results indicate that the effects of authoritative style, persuasive style, and participatory style on company performance are much stronger, and would cover up their effects, and consultative style has no impact on company performance. The table shows that the impact of different leadership styles is the same with the combined effects.

Table 3. Direct effects of management styles

Hence, the hypothesis H1is supported.

The effect of family management on firm economic performance is depicted in Table 4. The results of M7-M10 show that family management ($\beta = -0.179$, $p < 0.01$) have significant and negative effect on company performance. With combined effects, the family management still have significant and negative effect on company performance. Hence, our hypotheses H2 is accepted.

Table 4. Direct effect of family management on firm' performance

Variables	Model 7	Model 8	Model 9	Model 10
Constant	0.607**	2.510	0.010	2.320
Religion	-0.040	-0.294**	-0.182**	-0.023
Control variables				
Industry	-0.283**	-0.294**	-0.182**	-0.192
Size	-0.011	-0.293**	-0.180**	-0.011
Mediating variable				
Family management			-0.179**	-0.137**
Goodness of fit				
R^2	0.041	0.318	0.189	0.127
F	1.888	1.741	2.880**	5.602
Max(VIF)	1.053	1.034	1.032	1.130

***p<0.01; **p<0.05.N=733

The indirect effects

The Table 5 shows the mediation of and family management. We used the bias-corrected bootstrapping method, Sobel test, and test-t de student (P-value) to test the indirect effects. The mediation analysis was performed at a 95% confidence interval based on 10,000 bootstrap samples and 5% ($p < 0.05$) for significant degree. The confidence interval of the lower and upper limits was computed to check whether the indirect effects were significant. If zero is not contained in the confidence interval, it indicates that the indirect effect is significant; otherwise, the indirect effect is insignificant. We can observe the results in Table 6.5. We found that mediated by family members involved in enterprise management, authoritative style (P-value=0.033, $p < 0.05$, SD=33%), persuasive style (P-value=0.040, $p < 0.05$, SD=40%), and participatory style (P-value=0.033, $p < 0.05$, SD =33%) have significant effects on company economic performance. However, the effect of consultative style (P-value=0.190, $p > 0.05$) on company performance mediated by family management is not significant. Hence, hypothesis H3 is partially supported.

Table 5. The indirect effects of management styles

DISCUSSION

The main objective of the discussion is to compare the empirical results obtained from field surveys with those of previous studies. So, we crossed the empirical results obtained by cross-referencing them with others obtained before. This cross-referencing makes it possible to identify points of convergence and divergence with the results of prior research that have already dealt with the subject. In this regard, the discussion is focused on the different axes of our study. The above inferences were in accordance with the proposition of contingency theory, more specifically, House's path-goal theory of Domingues [50], and with the family management theory [32]. In fact, the four management styles could be further summarized into transactional style and transformational style. Authoritative and participatory managers who are used to exert their power to make strategic decisions are transformational leaders, and persuasive and consultative managers who are more dependent on their subordinates and engage in motivating employees to make more contributions are transactional leaders. Vecchio, Justin and Pearce [51] found that both transformational and transactional styles can significantly predict organizational performance, but the transactional one seems to be more suitable for predicting unique performance, such as innovation outcomes. That may be the reason why we could divide the effects of the four styles into two groups, and the group of consultative styleis not mediated by the family management to affect firm economic performance, while the group of authoritative, persuasive and participatory styles needs to be fully mediated by the family management. Hence, the second group emerges as group influencing firm economic performance. On the basis of Vecchio, Justin and Pearce [51], our new contributions were twofold: on the one hand, we extended the research context to the poor business environment, laying the foundation for discoveries and new enlightenment; on the other hand, a more in-depth examination of the mediation mechanism of persuasive and consultative styles helpsus to investigate the heterogeneity of their effects.

Different from many prior studies, Cardinal, Turner, Fern and Burton [52] and Jeon and Chung [53] who proposed that the family involvement is conducive to improving companies' performance, our study confirmed that the family environment has a significantly negative effect on firm economic performance. In this study, we attributed the difference to different business environments. That is, the sample for our study came from a poor economy. In a poor economy, firms' homogeneous development is universal. When firms face fierce but low-end competition, their best strategy would be more effective ways, such as the monopoly driven by cooperation. This assertion has already been made in Ang [54], which was therefore consistent with our findings. The value of our study was to remind more people to think about the need for firms to build and improve the family environment in poor business environments. In addition, our study may also be different from the results of [28]and[55], because they didn't found direct effects of family involvement on firm economic performance. Therefore, our study was not inherently inconsistent with previous studies.

