Article

Sustainable Human Resource Management and Leadership as Drivers of Competitive Performance: A Study on Sustainable Practices and Knowledge Management in Family Firms

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ABSTRACT

This study analyses the impact of Sustainable Human Resource Management (SHRM) and Sustainable Leadership (SL) on competitive performance (CP) in Colombian coffee family firms (FF), considering Sustainable Practices (SP) as mediators and Knowledge Management (KM) as a moderator. Using a quantitative design and Partial Least Squares Structural Equation Modelling (PLS-SEM) on 232 valid responses, results confirm that SHRM and SL indirectly enhance CP through SP, while KM strengthens this mediation. The findings highlight that economic and environmental practices exert stronger effects than social ones. These results provide empirical evidence from Latin American rural contexts and propose a systemic framework linking SHRM, SL, SP, and KM as drivers of CP in family firm.

KEYWORDS: Sustainable Human Resource Management-(SHRM); Sustainable Leadership-(SL); Competitive Performance-(CP); Coffee Family Firms; Sustainable Practices-(SP); Knowledge Management-(KM)

ABBREVIATIONS

Sustainable Human Resource Management-(SHRM); Sustainable Leadership-(SL); Competitive Performance-(CP); Sustainable Practices-(SP); Family Firms (FF); Knowledge Management-(KM)

INTRODUCTION

Organisational sustainability has consolidated as a strategic priority for FF, particularly in agricultural sectors where the interplay between economic, social, and environmental dimensions is decisive [1]. These organisations face increasing pressures arising from climate change, market volatility, and societal demands for corporate responsibility. In this context, SHRM has emerged as a field that connects talent management policies with the Sustainable Development Goals, positioning people at the centre of building organisational resilience and sustainable competitive advantage [2,3].

The literature has underscored that SHRM differs from traditional management by recognising that employees are not merely operational resources but strategic actors capable of enabling the transition towards sustainable business models [4]. Within this framework, practices related to equity, continuous training, and workplace wellbeing become mechanisms that not only foster commitment but also contribute to long-term Competitive Performance CP [5].

At the time, SL has gained prominence as a key element for driving cultural transformations towards sustainability [6,7]. Unlike transformational or ethical leadership, SL is characterised by incorporating an intergenerational vision, balancing economic outcomes with social wellbeing, and demonstrating an explicit commitment to the natural environment [8]. Recent studies show that SL contributes to creating organisational cultures that align individual and collective objectives under a triple-impact approach [9,10].

CP has been conceptualised as the capacity of organisations to mobilise internal and external resources in order to generate sustainable advantages in dynamic markets [11]. However, the literature acknowledges that the mechanisms through which SHRM and SL influence CP remain underexplored and require more integrative models [12]. Specifically, the inclusion of SP as mediating variables and KM as a moderator remains insufficiently developed, despite both constructs being essential to linking sustainability with innovation and competitiveness [13,14].

From a contextual perspective, FF in rural environments face particular challenges: limited technological adoption, reliance on traditional practices, and exposure to highly volatile markets [15]. The Colombian coffee sector represents a paradigmatic case, given its strong cultural roots, territorial economic significance, and increasing pressure to adopt sustainability models in response to climatic and commercial challenges [16]. Nevertheless, despite their importance, these organisations have received limited attention in international sustainability studies, which predominantly analyse large corporations in urban or industrial contexts.

This epistemological gap motivates the present study. While prior research has linked SHRM with CP [17,18] and SL with the development of

sustainable cultures [6,8], few studies have simultaneously explored how both constructs interact in rural and family contexts to influence CP. Moreover, most research on SHRM and SL has focused on industrialised Western settings, without considering how territorial and community factors reshape these dynamics [19].

Accordingly, a gap persists in understanding how SP mediate these relationships and how KM strengthens or weakens their impact in organisations highly dependent on local human and social capital. In response to these limitations, Table 1 summarises the main theoretical gaps identified in the literature, the specific contributions of this study, and their correspondence with the research hypotheses (H1-H5), ensuring coherence between the theoretical framework, the identified gaps, and the proposed model.

Table 1. Literature gaps and contributions of the study.

Theme	Addressed in the Literature	Identified Gaps	Contribution of This Study	Associated Hypothesis
SHRM	SHRM has been linked to organisational performance in large industrial firms [2,17,18]	Limited evidence in rural FF, where labour dynamics are tied to cultural identity and structural constraints [20,21].	Empirical analysis of SHRM in Colombian family coffee firms, showing its role in competitiveness under specific territorial conditions	H1: SHRM→CP. This gap underpins the need to test the direct effect of SHRM on CP in rural family contexts
SL	SL is associated with building sustainable cultures and intergenerational commitment [6,8,22]	Lack of studies exploring how SL interacts with SHRM and SP in rural and emerging economy contexts [23,24].	Integration of SL as a key factor in mediating the SHRM-CP relationship in coffee firms	H2: SL→CP; H4: SL→SP→CP. these hypotheses address the need to empirically verify the direct and indirect effects of SL on CP.
SP	Literature links SP and sustainability-oriented HRM practices with economic, social and environmental performance [25,26]	Limited evidence of the mediating role of SP in models integrating SHRM and SL [16,27].	Model positioning SP as mediating variables between SHRM, SL, and CP, operationalising the three dimensions of sustainability	H3: SHRM→SP→CP; H4: SL→SP→CP. This hypothesis addresses the theoretical gap by determining how the effects of SHRM and SL are enhanced through SP to achieve CP
KM	KM has been explored as a strategic resource for innovation and competitiveness [13,28]	Absence of studies examining KM as a moderator of SP effects on CP in rural organisations [29,30].	Introduction of KM as a moderating variable in the model, evidencing its role in enhancing or constraining sustainability	H5: KM × SP→CP. this hypothesis addresses the gap concerning the moderating role of KM in transforming SP into competitive results
CP	Conceptualised as the capacity to mobilise resources and achieve sustainable market advantages [11,31]	Limited clarity on how SHRM and SL influence CP in agricultural family contexts [32].	Empirical validation of the impact of SHRM and SL on CP in coffee firms, with SP as mediators and KM as moderator	H1–H5 (integrated): The model integrates SHRM, SL, SP, and KM as complementary mechanisms driving CP in rural FF

Source: own elaboration.

This study seeks to address this gap by integrating five key constructs: SHRM, SL, SP, KM, and CP. In particular, it posits that SP act as mediators between SHRM, SL, and CP, while KM moderates the effects of such practices on C. Accordingly, it proposes an empirical model that not only validates causal relationships, but also offers a contextualised understanding of organisational sustainability in Colombian family coffee firms.

From a theoretical standpoint, this study extends sustainability and family business literature by analysing the joint interaction between SHRM and SL as complementary mechanisms for achieving organisational sustainability. SHRM provides the strategic infrastructure that embeds social, environmental, and economic goals into human resource systems [18,33,34] while SL acts as the behavioural driver that translates these principles into values-based and long-term decision-making [35,36]. By connecting these two perspectives, the study addresses the gap noted by [9,11] regarding the need for integrative models linking leadership and sustainability-oriented management system.

Beyond this core interaction, the model also incorporates SP and KM as mechanisms explaining how sustainability is operationalised and transformed into CP. In this way, the study offers a systemic view of how leadership, human capital, and organisational learning converge to strengthen the competitiveness of Colombian family coffee SMEs under a sustainability framework.

This theoretical integration contributes to building an empirical bridge between people management, SL and knowledge-based resources, offering new insights into how FF in rural territories can align sustainability with long-term competitiveness.

This theoretical and practical integration provides a systemic understanding of how leadership, human capital, and organisational learning converge to strengthen the competitiveness of Colombian family coffee SMEs under a sustainability framework. In doing so, the study not only bridges theory and practice but also offers guidance for rural organisations seeking to reconcile cultural identity with global sustainability imperatives, and for policymakers and associations aiming to enhance the competitiveness of the coffee sector through comprehensive and inclusive sustainability strategies.

Moroever, in the Colombian rural context, family coffee firms represent a distinctive organisational setting where sustainability, culture, and competitiveness intersect. Their strategic behaviour is shaped by intergenerational values, stewardship orientation, and strong territorial identity, which connect business continuity with community wellbeing. However, these same characteristics coexist with structural limitations such as informality, limited access to technology, and dependence on climatic and market conditions that influence how sustainability and leadership practices are implemented. This dual configuration makes Colombian rural FF an exceptional context for examining how SHRM and SL interact with SP and KM to enhance CP.

In terms of structure, the article is organised into different sections. Following this introduction, the theoretical framework and research hypotheses are presented. The methodology is then outlined, based on PLS-SEM. Next, the empirical results are reported and discussed in light of the relevant literature. The article concludes with theoretical and practical

contributions, as well as its limitations and avenues for future research (see Table 1).

THEORETICAL FRAMEWORK

In this section, the current state of the art is addressed, critically examining the nature and function of the predictor variables of CP, which in this study are SHRM and SL, mediated by PS and moderated by KM. The theoretical foundation of this study is presented in Figure 1.
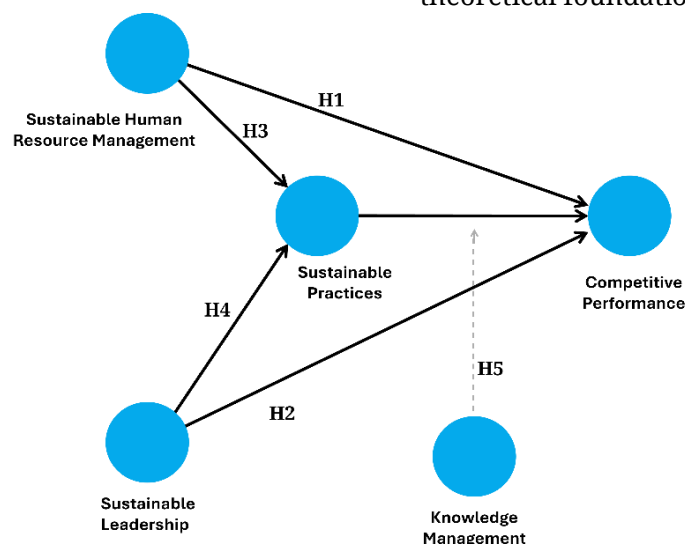

Figure 1. Hypothetical approach.

