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Linking Quality-Oriented HR Practices to Ambidextrous Capability: Evidence from Green Agro-Food Companies

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Abstract

This study investigates how quality-oriented human resource practices (QHRP) influence organizational ambidexterity. It also examines whether ambidextrous culture functions as a mediating mechanism linking QHRP to organizational ambidexterity. Data were obtained from 350 green agro-food firms, each represented by two respondents. Structural equation modeling techniques were employed to analyze the relationships among the variables. The study responds to the growing need for organizations to achieve ambidexterity while implementing QHRP. Results indicate that QHRP significantly enhances organizational ambidexterity. Furthermore, an ambidextrous culture serves as a mediating factor in the relationship between QHRP and organizational ambidexterity. This study establishes a link between quality-oriented human resource practices (QHRPs) and organizational ambidexterity through the lens of dynamic capabilities theory. It extends empirical research on the antecedents of ambidexterity by demonstrating that QHRPs shape organizational values and shared assumptions, thereby enabling ambidextrous capabilities by fostering an ambidextrous culture. Findings highlight important managerial considerations for implementing QHRP to strengthen organizational ambidexterity, ultimately improving both operational efficiency and innovation capacity.

Keywords: Human resource management, Quality management, Organizational ambidexterity, Organizational culture, Exploitation, Exploration

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Introduction

Organizational ambidexterity has received considerable attention in top-tier management journals [1]. Its growing importance has led scholars to describe it as an emerging paradigm in organizational theory [2-4], as well as a rapidly expanding and influential research area [5-7].

Ambidexterity is the ability to use both hands equally well. In organizational research, it refers to a firm's capacity to efficiently manage present operations while simultaneously adapting to future environmental changes. This dual capability has been widely recognized as essential for organizational success and long-term sustainability [5, 8-12]. In addition, ambidexterity helps organizations manage complexity and paradoxical demands [13], allowing them to respond effectively to technological advancement, globalization, heightened competition, and innovation pressures [14, 15].

Prior research consistently emphasizes that organizational ambidexterity is a key driver of sustainable competitive advantage. Empirical studies show that it not only improves immediate performance outcomes but also strengthens firms' long-term

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survival in highly dynamic environments [16]. Further evidence suggests that ambidextrous firms are better able to adapt to disruptive business models and emerging technologies than their counterparts [16-18].

Achieving ambidexterity largely depends on employees' involvement in innovation-related processes. Consequently, HRM practices that simultaneously support exploration and exploitation are essential. However, there is still limited consensus regarding which specific HRM practices effectively foster organizational ambidexterity [19-21].

This research contributes to the literature on organizational ambidexterity in several ways. First, it extends existing studies by applying quality management theory [22, 23] to identify HRM practices rooted in quality management, referred to here as quality human resource management practices (QHRP). Over the past decades, quality management has been widely recognized as a significant competitive factor that enhances organizational performance [24]. As argued by [22], implementing quality management systems requires integrating specific HR practices. Indeed, human resource management has become a central pillar of quality management initiatives, as organizational quality outcomes depend heavily on effective people management [25].

The literature identifies two main perspectives for examining HRM support for ambidexterity. The first is the "best practices" approach, which focuses on individual HR practices. The second is the systems approach, which views HRM as a coherent bundle of practices aligned with shared objectives [26]. This study adopts the first perspective, focusing on individual quality-related HR practices, as single HR practices can be deliberately configured to enable ambidextrous behavior [27, 28].

Second, this study introduces a refined perspective on the relationship between QHRP and ambidextrous organizations by positioning organizational culture as a key explanatory mechanism [29-31]. Organizational effectiveness is not only dependent on high-performing individuals but also on a distinctive cultural system that nurtures continuous learning and innovation [32, 33]. Prior research has already recognized organizational culture as an intervening construct linking quality management practices with organizational ambidexterity. For instance, [31] provided empirical evidence that cultural divergence operates as a mediator between process management practices and ambidexterity outcomes.

Third, the study further contributes to the growing body of research integrating dynamic capabilities theory with quality management and contextual ambidexterity [5, 24, 34-36].