Many studies have also explored the impact of management styles on organizational performance based on the upper echelons theory. However, these studies have several characteristics. First, they usually investigated management styles as a mediating variable, while independent variables were often the personal characteristics of managers, such as gender, education, age, tenure, etc. Bobe, Kober and Finance [56]; Wang, Waldman and Zhang [57]. Our study bypassed this point and allowed the focus of observation to move forward. Second, they focused on the issues of strategy, innovation, and sustainable development, so their focus on organizational performance was often from a long-term perspective, and their focus on management style was usually strategic leadership as understood Piwowar-Sulej and Iqbal [58] and Wang, Waldman and Zhang [57]. Our study, in the context of poor business environments, constructed a theory that linked traditional management styles with short-term economic performance, which was more enlightening for the organizational construction and financial development of firms in poor economies. Finally, most of the studies based on upper echelons theory focused their samples on corporate CEOs or top management teams, as that of Jensen, Potočnik and Chaudhry [59], but our study extended the respondents to ordinary managers and general management styles. Such research design was clearly more suitable for the exploration of the laws of general small and medium-sized firms in poor business environments.

The contingency theory, the upper echelons theory, and the family involvement theory are the theories of this study. The aim goal of our study was to explore and analyze the relationship between management styles and firms' economic performance. In a business, the involving of family members in management and governance environment could influence manager's style and firm organizational performance. Specifically, in the case of companies, the family environment plays an important place in firms' strategies and the choice of management style.

The main results reveal that the management styles influence the firm economic performance, and they showed the importance of management combined in firm economic performance. According to them, the high economic performance of the companies should be possible if the corporate managers make a good combination of management styles. Wang, Zhou, Huang, Wang, Li and Fang [60] confirmed that in their study when they demonstrated that when the transactional and transformational management styles are combined, they may better stimulate the firms' innovation performance, and the ideal leaders are those who have both transactional and transformational leadership styles and need to combine them. Our results are sometimes convergent and sometimes divergent from those provided in the previous literature. Hence, the results of this study differ from those of Lee and Lee [14], who demonstrated that the authoritative management style has a positive and significant effect on employee job satisfaction since it can assist in building and improving a well-organized corporate culture, with those of Becker-Olsen, Cudmore and Hill [15] who proposed that persuasive management style would be suitable for the implementation of modern and long-term oriented strategies such as innovation, social responsibility. They converge with those of Arab, Tajvar and Akbari [16], who showed that the difference between the authoritative and persuasive management styles is that the authoritative style is suitable for small-sized organizations with low interpersonal trust in changing and complex environments, while the consultative style is suitable for large firms which have high trust, sound supervision mechanism, and good work routines (Malian firms are small and middle size).

The results also converge with those of [17], who demonstrated that Managers play an important responsibility in the firms' organizational performance and are, in all steps, believed accountable. The results show the efficiency of management styles combined in firms' performance. So, they converge with Wang, Zhou, Huang, Wang, Li and Fang [60], who argued that when the transformational and transactional styles are combined, they may better stimulate the firms' innovation performance. Authoritative managers attach importance to the pursuit and use of power, making them difficult to broaden their thinking with the help of subordinates and employees, Ahmed Iqbal, Abid, Arshad, Ashfaq, Athar and Hassan [61]. The cohesiveness between superiors and subordinates fostered by a persuasive management style should also have contributed to the improvement of the technological environment, Crawford [62]. Our results converge with their results.

In addition, we can add that rather, it is the practices of persuasion, collaboration, exchange, feedback and communication, integration, and authority that are more influential. However, according to our results, the power delegated doesn't directly influence the firms' economic performance. Hence, they differ from those of Reglar [12], who showed that the consultative style stimulates the achievement motivation of subordinates and enhances their work enthusiasm. According to our results, the participatory and persuasive management styles motivate workers. Hence, our results don't converge with those of[13], who showed that employees' job satisfaction, psychological empowerment, and organizational citizenship are also some key factors in determining an organizational performance, but they converge with those of Coff [63] who shows the importance of R&D human capital in firms competitiveness and sustainable competitive, differ with [28] who explained the role and the importance of workers motivation and needs satisfaction in firms survival and growth. Chen and Yu [29], Gupta, Hayek, Wang, Chan, Mathews, Melamed, Brenner, Leonberg-Yoo, Schenck and Radbel [64], Al-Jundi, Ali, Latan and Al-Janabi [65], Zhang, Huai and Xie [66], and Martínez-Campillo and Fernández-Gago [67] shown the importance of human resources development and motivation in firm-specific dynamic capability and their effects on firms development, firms innovative development, and firms profitability. Our results converge with them because, according to our results, the persuasive and consultative management styles affect the firms' economic performance through the employees' development and motivation. Chen [44] also demonstrated that the human capital skills and capabilities affect the economic performance. So, our results converge with their provided literature.