Sustainable Human Resource Management (SHRM)

The SHRM is understood as a strategic approach that incorporates sustainability principles into human capital management, linking labour, organisational, and leadership practices with long-term objectives [18,33]. This approach seeks to align economic, social, and environmental goals with employee wellbeing, equity, and professional development [17]. It differs from traditional HRM by emphasising organisational justice, active participation, continuous training, psychosocial health, and diversity. Such practices act as levers to promote resilient, innovative, and socially responsible organisational cultures [7,27]. In particular, the selection and retention of employees whose values are aligned with sustainability, along with reward systems that incentivise responsible behaviours, have shown positive effects on CP [37].

From the resource-based view (RBV) [38], SHRM can be conceived as a hard-to-imitate strategic resource that develops organisational capabilities supporting person–organisation alignment and reinforcing the implementation of sustainable practices (SP). Such capabilities contribute to enhancing firms' reputation and competitive performance and may also nurture a stronger sense of collective organisational efficacy [11,39].

Beyond mitigating impacts, some studies show that SHRM can optimise internal processes and reconfigure organisational structures in FF,

reinforcing their capacity to contribute to social and ecological wellbeing [34,26]. Recent research has also shown that the sustainability of HR practices in FF is conditioned by family values, governance mechanisms, and succession processes, all of which affect their continuity and effectiveness, particularly in rural environments [20,33,40].

Consequently, ref. [17] has shown that SHRM functions as an intangible infrastructure that underpins sustainability in complex organisational environments, by facilitating processes of continuous learning, adaptability to change, and cultural cohesion when integrated with SL [41]. This type of talent management does not operate in isolation; rather, it interacts with other dimensions of the organisational system, strengthening communication channels, ethical decision-making, and employee commitment. When SHRM practices are aligned with the organisation's overall strategy, they not only enhance productivity and innovation but also strengthen its reputation in the marketplace [4,17,33]. Such alignment transforms talent management into a competitive lever that combines internal efficiency with social, economic, and environmental commitment for FF coffee businesses.

Likewise, ref. [42] demonstrates that SHRM practices foster sustainable performance when variables such as employee participation in ecological initiatives and long-term orientation are activated. Thus, the more closely human resource policies are aligned with sustainability principles, the greater the leadership capacity to translate them into concrete practices of CP [43].

In line with the above, the following hypothesis is proposed:

Hypothesis (H1). *SHRM has a direct positive effect on the CP of FF.*

Sustainable Leadership (SL)

Over recent decades, organisational leadership has evolved from models centred on profitability to ethical and integrative approaches oriented towards sustainability [6,9,33]. SL is defined as a style that articulates economic, social, and environmental dimensions, creating enduring value for the organisation and its stakeholders [34,35]. Unlike transformational or ethical approaches, it integrates both perspectives into a systemic framework that strengthens resilience and institutional legitimacy [44,45].

From the RBV [38], SL constitutes an intangible resource capable of activating dynamic capabilities to anticipate trends, adapt to complex contexts, and innovate in organisational processes and relationships [46]. Its influence is particularly decisive in SMEs, where leadership directly impacts culture and strategy [24,47]. In FF, where management is often concentrated in the founder or manager, SL can orient strategy towards responsible practices, trust-based community relations, and purpose-driven innovation processes [22,48]. For this reason, in the present study SL is conceptualised as an exogenous variable of the causal model,

consistent with previous findings that highlight its significant direct and mediated influence on sustainable performance, as noted by [41].

In a complementary manner, stewardship theory provides an explanatory framework for SL in family businesses. Under this logic, family leaders act as custodians of the intergenerational legacy, prioritising collective well-being over individual interest [49]. When family executives assume a stewardship role, a long-term orientation and ethical coherence in decision-making are reinforced, fostering the integration of SHRM and SL [50]. Thus, the effectiveness of SL in FF also depends on specific boundary conditions. Family governance through protocols, boards or succession rules contributes to institutionalising decisions and reducing emotional conflicts in the adoption of SP [51].

For this reason, in this study, SL is proposed as an exogenous variable within the causal model, in line with previous findings that demonstrate its significant influence both direct and mediated on sustainable performance, as shown in the study by [41]. Considering the above, when SHRM practices are aligned with the organisation's overall strategy, they not only enhance productivity and innovation but also strengthen the organisation's reputation in the marketplace [4,17,33]. This alignment transforms talent management into a competitive lever that combines internal efficiency with social, economic and environmental commitment for FF.

Likewise, SL, understood as the capacity to lead with a long-term vision, a strong sense of responsibility and coherence with organisational values, facilitates adaptation to changing environments and the creation of shared value [6,25,39]. In the coffee sector, leaders who foster trust, innovation and cohesion are more likely to consolidate strong relationships with their environment, which translates into sustained and sustainable competitive advantages.

Based on the above, the following hypothesis is proposed:

Hypothesis (H2). *SL has a direct positive effect on the CP of FF.*

SP as a Mediator of the Relationship between SHRM and SL

In an environment characterised by uncertainty and increasing social, environmental, and regulatory pressures, organisations are called upon to adopt responsible and inclusive governance models. In this context, SL acts as a catalyst for organisational change; however, its effect on CP often materialises indirectly through SP [35,41].

From this perspective, SP constitute the main operational channel through which SL translates its vision into organisational outcomes. These practices enable leaders' values to be transformed into concrete and sustainable actions across three interdependent dimensions: economic, environmental, and social [22].

SP thus serve as the operative mechanism through which leadership values are embodied in tangible actions within the economic, social and

environmental dimensions [22]. In FF, these practices acquire a dual function: enhancing competitiveness while sustaining community cohesion and cultural rootedness [15,27].

The economic dimension relates to operational efficiency, innovation, and long-term value creation [52,53]; the social dimension to employee well-being, equity, and relational capital; and the environmental dimension to energy efficiency, waste reduction, and responsible use of resources [54,55].

According to the report by the Organisation for Economic Co-operation and Development [56], the integration of SP in small and medium-sized enterprises not only responds to ESG standards but also enhances their capacity for innovation, differentiation, and strategic adaptation, enabling access to green financing, integration into global value chains, and the retention of sustainability-conscious consumers [52]. From the perspective of the RBV [38] and Stakeholder Theory [57], SP represent valuable, difficult-to-imitate, and externally oriented organisational capabilities, which explains their mediating role between leadership and CP.

From these perspectives, recent evolutionary analyses indicate that linking SP with SHRM is increasingly connected to competitiveness [58], and additionally, in this line, the authors [59] reinforce the idea that human resource systems grounded in ethical alignment and sustainability create the conditions for stronger organisational performance and long-term strategic advantage. This implies going beyond internal policies to generate positive impacts in community-oriented contexts, under the premises of sustainability. This orientation, which combines employee well-being and organisational transformation towards sustainability, strengthens the firm's competitiveness [60].

Accordingly, the following mediation hypotheses are proposed:

Hypothesis (H3). *SP mediate the relationship between SHRM and CP.*

Hypothesis (H4). *SP mediate the relationship between SL and CP.*

Integrated KM Applied to Sustainable Practice Model

KM is recognised as a first-order strategic resource for enhancing CP and facilitating the transition towards sustainable models [61]. From the RBV, intangible resources particularly organisational knowledge constitute a key source of sustainable competitive advantage, provided they are valuable, rare, inimitable, and non-substitutable [38]. The Knowledge-Based View complements this perspective by positing that the primary function of the firm is to integrate and apply knowledge to create value [62,63].

Authors such as [64] developed the SECI model socialisation, externalisation, combination, and internalization to explain the dynamic conversion between tacit and explicit knowledge as the foundation of organisational innovation. This perspective converges with the proposal of [65] on learning organisations, where continuous learning and systems

thinking strengthen adaptive and resilient capacities. Recent research highlights that KM strategies act as enablers when articulated with Corporate Social Responsibility (CSR) practices, thereby enhancing innovation and competitiveness [28,29].

The literature also emphasises that integrating knowledge oriented towards SP requires leadership with a long-term vision and an organisational culture conducive to innovation [66]. From the standpoint of Dynamic Capabilities Theory, KM is understood as a capability that enables the integration, building, and reconfiguration of competences to respond swiftly to environmental challenges [67]. Consequently, KM not only drives innovation and CSR but may also play a moderating role in the relationship between SP and CP [68].

In the case of FF, KM serves as a bridge between tacit knowledge (derived from intergenerational experience and territorial rootedness) and explicit knowledge (the formalisation of SP and innovations). This articulation fosters the creation of economic, social and environmental value, thereby enhancing both competitiveness and long-term sustainability [69].

In this way, KM enables the capitalisation of experiences derived from SP, transforming them into continuous improvements that strengthen CP [64,70]. Both SHRM and SL benefit from this flow of knowledge, which enhances the positive effects of SP on competitiveness. Therefore, the theoretical framework illustrated in Figure 1 acknowledges that competitiveness in FF does not depend solely on internal efficiency, but rather on the interaction between SHRM, leadership, sustainability and organisational knowledge within a framework of governance and family values.

Accordingly, the fifth hypothesis is proposed:

Hypothesis (H5). *KM moderates the mediation between SP and CP*.

Competitive Performance within the Framework of Sustainability

CP has traditionally been measured through economic indicators such as profitability, productivity or market share. However, recent approaches to corporate sustainability broaden this view by integrating environmental and social dimensions into performance assessment [71,72]. In this regard, sustainability rating systems and balanced KPIs grounded in the triple bottom line framework link integrated sustainability performance to long-term strategic alignment and competitive advantage [73].

In the case of FF, CP depends not only on internal efficiency but also on social legitimacy, territorial embeddedness and resilience to climatic and market volatility [15,74].

The literature shows that SP, both social and environmental, enhance financial performance and corporate reputation [52]. By integrating the principles of the triple bottom line, firms strengthen their capacity for

innovation and differentiation [75]. From the perspective of RBV, proactive sustainability strategies generate dynamic capabilities that are difficult to imitate, thereby reinforcing competitive advantage [76]. Recent studies confirm that eco-innovation improves relationships with stakeholders and enhances the competitive positioning of organisations [43].

In family businesses, this relationship becomes even more significant, as CP is closely linked to intergenerational legacy and the ability to transfer both economic and social value across generations [32]. Recent research confirms that legacy operates as an articulating mechanism of values and practices that are transmitted and transformed over time, shaping both strategic orientation and the way business families conceive their continuity [77].

Accordingly, the theoretical model presented in Figure 2 recognises that competitiveness in coffee FF does not depend solely on internal efficiency but rather on the interaction between SHRM, leadership, sustainability, and organisational knowledge within a framework of governance and family values.
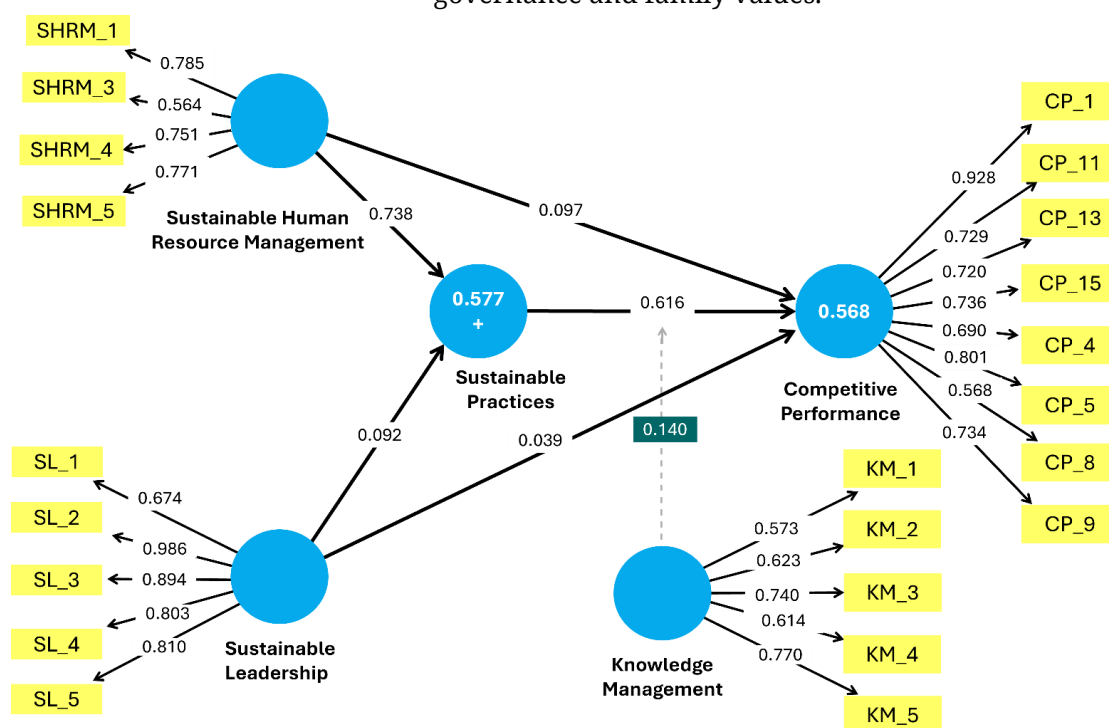

Figure 2. Structural model. Source: authors' own elaboration based on the Smart PLS 4.1.1.4.

METOHODOLOGY

The present study employed a quantitative methodology in which measurement instruments for the constructs were validated, and the hypothesised relationships were tested through structural equation modelling under the PLS-SEM. For data collection, a structured survey instrument was designed and distributed across six thematic blocks. Each dimension was assessed using five items on a seven-point Likert scale,

ranging from 1 (strongly disagree) to 7 (strongly agree), following the recommendations of [78] for PLS-SEM analysis.

After the theoretical review, content validity was conducted through expert judgement, given that the instrument was adapted for the purposes of this study. The five experts evaluated the conceptual clarity of the items, the coherence between latent and observable variables, the sufficiency to determine whether the items adequately addressed the constructs, the relevance to ensure the themes were of interest to respondents, and the absence of response induction to confirm the lack of bias from the researchers [79]. A pilot test with 12 volunteers contacted by the researchers was also carried out to make further adjustments and improve item clarity.

Subsequently, the measurement instruments were validated through exploratory factor analysis (EFA) to carry out an initial assessment of the quality and relevance of the items. Confirmatory factor analysis (CFA) was then applied to evaluate the reliability and validity of the constructs, including both convergent and discriminant validity. Thereafter, Structural Equation Modelling (SEM) was performed using the adjusted PLS technique to ensure the robustness and quality of the analysis. The software SmartPLS version 4.1.1.4 [80] was used for this purpose.

Sample

This study was conducted within the framework of the Comité de Cafeteros de Antioquia (CCA), a regional entity affiliated with the Federación Nacional de Cafeteros de Colombia (FNC), a non-profit guild organisation representing coffee-producing families. The FNC is responsible for aligning coffee production with sustainability policies, rural well-being, and productive development in the country, being one of the most representative institutions in Colombian agriculture [81,82].

The sample was non-probabilistic and based on convenience, given the difficulties in accessing the totality of FF.

Supported by the exploratory nature of the proposed model, a non-probabilistic convenience sampling method was used due to the accessibility of firms that authorised the use and management of their data. Moreover, representativeness was sought by including companies of various production scales from small to large and with different governance structures. This followed the recommendations of [83] for PLS-SEM studies in very specific and hard-to-access social contexts. Similarly, following [84], non-probabilistic sampling allows researchers to address the practical constraint of obtaining an exhaustive sampling frame a situation frequently encountered in the social and behavioural sciences. Consequently, the non-probabilistic sample is appropriate for the aim of this research, as it seeks to maximise explained variance and assess causal relationships, which is inherent to the PLS-SEM approach [85].

Accordingly, the sample consisted of 232 valid surveys administered to executives, department heads, supervisors, and administrative

professionals linked to coffee companies affiliated with the CCA, as well as to owners of family coffee businesses. Regarding the obtained sample, it is important to note its statistical relevance, as it far exceeded the recommendations for PLS-SEM studies, following the guidelines of [86] and their 10-times rule. In the present model, the construct SP comprised 12 indicators, thus requiring a minimum of 120 cases. Therefore, the obtained sample (n = 232) significantly surpassed this threshold [87].

In our study, the selection of this group responded to the need to capture the perceptions and experiences of actors with direct or indirect responsibility in strategic decision-making, the implementation of SP, and human talent management. This approach aligns with previous research highlighting that senior and middle managers possess privileged knowledge of internal processes and organisational sustainability dynamics [17,35].

The target population focused on organisations with a consolidated business structure within the coffee value chain but with variability in size, technological level, and degree of formalisation, allowing for a more heterogeneous representation of the constructs. Regarding the inclusion process, both in-person and virtual questionnaires were administered during the fieldwork period, which took place between August 2024 and June 2025, in coordination with the CCA.

Participation was voluntary and aimed at managers, supervisors, and owners of family businesses with decision-making responsibilities related to sustainability practices, leadership, and human talent management. Prior to data collection, informed consent and confidentiality were ensured in accordance with institutional ethical guidelines.

Measurement Instruments

To ensure that the data collected were reliable and representative of the coffee sector's reality, a structured questionnaire was designed, organised into six thematic blocks. Each block corresponded to one construct in the model: SHRM, SL, SP, CP, KM, and a sociodemographic section. Item selection was not arbitrary: it was based on recognised and validated scales from previous studies, but adapted to resonate with the everyday reality of coffee producers in Antioquia.

Content validity was ensured through expert judgement, guaranteeing item relevance. The evaluation criteria included: sufficiency (analysing importance and comparability), clarity (assessing conceptual relevance), coherence (ensuring item alignment with the construct), relevance (confirming contextual adequacy), and absence of response induction (ensuring objectivity and impartiality). Each item was rated on a five-point scale, and agreement levels were determined by calculating the mode for each criterion. Items with a mode of 4 or 5 were selected.

Measurement Instrument for SHRM

For SHRM, the scale employed was based on empirically validated instruments developed by [17,37] complemented by the conceptual foundations of sustainability in people management proposed by [18].

The original items from [37], corresponded to the Green Human Resource Management (GHRM) scale; however, in the present study, they were adapted towards a more integrative SHRM approach, replacing the exclusively environmental emphasis with a broader and more holistic understanding of organisational sustainability, consistent with the theoretical orientations of [17,33]. The adaptations made and the final items included in the instrument are presented in Table 2.

Table 2. Adapted items for SHRM construct.

Adapted Item for SHRM	Original Item [37]	Theoretical and Conceptual Adaptation	Source of Reference
Our organisation promotes sustainable values among its employees	"Our company sets green values for its employees".	The term "green values" was adapted to "sustainable values", integrating social, economic, and environmental dimensions.	[17,33]
Our organisation provides employees with sustainability training to develop the knowledge and skills required for responsible management	"Our company provides employees with green training to develop the knowledge and skills required for green management"	"Green training" was adapted to "sustainability training" according to the sustainable learning approach propose	[17,33]
In our organisation, rewards and compensation are linked to employees' sustainable behaviour	"In our organization, the reward and compensation for services are associated with the environmental behaviour of employees"	"Environmental behaviour" was adapted to "sustainable behaviour"	[17,33]
Employees in our organisation understand the company's sustainability policies	"The employees of our organization understand the company's environmental policies"	"Environmental policies" was adapted to "Sustainability policies" to reflect an integrated sustainability framework.	[17,33]
Our organisation applies ethical and sustainability principles as a guide for labour and organisational decision-making	"Our organization utilises ethical rules as a stimulus for environmental issues"	"Environmental issues" was adapted to "sustainable labour and organisational decisions-making"	[17,33]

Source: Authors' own elaboration based on the referenced authors.

Measurement Instrument SL

The present study, the items proposed by [39] for the Green Transformational Leadership (GTL) scale were adapted to operationalise the construct of SL. The original GTL items focused primarily on the environmental dimension of leadership; however, for the purposes of this research, they were reoriented towards a comprehensive sustainability approach that encompasses the triple bottom line environmental, social, and economic performance.