Family members' involvement in a firm's management affects its economic performance and also influences the corporate manager. Hence, our results converge with those of the Manual of Family Companies' Governance (2018), Chatrchyan, Khachatryan, Sirunyan, Tumasyan, Adam, Bergauer, Dragicevic, Erö, Fabjan and Friedl [68], Matzler, Veider, Hautz and Stadler [31], Hodge and Greve [22], Simon [69], and Azizi, Bidgoli and Taheri [32]. However, our study indicated a negative and significant effect of family involvement in firms' management and firms' ownership on their economic performance. Hence, it diverges from the above studies

provided but converges with those of Matzler, Veider, Hautz and Stadler [31], who demonstrate the negative effect of family management and governance on R&D intensity.
Participatory managers can increase work quality and labour productivity. The results show the mediating role of the family management. Hence, they also converge with Marisela [26], who demonstrate the importance of managers in firm economic performance. In addition, we can say that our results converge with the above literature provided that demonstrated that the family management plays mediating role between the management styles and firms' economic performance.

CONCLUSIONS

Findings

The main findings have been presented here as follows. They have been clarified through a framework. After empirical analysis, the survey data supported all hypotheses proposed. We could draw the following key findings, which were richer than the relationships expressed in the theoretical framework as Fig.2.

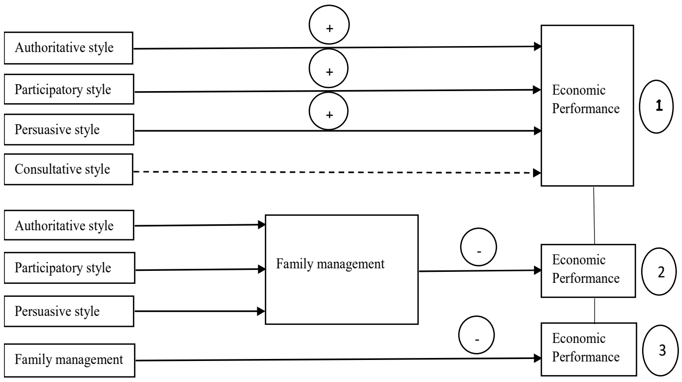

Fig. 2. The confirmatory relationships between management styles and firm economic performance through mediator

First, authoritative, persuasive, and participatory management styles have significant and positive direct effects on firm economic performance. Second, the authoritative style, persuasive style, and participatory style have significant indirect effects on firms' economic performance through the mediating role of family involvement in firm management, but the consultative style don't have. Third, the family members' involvement in firms' management have negative effects on firms' economic performance. Fourth, the high involving of the family members in business management inhibited the development of Malian firms' economic performance.In West Africa, the family members' involvement in the company governance and management is a factor in the nepotism development in the workers' recruitment process, the unhealthy management of financial resources, and the lack of disciplinary sanctions. Nepotism compromises the quality of skills necessary for firm growth. Finally, we add too that the development of authoritative, persuasive, and participatory management styles would be in favor of firms' economic performance through the mediation of family members' involvement in firms' management. Through the mediation of family members' involvement in firms' management, the development of consultative management style went against the increase of firms' economic performance.

Based on the above findings, we could further draw three inferences. First, the development and improvement of management styles, especially authoritative, participatory, and persuasive styles, would be beneficial to the increase of firm economic performance. However, the development of the consultative style should be deliberative. Second, from the perspective of management style cultivation, there were two mechanisms to achieve long-term and short-term economic performance improvement. One was the direct mechanism, such as the implementation of an authoritative and participatory management styles. The other was an indirect mechanism, such as cultivating authoritative, persuasive and participative management styles and, in turn, playing the indirect role of family management enhancement. Third, in a poor business environment, it was not a good idea to involve family environment in firms' management, when firms only aimed to achieve short-term economic performance.

Implications

Theoretical implications: The theoretical implications of the study for subsequent research have been mainly reflected in seven aspects. First, the study was expected to lead more scholars to pay attention to the realization and development of firm economic performance in poor business environments and focus on exploring the similarities and differences between developed economies and poor economies in corporate management mechanisms.