This adaptation was conducted in accordance with the conceptualisation of SL advanced by [35] and grounded in the theoretical foundations established by [23,88]. Moreover, ethics is addressed as a transversal principle of SL. The adaptations and final items are presented in Table 3.

Table 3. Adapted items for SL construct.

Adapted Item for SL	Original Item [39]	Theoretical and Conceptual Adaptation	Source of Reference
I inspire my collaborators with the organisation's sustainability vision	"I inspire my collaborators with the environmental plan"	The term "environmental plan" was adapted to "sustainability vision", integrating environmental, social, and economic goals.	[23,35,88]
I provide my collaborators with a clear sustainability-oriented vision	"I provide my collaborators with a clear environmental vision"	"Environmental vision" was adapted to "sustainability-oriented vision" aligning with the triple bottom line perspective.	[23,35,88]
I encourage my collaborators to work towards the organisation's sustainability goals	"I encourage my collaborators to work on the environmental plan"	"Environmental plan" was adapted to "sustainability goals"	[23,35,88]
I stimulate my collaborators to think creatively and share ideas for sustainability improvement.	"I stimulate my collaborators to think and share their ideas for environmental improvement"	"Environmental improvement" was adapted to "sustainability improvement" to reflect an integrated sustainability framework.	[23,35,88]
I promote values that foster trust, open communication, and purpose within the organisation	"I promote values that enable communication with trust, flexibility, and purpose"	The item was adapted to emphasise ethical communication and shared purpose aligned with sustainability values	[23,35,88]

Source: Authors' own elaboration based on the referenced authors

Measurement Instrument for SP

The construct of SP was operationalised following the indicators proposed by [19], which were adapted to the context of FF in Colombia. SP was modelled as a second-order reflective construct composed of three first-order dimensions: economic, environmental and social.

The economic dimension included items related to local employment, the purchase of inputs from regional suppliers, and the allocation of funds for sustainability-oriented projects, reflecting the firm's ability to generate shared value and resource efficiency.

The environmental dimension comprised indicators on the reduction of resource consumption, protection of biodiversity, and implementation of environmentally responsible production processes, representing the operationalisation of ecological responsibility.

Finally, the social dimension captured aspects of employee well-being, equity, and community engagement through items referring to donations, participation in local initiatives, and promotion of sustainable behaviours among workers.

Measurement Instrument for CP

Adapted from Yu [89] and grounded in the conceptual foundations of [52], this block incorporated indicators that go beyond traditional financial performance to include dimensions of social legitimacy associated with sustainability. In line with the proposal of [58], who link competitive performance with frameworks of human and organisational sustainability, the items were designed to capture how FF maintain their competitiveness in demanding global markets without relinquishing a

sustainability-oriented and responsible approach towards their key stakeholders.

Measurement Instrument for KM

Adapted from the SECI model of organisational knowledge creation proposed by [64] and the measurement scale developed by [70], specific items were designed to analyse how sustainability-related knowledge is created, shared, stored and applied in FF. The purpose was to assess the extent to which these processes of socialisation, externalisation, combination and internalisation of knowledge translate into practices that strengthen CP.

RESULTS

A total of 42 items were initially proposed as a result of the literature review. After expert assessment, three were discarded due to a lack of clarity and relevance. The pilot test only suggested minor wording adjustments, so 39 items were retained for quantitative validation.

Instrument Validation

The EFA was conducted using SPSS software, ref. [90] applying the Promax principal axis rotation method, which is suitable for reflective models. The inferential analysis was carried out using the Kaiser-Meyer-Olkin (KMO) measure to test data consistency and the relevance of the variables to the measurement objective. With a KMO value of 0.79, the sample size was deemed excellent according to the parameters established by [83], as well as Bartlett's test of sphericity, which yielded a chi-square value of 4448.536 and a significance level of $p < 0.000$. Thus, the adequacy and relevance of the instrument were confirmed, demonstrating that the EFA was appropriate.

The internal reliability of each construct was assessed using Cronbach's alpha coefficient. A threshold value of ≥0.70 was adopted as acceptable, in line with standards for confirmatory studies [83]. During the EFA, items with loadings below 0.50 were removed to retain only indicators that made a significant contribution to the construct [78].

For SHRM, five items were quantitatively assessed, all with loadings above 0.50, except for two that were 0.46, evidencing their relevance; only one item (SHRM2) was removed. For SL, all five items were validated, each with loadings above 0.50. For KM, loadings ranged from 0.50 to 0.79, with only one item (KM6) removed. In CP, 8 of 12 items were validated, all with loadings above 0.69, with the highest being 0.80. For the mediating variable SP, 12 of 16 items were validated, with loadings between 0.57 and 0.91 [91].

The total variance explained was also calculated, yielding a cumulative percentage of 73.11%, exceeding the minimum threshold of 60% [91], thereby confirming the practical significance of the factors. The analysis

was conducted using principal factor extraction and Promax rotation, consistent with the reflective nature of the model [91]. Accordingly, the final instrument comprised 39 items with factor loadings ranging from 0.57 to 0.91 and Cronbach's alpha values between 0.739 and 0.921, demonstrating the instrument's validity. The results of the reliability and convergent validity analysis are shown in Table 4.

Table 4. Results of reliability and validity analysis of the instrument.

Item	Factor Loading	Cronbach's α
SHRM1	0.73	0.813
SHRM3	0.68	
SHRM4	0.71	
SHRM5	0.76	
SL1	0.79	0.921
SL2	0.81	
SL3	0.84	
SL4	0.87	
SL5	0.90	
PS1	0.57	0.919
PS2	0.61	
PS3	0.69	
PS4	0.74	
PS5	0.77	
PS6	0.80	
PS7	0.83	
PS8	0.91	
KM1	0.53	0.739
KM2	0.62	
KM3	0.67	
KM4	0.71	
KM5	0.79	
CP1	0.69	0.911
CP2	0.72	
CP3	0.74	
CP4	0.76	
CP5	0.78	
CP6	0.80	
CP7	0.81	
CP8	0.83	

Source: Author's own elaboration based on SPSS

All constructs exceeded the recommended thresholds (α > 0.70; AVE > 0.50), confirming internal consistency and convergent validity [83]. These findings demonstrated the reflective nature of the model, as the items represent observable manifestations of the latent construct [83,84]. The reflective character of the model was evidenced by the high internal consistency and correlation among the indicators of each construct. Consequently, the factor loadings and Cronbach's alpha values (≥0.70) confirmed the suitability of this orientation.

Likewise, these findings are consistent with the contributions of [92], who argue that reflective models are appropriate for perception-based studies, whereas formative models are more suitable for formal and concise analyses.

Confirmatory Factor Analysis

The factor loadings of the items were all above 0.70, which is an excellent value supporting item retention. Cronbach's alpha values exceeded 0.74, while composite reliability values were above 0.81, surpassing the 0.70 threshold recommended by [92] for demonstrating reliability and internal consistency. Convergent validity, assessed through average variance extracted (AVE), was above 0.50 for SHRM, 0.70 for SL, 0.55 for CP, between 0.59 and 0.88 for SP, and between 0.51 and 0.541 for KM, thereby confirming convergent validity (≥0.50) [83]. Table 5 shows the results for reliability and convergent validity.

Table 5. Reliability and convergent validity of the model.

Construct	Cronbrach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	AVE
CP	0.911	0.916	0.907	0.554
KM	0.739	0.510	0.616	0.541
SHRM	0.813	0.823	0.812	0.523
SL	0.921	0.933	0.922	0.705
SP	0.919	0.927	0.920	0.593

Source: authors' own elaboration based on the Smart PLS 4.1.1.4.

Discriminant Validity

Discriminant validity was assessed using the Heterotrait-Monotrait ratio (HTMT). The correlations between indicators were all below 0.85, with confidence intervals below 1 [93]. Consequently, HTMT confidence intervals were below the 0.85 threshold in all cases (see Table 4), confirming discriminant validity of the model. The highest correlation was 0.75 between SHRM and SP, which still remained within the acceptable range. These results demonstrate that the constructs were properly differentiated both conceptually and operationally, as shown in Table 6.

Table 6. Discriminant validity (HTMT).

Construct	CP	KM	SHRM	SL	SP	KM × SP
CP	-	-	-	-	-	-
KM	0.781	-	-	-	-	-
SHRM	0.658	0.774	-	-	-	-
SL	0.483	0.530	0.802	-	-	-
SP	0.701	0.406	0.751	0.731	-	-
KM × SP	0.290	0.327	0.152	0.443	0.721	-

Source: authors' own elaboration based on the statistical data from the PLS-SEM analysis.

Similarly, discriminant validity was verified using the [94] criterion, which involves comparing the square root of the AVE of each construct with its correlations with the other constructs. As shown in Table 7, in all cases the square roots of the AVE values were greater than the correlations off the diagonal, thereby confirming the discriminant validity of the measurement models.

Table 7. Fornell-larcker criterion.

Construct	SHRM	SL	PS	KM	CP
SHRM	0.723	-	-	-	-
SL	0.544	0.840	-	-	-
PS	0.561	0.597	0.826	-	-
KM	0.507	0.536	0.551	0.738	-
CP	0.589	0.612	0.653	0.574	0.807

Source: authors' own elaboration based on the Smart PLS 4.1.1.4.

Structural Model Indicators

The model confirmed the mediating role of SP in the relationships between SHRM and CP, with adequate path coefficients (>0.30) and significance levels ($p < 0.005$), as shown in Table 8. Likewise, the moderating variable presented a path coefficient that confirmed the moderating effect of KM ($\beta = 0.140$). Direct effects of SHRM on CP and SL on CP were not confirmed. Figure 2 shows the validation of the structural model.

Table 8. Path coefficients of the structural model.

Path	Path Coefficient	*p*-Value
KM → CP	0.350	$p < 0.001$
KM × SP → CP	0.311	$p < 0.001$
SHRM → CP	0.097	$p < 0.014$
SL → CP	0.039	$p < 0.021$
SP → CP	0.616	$p < 0.000$

Source: authors' own elaboration based on the statistical data from the PLS-SEM analysis.