Second, it examines the relationships between different types of management styles, which expands the research scope of the factors influencing firm global performance. The construct of management styles in the study, consisting of authoritative style, persuasive style, consultative style, and participatory style, attempts to go beyond the general concept of management breadth and depth analyzed by different authors such as Svetlik and Stavrou-Costea [70], Martínez-Campillo and Fernández-Gago [67], and Kabene, Orchard, Howard, Soriano and Leduc [71], etc. It makes the study of open research more grounded in practice, as the research question which leadership style is valuable for company economic performance by mediating family management in poor economies background is critical to strategic management.

Our study also enriches the research on the results of the relationship between management styles and firm economic performance. The consequences of management styles have been explored in a large number of domains. Most outcome variables of management styles in existing research mainly focused on the effects of company environment on management styles, as with Mintzberg [72], Chouki, Talea, Okar and Chroqui [73], Auguste, Charlet, Damnati, Béchet and Favre [74], and the effects of leadership style on enterprise performance with Gong and Subramaniam [21], Zouaghi [75], the direct effects of employees' conditions and motivation on firm performance as with [28], [76], [55], while the mediating impacts of employees' conditions and motivation on firm economic performance has never been explored.

Third, it would draw more attention to the influence of four traditional management styles, thus continuing the development of contingency theory, upper echelons theory, and family involvement theory. Fourth, it shows the limit of consultative style in another background, specifically, in poor economies' countries. Fifth, this study led us to rethink the heterogeneity of different management styles in their mechanisms and effects. Sixth, it proposes and empirically tests an integrated model between various types of management styles and company economic performance through the intermediary role of the family management. In most extant studies, both management styles have been positioned as direct predictors as with Likert [8], Hodge and Greve [22], Marisela [26]of company performance and other outcomes. Little attention has been paid to the relativity mediating mechanism of the family management. To cover the gap, this study takes the family management as mediator to explore the outside-in influencing mechanism of various types of management styles since family environment is at the same exogenous and endogenous factors on firm economic performance. The results show that the mediating impact of the family management is significant for authoritative, participatory, and persuasive management styles, but the mediating role has no effect for consultative style. It also reveals the heterogeneous roles of all the management styles in company economic performance.

Finally, it prompted us to think more about the need to build and optimize the family environment, especially in firms with poor business environments. Our findings can help researchers to deepen their understanding of the mechanism through which a company's economic performance is promoted. Moreover, it may enrich the literature on management styles because the previous researches on the relationship between management styles and company economic performance were mainly centered on enterprises in developed and emerging economies, as in the case of Zhang, Lu, Wang and Wu [77]. There is a lack of empirical evidence of open innovation strategies in emerging economies, according to [44]. There are almost no previous studies on the economies of underdeveloped countries. It paves the way for a better understanding of company economic performance via management styles in the context of underdeveloped economies. We emphasized the particularity in poor economies since enterprises in different countries or cultural contexts may meet different realities and limitations in resources, capability, demography, political, social, and cultural environments, which may affect the corporate managers' styles and strategies.

Practical implications: This study has several important implications for firms' managers. The implications of our study for practitioners could also summarized in four aspects. First, firms' managers could choose the suitable management style according to their needs and firms' characteristics and environments, so as to improve their firms' economic performance. Hence, the results of this study show, for example, that in a firm where family members are involved in management, managers should choose and combine the authoritative style, persuasive style and participatory style to improve their firm economic performance. Second, different management styles have different mechanisms and effects on firm economic performance. It was therefore suggested that managers should give priority to the authoritative style, followed by the participatory style, and finally persuasive style. For firms in rich business environments, the above advice may not be fully applicable. Third, managers, in poor business environment, should consider and choose the consultative style carefully. Finally, in opposite to firms in developed economies, the firms in poor business environments needed to be cautious in the decision.

Limitations and future research directions

The limitations and openness to new research of this research are presented here. Hence, future research perspectives are proposed or suggested. That is to say, other than research, avenues for future research may be proposed. Since, in terms of scientific research, no terrain is ever explored and exploited to the full. In other words, the different contours of a subject are never exhausted. Despite valuable implications obtained from the results of this study, the study did have some limitations.

First, the sample size was relatively small, and there might be bias in parameter estimation.

Second, we emphasized the applicability of our conclusions to a sample of firms in a poor economy like Mali, but we did not actually compare whether the conclusions would have great differences in firms in developed economies.