With respect to mediation results, indirect effects are presented in Table 9. The path coefficients for the indirect effects were higher than the direct structural paths between latent and observed variables.

Table 9. Indirect effects

Indirect Effect	Specific Indirect Effect
SHRM → SP → CP	0.455
SL → SP → CP	0.257

Source: authors' own elaboration based on the statistical data from the PLS-SEM analysis.

The explained variance was assessed through R^2 and adjusted R^2 indicators, with values ≥ 0.10 (acceptable) and ≥ 0.25 (good) considered indicative of appropriate explanatory capacity of the constructs. The model demonstrated excellent predictive ability, with values ≥ 0.50. For the dependent variable CP, R^2 was 0.568 and adjusted R^2 was 0.559, indicating a strong explanatory power, with more than 55% of the variance explained [78]. more than 55% of the variance of the dependent variables is explained [85], which indicates a solid contribution to SHRM, SP, and CP studies. Regarding the predictive validity of the model, the results showed $Q^2 = 0.31$ for CP, indicating a high predictive capacity, and $Q^2 = 0.23$ for SP, reflecting a medium predictive capacity.

With respect to the effect size, the following estimates were found (Table 10). The model validated that SP, as a mediating variable, exerts a large effect on the dependent variable CP (f^2 = 0.294 and 0.245, respectively), highlighting its importance in the strategic and operational approach of organizations. Regarding SHRM, SP, and the moderation of KM, the results reveal a moderate effect on the dependent variable, ranging between 0.157 and 0.246. Finally, for SL and CP, the model shows a very small effect size, with a limited statistical contribution (f^2 = 0.016) (see Table 10).

Table 10. Effect size (f^2).

Path	f^2
KM → CP	0.157
KM × SP → CP	0.294
SHRM → CP	0.245
SHRM → SP	0.246
SL → CP	0.016
SL → SP	0.199
SP → CP	0.295

Source: authors' own elaboration based on the Smart PLS 4.1.1.4.

For mediation analysis, collinearity statistics were checked. As shown in Table 11, all variance inflation factor (VIF) estimates were well below the threshold of 3.3 recommended by [78]. In particular, the dependent variable CP showed values between 1.008 and 1.744, ruling out multicollinearity issues. This indicates that the independent, mediating, and moderating variables did not introduce redundancy into the structural model.

Since the proposed causal relationships belong to a reflective model, the verification of collinearity was carried out among the predictor constructs of the structural model, rather than among the indicators (which are expected to be highly correlated by the very nature of reflective models). Nevertheless, potential redundancies between latent constructs were ruled out by analysing the VIF values, which in the structural model ranged from 1.008 to 1.744, well below the recommended threshold of 3.3 suggested by [85]. This confirms the absence of multicollinearity problems among the exogenous variables (see Table 11).

Table 11. Collinearity indicators.

Predictor	VIF (on Dependent Variable)
KM	1.042
SL	1.086
SHRM	1.722
SP	1.744
KM × SP	1.008
Dependent Variable: CP	-

Source: authors' own elaboration based on the Smart PLS 4.1.1.4.

Regarding the model fit, the NFI values (0.801–0.810) are slightly below the conventional threshold of 0.90; however, recent studies suggest that in

PLS-SEM models with complex mediations, an NFI > 0.80 is acceptable as an indicator of good model fit [85]. Similarly, the SRMR value (0.043), which is well below the 0.08 threshold suggested by [83], indicates a good overall fit of the model.

DISCUSSION

Theoretical Integration of Finding

The empirical validation of the PLS-SEM model supports the integrative theoretical framework that links SL, SHRM, and SP with CP. These relationships reinforce the propositions of the RBV [38] and the Stewardship Theory [49], showing that leadership and human resource systems act as complementary intangible resources that foster dynamic capabilities for sustainability [33,35].

However, the asymmetry among the three sustainability dimensions (economic, environmental and social) indicates that contextual factors such as institutional weakness, informal governance and limited normative pressure moderate the extent to which SL translates into measurable outcomes, particularly within FF in emerging economies.

In family firm settings, the orientation towards continuity and survival explains how idiosyncratic resources such as social capital, trust, and territorial embeddedness are mobilised to reinforce internal processes and organisational efficiency [15,28]. Thus, economic and environmental practices not only generate immediate outcomes but also become channels through which SHRM and SL are translated into distinctive, hard-to-imitate capabilities, consistent with the logic of the RBV [38]. This aligns with the literature on proactive environmental strategies, which highlights innovation and eco-efficiency as sources of sustainable competitive advantages [54,76].

Limitations of the Social Dimension and the Role of SL

The limited representation of the social dimension within FF can be attributed, first, to governance structures that privilege control and continuity, thereby relegating social investments perceived as risky or less profitable in the short term [95,96], a trend also reflected in recent empirical studies on sustainability maturity in FF, where the social dimension consistently lags behind environmental and economic domains [97]. Resource constraints also play a role, pushing firms towards informal community networks rather than formalised programmes [98]. Finally, social performance measurement remains ambiguous and insufficiently standardised, as highlighted by [60] in their proposal for net-positive impact scales, and by [83] in their discussion of the challenges of capturing such dimensions within PLS-SEM models.

This result should be interpreted considering that the social dimension, operationalised through indicators of well-being and participation, tends

to be expressed informally in family SMEs, which may limit its empirical capture within the PLS-SEM model.

SL, on the other hand, emerges as an exogenous driver that aligns long-term vision with territorial embeddedness, channelling intergenerational values into SP with economic and environmental impact [50]. In FF, this stewardship role reinforces ethical coherence and legitimacy [49], though it does not always translate into immediate and measurable social outcomes [46,41].

Continuity and family legacy influence the ways in which SHRM and SL contribute to CP. Territorial reputation and transmitted values underpin decisions that privilege stability and resilience, with stronger emphasis on economic and environmental outcomes; the social dimension, being more intangible, tends to manifest in informal ties and remains under-measured [99].

This finding reveals a theoretical boundary condition for the social dimension of sustainability. While family-based governance fosters trust and continuity, it can paradoxically constrain the institutionalisation of social practices [100,101]. The absence of formal metrics and the predominance of informal community ties limit the visibility and measurement of social performance, turning it into a latent dimension that, although culturally embedded, remains underrepresented in statistical models. This gap invites future research to develop integrative frameworks and measurement tools that capture social value creation beyond economic and environmental proxies.

The interpretative synthesis of these mediating effects is presented in Table 12, which summarises how the economic, environmental, and social dimensions interact within FF and the varying degrees of their institutionalization.

Table 12. Interpretative synthesis of SP mediation by dimension in FF.

SP Dimension	Ex ante Motivation in FF	Predominant Mechanism	Usual Measurement/ Operationalisation	Expected Impact on CP This Study
Economic	Survival, efficiency, cost savings, pressure from key clients, local reputation [9,11,30,48]	SHRM drives process improvements; SL legitimises changes; KM captures and disseminates learning	Efficiency, productivity, innovation, reputation indicators	Strongest and most significant effect [18,33,102]
Environmental	SL associated with building sustainable cultures and intergenerational commitment [9,11,18,20]	SL shapes sustainable vision; SHRM facilitates pro-environmental behaviours; KM standardises practices	Waste/emission reduction, responsible use of resources	Strong and robust effect due to visible returns and legitimacy [54]
Social	Linking sustainability with economic, social, and environmental performance [21,22,95,96]	Stewardship provides guidance, but institutionalisation remains partial; informal networks substitute formal programmes	Well-being, equity, community metrics; heterogeneous and diffuse	Weak/non-significant effect due to informality and measurement limitations [60,85,99]

Source: Own elaboration.

Mediation Effects, KM, and Practical Implications

The validation of mediations H3 and H4 confirms that SP function as a bridge between SHRM, SL, and CP. Nevertheless, economic and environmental dimensions mediate more strongly than the social one, which nuances the RBV by illustrating how familiness channels resources towards tangible efficiencies [38], while stewardship perspectives explain the preference for initiatives that secure reputational and technical continuity [18,33].

KM emerges as an articulating axis that enables the transformation of informal learning into sustainable organisational capabilities. From the SECI model [64] to recent evidence showing how the interaction between knowledge and social responsibility fosters innovation [28], it becomes evident that the social dimension requires explicit learning and transfer mechanisms that transcend family logics to consolidate into systematic governance structures capable of integrating social practices coherently with economic and environmental domains.

Overall, the discussion reaffirms that the proposed model not only offers an integrative perspective but also fills a gap in the literature by empirically demonstrating through robust evidence how SP and KM interact to strengthen the competitiveness of coffee FF. This framework, supported by key contributions such as [18,33,35,60], showcases the originality of the model by positioning KM as the thread that transforms SP into tangible strategic value. In doing so, it provides a transferable reference framework adaptable to other productive sectors with similar characteristics.

Theoretical and Managerial Implications

From a theoretical standpoint, this study deepens the understanding of how SHRM and SL operate synergistically through SP to influence CP, in line with the research of [103,104], who highlight the need to move towards systemic and integrative sustainability models. The model confirms that leadership embodies the behavioural pathway that activates sustainable capabilities embedded in HR systems, while SP translate these into operational realities. The non-significant role of the social dimension further refines sustainability theory by evidencing that social outcomes depend on contextual governance, institutional strength, and measurement maturity.

This asymmetry may also be related to the nature of the indicators used to measure each dimension. While economic and environmental practices are often institutionalised through management systems and measurable processes, social practices such as employee well-being, equity, and community engagement are typically embedded in informal routines and relational norms. This aligns with [100,104], who highlight that in FF, social sustainability is frequently expressed through relational trust and moral obligations rather than formalised mechanisms. Consequently, the

weaker empirical weight of the social dimension does not necessarily imply a lack of commitment, but rather a lower degree of structural articulation within organisational governance.

CONCLUSIONS

Theoretical Contributions

This study refines the understanding of how SL and SHRM operate jointly through SP to enhance CP in FF within the Colombian coffee sector. The findings substantiate an integrative. The findings substantiate an integrative perspective consistent with resource and knowledge-based arguments, showing that leadership and HR systems act as complementary intangible assets that enable dynamic capabilities. Crucially, the mediating role of SP is uneven across dimensions: economic and environmental practices exhibit robust links to CP, whilst the social dimension shows limited and context-dependent effects. This asymmetry adds nuance to sustainability theory by suggesting that the translation of values into outcomes depends on institutional maturity, governance formality, and measurement readiness in rural family business settings.

Practical Contributions to Management

For owners and managers of family SMEs, the results highlight the value of aligning SL and SHRM with verifiable sustainability routines. Priorities include (i) embedding sustainability-related objectives in HR systems, (ii) routinising economic and environmental practices that improve efficiency, innovation, and legitimacy, and (iii) formalising knowledge flows so that lessons learned from SP become standard operating procedures. Strengthening these mechanisms can convert dispersed initiatives into repeatable capabilities, improving positioning in domestic and international markets.

Policy Implications

The evidence suggests that public policy can play a catalytic role in consolidating the social dimension of sustainability in rural SMEs. Policymakers should: (i) incentivise the formalisation and reporting of social practices; (ii) support training in SL, SHRM, and KM tailored to territorial realities; and (iii) promote collaborative platforms among producer associations, local governments, and universities to codify and diffuse effective practices. Such measures can bridge the current gap between informal community engagement and measurable social performance, complementing the stronger economic and environmental pathways.

Managerial Implications and Actionable Proposition

This section consolidates the previous operational, functional, and strategic proposals into six cohesive, evidence-based managerial propositions. Each derives directly from the validated mediations SP and the moderation effect KM in the PLS-SEM model and is theoretically anchored in the RBV, Stewardship Theory, and Knowledge-Based perspectives already discussed.

Institutionalise Sustainability within Human Resource Systems (SHRM)

Building upon the arguments of [33,35] this proposition highlights that sustainability must be embedded in HR subsystems to become a strategic capability. Selection, appraisal, and reward mechanisms should include sustainability performance indicators, ensuring that leadership behaviour and employee goals align with long-term sustainability outcomes. This formalisation transforms SHRM from an administrative function into a driver of competitive advantage, reinforcing the relational capital of family SMEs.

Lead for Operationalisation (SL-SP)

Consistent with [46], SL translates sustainability visions into daily routines by empowering middle managers and establishing participatory mechanisms. In a similar vein, ref. [105] shows that organisational capacities and innovation emerge when strategic intentions are operationalised through internal mechanisms and distributed implementation, strengthening resilience in FF.

Systematise Knowledge Flows (KM as Amplifier)

In line with the findings of [104], leadership and SHRM processes can be magnified through effective KM. Organisations should establish simple but consistent mechanisms repositories, feedback loops, and communities of practice to capture and disseminate lessons from SP across economic, environmental, and social dimensions. This systematisation enhances learning and accelerates sustainability-driven innovation cycles.

Strengthen the Social Dimension through Formal Mechanisms

Echoing [100,101], this proposition recognises that social outcomes in FF depend on governance formality. Informal social ties, though culturally valuable, are insufficient to produce measurable results. Establishing social performance metrics, well-being, equity, community engagement and periodic assessments can convert social capital into a strategic asset that complements economic and environmental gains.

Align with Market and Territorial Opportunities

As highlighted by [75], integrating sustainability principles into business models enhances product differentiation and international positioning. SMEs should align their SP with territorial resources and market demands, leveraging sustainability certifications, origin designations, and producer associations. This alignment allows family businesses to create shared territorial value while strengthening CP.

Governance for Continuity and Stewardship

Following the stewardship logic [49,100,101], effective governance mechanisms are crucial to sustain intergenerational commitment and strategic coherence. Family councils, protocols, and role clarity can institutionalise sustainability-oriented decision-making, reducing ad hoc management and ensuring the transmission of sustainable values across generations. Governance thus becomes the structural backbone linking leadership intent, SHRM processes, and sustained performance.

These six propositions synthesise theoretical and empirical insights into a coherent managerial roadmap for FF. They operationalise sustainability not as an isolated initiative but as an integrated management logic embedded in human systems, leadership routines and territorial interactions.

PROJECTION AND FUTURE RESEARCH DIRECTIONS

The proposed model can be adapted and further developed by incorporating additional relevant variables across different types of organisations and sectors. For instance, it would be valuable to explore the role of organisational culture, open innovation, wages and incentives, or inter-organisational collaboration as potential additional moderators or mediators, since these factors may enrich the understanding of the relationships among the dimensions analysed.

Moreover, future studies are proposed to conduct a comparative analysis with innovative Spanish firms, with the aim of verifying whether the relationships identified between SHRM, SL, SP, and KM are replicated in more advanced organisational contexts. This comparison would strengthen the external validity of the model and provide useful evidence for decision-making and public policy design.

DATA AVAILABILITY

The dataset generated and analyzed during the current study is available from the corresponding author upon reasonable request.

AUTHOR CONTRIBUTIONS

Conceptualization, CG-G, JC-G, SG-B and VASM; methodology, CG-G, JC-G, SG-B and VASM; software, CG-G, JC-G and SG-B; validation, CG-G, JC-G and SG-B; formal analysis, CG-G, JC-G and SG-B; investigation, CG-G, JC-G

and VASM; resources, CG-G, JC-G and SG-B; data curation, JC-G and VASM; writing—original draft preparation, CG-G, JC-G and SG-B; writing—review and editing, CG-G, JC-G and SG-B; visualization, CG-G and VASM; supervision, SG-B; project administration, SG-B; funding acquisition, SG-B. Authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

REFERENCES

1. Qorri D, Pergéné Szabó E, Felföldi J, Kovács K. The role of human resource management in agricultural labor saving technologies: An integrative review and science mapping. Agriculture. 2024;14(7):1144. doi: 10.3390/agriculture14071144.

2. Ehnert I, Parsa S, Roper I, Wagner M, Müller-Camen M. Reporting on sustainability and HRM: A comparative study of sustainability reporting practices by the world's largest companies. Int J Hum Resour Manag. 2015;27(1):88-108. doi: 10.1080/09585192.2015.1024157.

3. Ejibe I, Okoye CC, Nwankwo EE, Nwankwo TC, Scholastica UC. Eco sustainable practices through strategic HRM: A review and framework for SMES in the creative industries. World J Adv Res Rev. 2024;21(3):42-9. doi: 10.30574/wjarr.2024.21.3.0658.

4. Bučiūnienė I, Goštautaitė B. The role of sustainable HRM in mitigating the effects of the COVID-19 pandemic on employee well-being in education. Int J Public Admin. 2025; Epub ahead of print. doi: 10.1080/01900692.2025.2451386.

5. Aliyev J. Strategic human resource management (SHRM) and competitive advantage. SSRN. 2024; Epub ahead of print. doi: 10.2139/ssrn.4772231.

6. Iqbal S, Ahmad M, Nasir N, Khan MM. A systematic review of sustainable leadership. Sustain Dev. 2020a;28(4):1081-95. doi: 10.1002/sd.2062.

7. Ahsan MJ, Khawaja S. Sustainable leadership impact on environmental performance: Exploring employee well being, innovation, and organizational resilience. Discov Sustain. 2024;5(1):317. doi: 10.1007/s43621-024-00422-z.

8. Faisal M. Sustainable leadership and firm performance: A mediating role of green HRM. J Clean Prod. 2023;412:137289. doi: 10.1016/j.jclepro.2023.137289.

9. Boeske J. Leadership towards sustainability: A review of sustainable, sustainability and environmental leadership approaches. Sustainability. 2023;15(16):12626. doi: 10.3390/su151612626.

10. Nisha NT, Nawaz N, Mahalakshmi J, Gajenderan V, Hasani IA. A study on the impact of sustainable leadership and core competencies on sustainable competitive advantage in the information technology (IT) sector. Sustainability. 2022;14(11):6899. doi: 10.3390/su14116899.

11. Li N, Yao Q, Tang H, Lu Y. Is digitalization necessary? Configuration of supply chain capabilities for improving enterprise competitive performance. J Bus Res. 2025;186:114972. doi: 10.1016/j.jbusres.2024.114972.

12. Mustafa K, Hossain MB, Ahmad F, Ejaz F, Khan HGA, Dunay A. Green human resource management practices to accomplish green competitive advantage: A moderated mediation model. Heliyon. 2023;9(11):e21830. doi: 10.1016/j.heliyon.2023.e21830.

13. Kim TT, Kim WG, Majeed S, Haldorai K. Does green human resource management lead to a green competitive advantage? A sequential mediation model with three mediators. Int J Hospit Manag. 2023;111:103486. doi: 10.1016/j.ijhm.2023.103486.

14. Stahl GK, Brewster CJ, Collings DG, Hajro A. Enhancing the role of human resource management in corporate sustainability and social responsibility: A multi stakeholder, multidimensional approach to HRM. Hum Resour Manag Rev. 2020;30(3):100708. doi: 10.1016/j.hrmr.2019.100708.

15. Rojas Ospina A, Zuñiga Collazos A, Castillo Palacio M. Factors influencing environmental sustainability performance: A study applied to coffee crops in colombia. J Open Innov Technol Mark Complex. 2024;10(3):100361. doi: 10.1016/j.joitmc.2024.100361.

16. Tegethoff T, Santa R, Bucheli JM, Cabrera B, Scavarda A. Sustainable development through eco innovation: A focus on small and medium enterprises in Colombia. PLoS ONE. 2025;20(1):e0316620. doi: 10.1371/journal.pone.0316620.

17. Guerci M, Hauff S, Panichella N, Radaelli G. Sustainable HRM and class based inequality. Pers Rev. 2022;52(5):1597-613. doi: 10.1108/PR-10-2021-0772.

18. Kramar R. Sustainable human resource management: Six defining characteristics. Asia Pac J Hum Resour. 2022;60(1):146-70. doi: 10.1111/1744-7941.12321.

19. Chege SM, Wang D. The influence of technology innovation on SME performance through environmental sustainability practices in Kenya. Technol Soc. 2020;60:101210. doi: 10.1016/j.techsoc.2019.101210.