Third, the scale we developed was relatively simple. Some variables had only two terms, which made it impossible to use a structural equation model to estimate parameters, but only linear regression models. Therefore, the shortcomings of the regression model became the limitation of our study.

Fourth, data analysis in this study can only reflect the correlations between the different variables, but can't show why relationships exist between them (causal relationships).
Fifth, the limitations related to the theoretical choices that have been made, the operationalization of research constructs, the collection and statistical analysis of data.

Sixth, the organizational management styles used in the research model were limited. In comparison with the complexity of adjusting the organizational management styles of companies necessary for them in a context of economic globalization based on new knowledge in ICT and digital technology, in a context of environmental turbulences and hostile and almost unfair competition, only a few elements (styles) of this globally or complexity have been integrated into this research. In addition, although similar measurement approaches have previously been used in research, and although the operationalized research variables have been validated upstream, subjectivity bias of the 733 respondents may still exist. That is due to the subjective nature of the data. To the extent that objective indicators could be used, non-objective assessment of firm performance may also be another limitation of our study.

Seventh, there exists a possible response bias related to the nature of the survey instrument used (5-point Likert scale), where some respondents sometimes check two answers. That automatically leads to a cancellation of the survey sheet. Eighth, the study area of our sample could obviously limit the generalization of our research results to all companies first, in Mali, and second, in poor economies, because chosen exclusively in Bamako and the peripheries. It is not likely enough that even companies that have this configuration will have the same results in relation to their geographical and social contexts. Since urban and rural environments have different social and economic characteristics, the influence of the firm's external variables can be exerted to different degrees. Finally, the number of control variables was small too. In addition, moderating variables such as market dynamism and enterprise culture might also be necessary to be introduced to enrich the theory.

Hence, with all those limitations described, our study could bring many possibilities for future research directions. The collection of longitudinal data is recommended in the future. Rather than cross-sectional research, longitudinal research would have better provided stronger knowledge and confirmation of the existence of a causal link between adjustments in executive styles and contingent variables on the one hand and between environmental turbulences and organizational performance on the other. Especially since, like many poor countries, West African countries still have political and institutional uncertainties related to military coups and community strife. The fact that this study focused on enterprises in poor business environments and chose only family members' involvement in firm management as environmental factor could limit the generalizability of our results.

Future research should, therefore, conduct cross-cultural analyses and involve other contingency factors to test the robustness of our findings in some other economic entities. Future empirical research can integrate financial data and adopt interviews with executives for an integrated study of two dimensions of firm economic performance. Although a subjective evaluation of performance has yielded satisfactory results, it would be necessary to compare them with the results of other work carried out on the basis of objective measurement indicators. Above all, in the specific case of Mali, the analysis of the relationship between contextual factors and the influence of the social environment could be the subject of in-depth studies since these fields remain almost unexplored at present. Future research should then extend the study of the link between the management styles and firm economic performance to a detailed analysis of the relationship between contingent variables such as family, technology, ICTs, health and territorial insecurity, and firm performance. The competitiveness and resilience of SMEs and SMIs could also be included in future studies as dependent variables (e.g., the competitiveness of Malian firms in the market with the imported products and their strategies for adapting to environmental turbulence) in the research model. In addition, the different variables of the study could be used as control or moderating variables to measure the effect of certain relationships while modifying, of course, the research design. Future research could introduce, for example, the moderating effect of environmental turbulence, particularly the political crisis and strife in poor countries, between management styles and firms' economic performance. Therefore, in the future, we could make efforts to expand the sample size, carry out comparative studies, improve data analysis methods, enriches the research framework, and so on, so as to improve the developed theory continuously. In conclusion, it should be noted that the concept of performance is constantly evolving. That shows that the factors that determine it can also change.

Data availability

This study survey data cannot be made publicly available due to strict data protection laws and regulations. The data can only be used for scientific research. The datasets generated and analyzed in the current study are available from the corresponding author on reasonable request.

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Declarations

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Ethicalstatement

The study procedures were approved by the Ethics Committee of the University of Kabala, by the ethics committees of the National Laboratory of Ethic and Biology of Mali, and the health authorities of the City of Bamako and were in line with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was signed and obtained from all individual participants included in the study. Appropriate ethical aspects have been followed in all phases of the study, according to the recommendations of the National Laboratory of Ethic and Biology of Mali. In line with CEOs recommendations, all participants were informed about the study and its purposes; data confidentiality, use, and processing; data protection statement; and contact details. The data protection statement is available from the corresponding authors.

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