20. Casprini E, Palumbo R, De Massis A. Untangling the yarn: A contextualization of human resource management to the family firm setting. J Fam Bus Strateg. 2024;15(3):100621. doi: 10.1016/j.jfbs.2024.100621.

21. Paillé P. Green human resource management in family businesses: Exploring economic performance implications. Entrep Reg Dev. 2024;36(7-8):527-47. doi: 10.1080/08985626.2024.2404037.

22. Iqbal Q, Piwowar Sulej K. Sustainable leadership, environmental turbulence, resilience, and employees' well being in SMES. Front Psychol. 2022;13:939389. doi: 10.3389/fpsyg.2022.939389.

23. Liao Y. Sustainable leadership: A literature review and prospects. Front Psychol. 2022;13:1045570. doi: 10.3389/fpsyg.2022.1045570.

24. Tantry A, Gilani SAM, Al Sabbah S, Sitinjak C, Khan N, Mulla T, et al. Sustainable leadership styles adopted by small businesses in the UAE during and post COVID-19. Discov Sustain. 2025;6:570. doi: 10.1007/s43621-025-01426-z.

25. Iqbal S, Litvaj I, Drbúl M, Rasheed M. Improving quality of human resources through HRM practices and knowledge sharing. Admin Sci. 2023;13(10):224. doi: 10.3390/admsci13100224.

26. Navajas Romero V, Ceular Villamandos N, Pérez Priego MA, Caridad López del Río L. Sustainable human resource management: The mediating role between work engagement and teamwork performance. PLoS ONE. 2022;17(8):e0271134. doi: 10.1371/journal.pone.0271134.

27. De Souza Barbosa A, Crispim da Silva MCB, Bueno da Silva L, Morioka SN, Fernandes de Souza V. Integration of environmental, social, and governance (ESG) criteria: Their impacts on corporate sustainability performance. Hum Soc Sci Commun. 2023;10:410. doi: 10.1057/s41599-023-01919-0.

28. González-Ramos MI, Guadamillas F, Donate MJ. The relationship between knowledge management strategies and corporate social responsibility: Effects on innovation capabilities. Technol Forecast Soc Change. 2023;188(C):122287. doi: 10.1016/j.techfore.2022.122287.

29. Del Giudice M, Della Peruta MR. The impact of knowledge management on corporate social responsibility. J Knowl Manag. 2016;20(3):1-23. doi: 10.1108/JKM-12-2014-0493.

30. Martínez-Falcó J, Marco-Lajara B, Zaragoza-Sáez P, Sánchez-García E. The effect of knowledge management on sustainable performance: Evidence from the Spanish wine industry. Knowl Manag Res Pract. 2024;22(3):298-313. doi.org/10.1080/14778238.2023.2218045.

31. León Gómez A, Santos Jaén JM, Palacios Manzano M, Garza Sánchez HH. Unlocking sustainable competitive advantage: Sustainably oriented practices and SMES performance in the tourism sector. J Clean Prod. 2025; Epub ahead of print. doi: 10.1007/s10668-023-04025-y.

32. Radu-Lefebvre M. Legacy in family business: A systematic literature review. Fam Bus Rev. 2024;37(1):3-21. doi: 10.1177/08944865231224506.

33. Kramar R. Beyond strategic human resource management: Is sustainable human resource management the next approach? Int J Hum Resour Manag. 2014;25(8):1069-89. doi: 10.1080/09585192.2013.816863.

34. Lu Y, Zhang MM, Yang MM, Wang Y. Sustainable human resource management practices, employee resilience, and employee outcomes: Toward common good values. Hum Resour Manag. 2023;62(3):331-53. doi: 10.1002/hrm.22153.

35. Iqbal Q, Ahmad NH, Li Z, Li Y. To walk in beauty: Sustainable leadership, frugal innovation and environmental performance. Manag Decis Econ. 2022b;43(3):738-50. doi: 10.1002/mde.3415.

36. Sajjad A, Eweje G, Raziq MM. Sustainability leadership: An integrative review and conceptual synthesis. Bus Strateg Environ. 2024; Epub ahead of print. doi: 10.1002/bse.3631.

37. Khaskhely A, Muneer S, Haider SA, Riaz H. Understanding the impact of green human resource management practices and dynamic sustainable capabilities on corporate sustainable performance: Evidence from the manufacturing sector. Front Psychol. 2022;13:844488. doi: 10.3389/fpsyg.2022.844488.

38. Barney J. Firm resources and sustained competitive advantage. J Manag. 1991;17(1):99-120. doi: 10.1177/014920639101700108.

39. Singh SK, Del Giudice M, Chierici R, Graziano D. Green innovation and environmental performance: The role of green transformational leadership and green human resource management. Technol Forecast Soc Change. 2020;150:119762. doi: 10.1016/j.techfore.2019.119762.

40. Michiels A, Arijs D, Uhlaner LM. Formal HRM in family SMES: The role of family-centered goals and family governance. Rev Manag Sci. 2022;16(8):2553-76. doi: 10.1007/s11846-021-00509-1.

41. Iqbal Q, Ahmad NH. How does sustainable leadership influence sustainable performance? Empirical evidence from selected Asean countries. SAGE Open. 2020b;10(4):2158244020969394. doi: 10.1177/2158244020969394.

42. Kutaula S, Matthews B, Müller Camen M. Linking HRM with sustainability performance: The moderating role of employee sustainability participation and long term orientation. Br J Manag. 2024; Epub ahead of print. doi: 10.1111/1467-8551.12861.

43. Oduro S. Effect of social and environmental sustainability on SME competitiveness: A meta analysis of empirical studies. Eur Bus Rev. 2025; Epub ahead of print. doi: 10.1007/s11301-025-00519-3.

44. Burawat P. The relationships among transformational leadership, sustainable leadership, lean manufacturing and sustainability performance in Thai SMES manufacturing industry. Int J Qual Reliab Manag. 2019;36(6):1014-36. doi: 10.1108/IJQRM-09-2017-0178.

45. Wu Y, Awang SR, Ahmad T. Leadership styles, employee green behavior, and sustainable performance: The role of sustainable leadership in integrating transformational and ethical leadership dimensions. Environ Dev Sustain. 2025; Epub ahead of print. doi: 10.1007/s10668-025-06573-x.

46. Abdeen H, De-Pablos-Heredero C, Cosculluela-Martinez C, Montes-Botella JL. Strategic leadership and its impact on dynamic capabilities and sustainable competitive advantages. Manag Decis. 2025; Epub ahead of print. doi: 10.1108/MD-07-2024-1682.

47. Alqatan A, Simmou W, Shehadeh M, AlReshaid F, Elmarzouky M, Shohaieb D. Strategic pathways to corporate sustainability: The roles of transformational leadership, knowledge sharing, and innovation. Sustainability. 2025;17(12):5547. doi: 10.3390/su17125547.

48. Tyler BB, Lahneman B, Cerrato D, Cruz AD, Beukel K, Spielmann N, et al. Environmental practice adoption in SMES: The effects of firm proactive orientation and regulatory pressure. J Small Bus Manag. 2024;62(5):2211-46. doi: 10.1080/00472778.2023.2218435.

49. Davis JH, Schoorman FD, Donaldson L. Toward a stewardship theory of management. Acad Manag Rev. 1997;22(1):20-47. doi: 10.5465/amr.1997.9707180258.

50. Miller D, Le Breton-Miller I. Family governance and firm performance: Agency, stewardship, and capabilities. Fam Bus Rev. 2006;19(1):73-87. doi: 10.1111/j.1741-6248.2006.00063.x.

51. De Massis A, Solari L, Chua JH, Kotlar J. Family governance at work: Organizing for new product development in family SMES. Fam Bus Rev. 2016;29(2):137-55. doi: 10.1177/0894486515622722.

52. Momtaz PP, Parra IM. Is sustainable entrepreneurship profitable? ESG disclosure and the financial performance of SMES. Small Bus Econ. 2025;64:1535-64. doi: 10.1007/s11187-024-00981-5.

53. Sanz Torro V, Calafat-Marzal C, Guaita-Martinez JM, Marti L. An integrated approach to resource efficiency, green innovation and firm performance in SMES across EU 27 countries. J Assoc Small Bus Strateg. 2025; Epub ahead of print. doi: 10.1007/s11365-025-01098-1.

54. Ciasullo MV, Barile S, Saviano M, Caputo F. The interplay between social and environmental practices and organizational resilience: Empirical evidence. Bus Strateg Environ. 2024; Epub ahead of print. doi: 10.1002/bse.3530.

55. Sharma R, Skordoulis J, Panagiotis K. Building a sustainable future: The role of green innovation and resource efficiency in SMES. Environ Dev Sustain. 2025; Epub ahead of print. doi: 10.1007/s10668-025-06515-7.

56. Organisation for Economic Cooperation and Development (OECD). Financing SMES for sustainability: Drivers, constraints and policies. OECD SME and Entrepreneurship Papers No. 35. Paris (France): OECD Publishing; 2022. doi: 10.1787/a5e94d92-en.

57. Freeman RE. Strategic management: A stakeholder approach. London (UK): Pitman Publishing; 1984.

58. Giraldo-Giraldo C, Rubio-Andrés M, Rave-Gómez ED, Gutiérrez-Broncano S. Evolution of the concept and scientific mapping of Sustainable Human Resource Management S-(HRM). Admin Sci. 2025;15(2):39. doi: 10.3390/admsci15020039.

59. Gutiérrez-Broncano S, Rubio-Andrés M, Jiménez-Estévez P, Opute J, Giraldo-Giraldo C. Responsible Human Resource Management: A Strategic Approach. In Machado C, Davim JP, Editors. Building the Future with Human Resource Management. Cham (Switzerland): Springer International Publishing; 2024. p. 147-68. doi: 10.1007/978-3-031-52811-8_6.

60. Fischer-Kreer D, Greven A, Desel L, Brettel M. Measuring regenerative orientation: A new scale for firms' net-positive impact beyond sustainability. Eur Manag J. 2025; Epub ahead of print. doi: 10.1016/j.emj.2025.04.008.

61. Bergh DD, D'Oria L, Crook TR, Roccapriore A. Is knowledge really the most important strategic resource? A meta analytic review. Strateg Manag J. 2025;46:3-18. doi: 10.1002/smj.3645.

62. Grant RM. Prospering in dynamically competitive environments: Organizational capability as knowledge integration. Organ Sci. 1996a;7(4):375-87. doi: 10.1287/orsc.7.4.375.

63. Grant RM. Toward a knowledge-based theory of the firm. Strateg Manag J. 1996;17(S2):109-22. doi: 10.1002/smj.4250171110.

64. Nonaka I, Takeuchi H. The knowledge-creating company: How Japanese companies create the dynamics of innovation. Oxford (UK): Oxford University Press; 1995. doi: 10.1093/oso/9780195092691.001.0001.

65. Senge PM, Sterman JD. Systems thinking and organizational learning: Acting locally and thinking globally in the organization of the future. Eur J Oper Res. 1992;59(1):137-50. doi: 10.1016/0377-2217(92)90011-W.

66. Rehman UU, Iqbal A. Nexus of knowledge-oriented leadership, knowledge management, innovation and organizational performance in higher education. Bus Process Manag J. 2020;26(6):1731-58. doi: 10.1108/BPMJ-07-2019-0274.

67. Teece DJ, Pisano G, Shuen A. Dynamic capabilities and strategic management. Strateg Manag J. 1997;18(7):509-33. doi: 10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z.

68. López-Cabrales Á, Valle-Cabrera R. Sustainable HRM strategies and employment relationships as drivers of the triple bottom line. Hum Resour Manag Rev. 2020;30(3):100689. doi: 10.1016/j.hrmr.2019.100689.

69. Fazey I, Schäpke N, Caniglia G, Hodgson A, Kendrick I, Lyon C, et al. Transforming knowledge systems for life on earth: Visions of future systems and how to get there. Energy Res Soc Sci. 2020;70:101724. doi: 10.1016/j.erss.2020.101724.

70. Sahoo S, Kumar A, Upadhyay A. How do green knowledge management and green technology innovation impact corporate environmental performance? Understanding the role of green knowledge acquisition. Bus Strateg Environ. 2023;32(1):551-69. doi: 10.1002/bse.3160.

71. Holt TV, Whelan T. Research frontiers in the era of embedding sustainability: Bringing social and environmental systems to the forefront. J Sustain Res. 2021;3(2):e210010. doi: 10.20900/jsr20210010.

72. Papoutsi A, Sodhi MS. A sustainability disclosure index using corporate sustainability reports. J Sustain Res. 2020;2(2):e200020. doi: 10.20900/jsr20200020.

73. Lukács B, Rickards RC. Developing a consistent and transparent corporate sustainability rating system with a sector-agnostic approach. J Sustain Res. 2025;7(3):e250054. doi: 10.20900/jsr20250054.

74. Koporcic N, Kukkamalla PK, Markovic S, Maran T. Resilience of small and medium sized enterprises in times of crisis: An umbrella review. Rev Manag Sci. 2025;19(2):345-72. doi: 10.1007/s11846-025-00883-0.

75. Alkhalaf T, Al Tabbaa O. The effect of ability, motivation and opportunity (AMO) on SMES' innovation performance. Creat Innov Manag. 2023;33(1):21-38. doi: 10.1111/caim.12578.

76. Aragon-Correa JA, Sharma S. A contingent resource-based view of proactive corporate environmental strategy. Acad Manag Rev. 2003;28(1):71-88. doi: 10.5465/amr.2003.8925233.

77. Pauceanu AM. The old, the new, and the used one—assessing legacy. Adm Sci. 2025;15(3):106. doi: 10.3390/admsci15030106.

78. Hair JF Jr, Hult GTM, Ringle CM, Sarstedt M. A primer on partial least squares structural equation modeling (PLS SEM). 3rd ed. Thousand Oaks (CA, US): Sage; 2021. doi: 10.1007/978-3-030-80519-7.

79. Robles Garrote P, Rojas M del C. Validation by expert judgements: Two cases of qualitative research in applied linguistics. Rev Nebrija Lingüíst Aplicada Enseñanza Lenguas. 2015;9(18):124-39. doi: 10.26378/rnlael918259.

80. SmartPLS GmbH. (2023). SmartPLS (Version 4.1.1.4) [Software]. SmartPLS GmbH. Available from: https://www.smartpls.com. Accessed on 29 Nov 2025.

81. Federación Nacional de Cafeteros de Colombia. FNC management report 2024. Available from: https://www.federaciondecafeteros.org/app/uploads/2025/06/Informe-de-Gestion-FNC-2024.pdf. Accessed on 17 June 2025.

82. Federación Nacional de Cafeteros de Colombia. (n.d.). Sustainability strategy: Economic, environmental, social, and governance pillars. Available from: https://antioquia.federaciondecafeteros.org/sostenibilidad/. Accessed on 17 June 2025.

83. Hair JF, Black WC, Babin BJ, Anderson RE. Multivariate data analysis. 8th ed. Independence (KY, US): Cengage Learning; 2019.

84. Kline RB. Principles and Practice of Structural Equation Modeling. 5th ed. New York (NY, US): Guilford Publications; 2023. Available from: https://www.guilford.com/books/Principles-and-Practice-of-Structural-Equation-Modeling/Rex-Kline/9781462551910. Accessed on 3 Nov 2025.

85. Hair JF Jr, Hult GTM, Ringle CM, Sarstedt M. Partial least squares structural equation modeling (PLS-SEM). 4th ed. Cham (Switzerland): Springer Nature; 2024. doi: 10.1007/978-3-031-49920-7.

86. Barclay DW, Higgins CA, Thompson R. The partial least squares (PLS) approach to causal modeling: Personal computer adoption and use as an illustration. Technol Stud. 1995;2(2):285-309.

87. Kock N, Hadaya P. Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. Inf Syst J. 2018;28(1):227-61. doi: 10.1111/isj.12143.

88. Hallinger P, Suriyankietkaew S. Science mapping of the knowledge base on sustainable leadership, 1990–2018. Sustainability. 2018;10(12):4846. doi: 10.3390/su10124846.

89. Yu Y, Choi Y. Stakeholder pressure and CSR adoption: the mediating role of organizational culture for Chinese companies. Soc Sci J. 2016;53(2):226-35. doi: 10.1016/j.soscij.2014.07.006.

90. IBM Corp. IBM SPSS Statistics for Windows (Version 29.0). Available from: https://www.ibm.com/products/spss-statistics. Accessed on 29 Nov 2025.

91. Hair JF, Howard MC, Nitzl C. Assessing measurement model quality in PLS SEM using confirmatory composite analysis. J Bus Res. 2020;109:101-10. doi: 10.1016/j.jbusres.2019.11.069.

92. Diamantopoulos A, Siguaw JA. Formative versus reflective indicators in organizational measure development: A comparison and empirical illustration. Br J Manag. 2006;17(4):263-82. doi: 10.1111/j.1467-8551.2006.00500.x.

93. Henseler J, Ringle CM, Sarstedt M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. J Acad Mark Sci. 2015;43(1):115-35. doi: 10.1007/s11747-014-0403-8.

94. Fornell C, Larcker DF. Evaluating structural equation models with unobservable variables and measurement error. J Mark Res. 1981;18(1):39-50.

95. Berrone P, Cruz C, Gómez-Mejía LR. Socioemotional wealth in family firms: theoretical dimensions, assessment approaches, and agenda for future research. Fam Bus Rev. 2012;25(3):258-79. doi: 10.1177/089448651143535.

96. Gómez-Mejía LR, Herrero I. Back to square one: the measurement of socioemotional wealth (sew). J Fam Bus Strateg. 2022;13(4):100480. doi: 10.1016/j.jfbs.2021.100480.

97. Werner-Lewandowska K, Wiecek-Janka E, Pawłowski G. Determinants of sustainability maturity in family businesses. Sustainability. 2025;17(5):1818. doi: 10.3390/su17051818.

98. Hernández-Perlines F, Blanco-González A, Miotto G. Innovation in family businesses: Exploring the influence of entrepreneurial orientation and absorptive capacity on innovative capacity. J Innov Knowl. 2024;9:100600. doi: 10.1016/j.jik.2024.100600.

99. Banga CM, Gobind J. Implementation of sustainability in human resource management: A literature review. SA J Hum Resour Manag. 2025;23:a2741. doi: 10.4102/sajhrm.v23i0.2741.

100. Chen W, Zhou AJ, Zhou SS, Hofman P, Yang X. Deconstructing socioemotional wealth: social wealth and emotional wealth as core properties of family firms. Manag Organ Rev. 2022;18(2):223-50. doi: 10.1017/mor.2022.1.

101. Hernández-Linares R, Kellermanns FW, López-Fernández MC. The effect of socioemotional wealth on the relationship between entrepreneurial orientation and family business performance. Bus Res Q. 2020;23(3):174-92. doi: 10.1177/2340944420941438.

102. Cosenza ACS, da Motta Reis JS, Souza CG, Barbastefano RG, Santos G, Barbosa LCFM. Sustainable human resource management, green human resource management, and environmental human resource management: analysis of new and emerging terms related to the human resource area. Qual Innov Prosper. 2024;28(1):127-46. doi: 10.12776/qip.v28i1.1904.

103. Dyck A, Lins KV, Roth L, Wagner HF. Do institutional investors drive corporate social responsibility? J Financ Econ. 2019;131:693-714. doi: 10.1016/j.jfineco.2018.08.013.

104. Ketprapakorn N, Kantabutra S. Toward an organizational theory of sustainability culture. Sustain Prod Consum. 2022;30:227-39. doi: 10.1016/j.spc.2022.05.020.

105. Rubio-Andrés M, del Mar Ramos-González MÁ, Sastre-Castillo MÁ, Gutiérrez-Broncano S. Stakeholder pressure and innovation capacity of SMEs in the COVID-19 pandemic: Mediating and multigroup analysis. Technol Forecast Soc Change. 2023;190:122432. doi: 10.1016/j.techfore.2023.122432.