The dynamic capabilities framework builds upon the resource-based view (RBV), which argues that firm-specific resources underpin competitive advantage [37]. However, in rapidly changing and uncertain environments, firms require dynamic capabilities to continuously adapt and reconfigure their resource base. The implementation of quality management systems depends heavily on training and development initiatives that equip employees and managers with both competence and motivation to achieve quality objectives, while simultaneously enhancing their future-oriented skills, enabling greater delegation and participation [38]. As stated by [38] "Capabilities must be actively mobilized to utilize all the knowledge available in the plant, and to bring out employee initiative and ideas to encourage employees to 'use their hearts and brains as well as their hands."

Unlike the structural approach to ambidexterity [39], contextual ambidexterity suggests that tensions between exploration and exploitation can be managed more effectively through behavioral integration. It emphasizes the creation of a work environment in which individuals are empowered to independently decide how to allocate their attention and effort between exploratory and exploitative tasks [8, 40, 41].

This research focuses on the antecedents of ambidexterity by emphasizing the human-centered dimension of quality management and selected cultural elements. It explores whether QHRP can act as a foundation for developing ambidextrous organizational contexts and examines the extent to which ambidextrous culture mediates this relationship.

The paper is structured as follows: first, it reviews existing literature on HR practices within quality management systems, organizational cultural values, and ambidexterity. Second, it presents the empirical study's methodological framework. Third, it reports and discusses the findings. Finally, it concludes with implications for both theory and practice.

Literature review

Human resource-related quality management (QHRP) and organizational ambidexterity

Over the past few decades, organizational ambidexterity has become a prominent topic in management research. Foundational contributions by [2, 5, 12, 42] have shaped its theoretical development. Ambidexterity refers to an organization's capability to simultaneously pursue exploration of new opportunities and exploitation of existing competencies [43].

To understand how QHRP may contribute to the formation of ambidextrous contexts, [44] provide a useful perspective: "the emergent quality management paradigm is an alternative perspective providing the guidance, examples, and practical solutions necessary to solve these dilemmas by recognizing the dichotomies as mutually dependent".

Existing studies suggest that quality management can effectively address organizational paradoxes [45] Some researchers have also proposed that it enables the coexistence of mechanistic and organic organizational forms [46], while others highlight its role in balancing control-oriented and learning-oriented logics [47].

A key mechanism for managing such tensions is the use of human resource practices that simultaneously support control and learning [14]. HR practices are particularly valuable because they are deeply embedded in firm-specific contexts and therefore difficult for competitors to replicate [48]. Moreover, HR practices that enhance problem-solving capacity, intellectual engagement, and employee participation in decision-making have been linked to higher levels of innovation [25].

Within quality management research, substantial evidence highlights the importance of HR practices. Quality management systems typically decentralize authority and empower employees at different hierarchical levels, thereby increasing responsibility and improving job enrichment [22, 23, 49].

[50] empirically investigated how organizational centralization interacts with exploitation and exploration. Their results indicate that greater centralization constrains exploratory innovation and does not meaningfully enhance exploitative innovation. Since quality management systems are generally associated with decentralized decision-making structures [22], it is reasonable to expect that such systems may facilitate both exploratory and exploitative behaviors simultaneously.

Within quality management implementation, decentralization is typically reinforced through ongoing training initiatives and developmental programs that aim to increase employee involvement [38, 51, 52] Effective implementation requires that employees are not only trained in quality tools and concepts but also develop a solid understanding of methodologies and techniques, alongside cooperative and participatory attitudes [53, 54] Accordingly, training serves a dual purpose: it equips individuals with technical competencies while also fostering internal acceptance and alignment with quality management principles [55]. In this sense, training operates as both a skill-building mechanism and a cultural reinforcement process [56]. Human resource practices further enable employees to access, interpret, and apply accumulated knowledge and experience to stimulate innovation [57]. In doing so, they strengthen dynamic capabilities, particularly those related to both exploration and exploitation.

However, research explicitly connecting HR practices embedded in quality management systems to ambidexterity remains limited. Only a small number of theoretical works have addressed this issue. [55] initiated this discussion by identifying key conceptual issues and outlining a future research agenda. Later, [29, 58], and 30 further explored how quality management practices could be structured and operationalized to support ambidextrous outcomes.

Although earlier theoretical work [55] suggested that quality-oriented HR practices positively influence ambidexterity, and [29] proposed a model in which empowerment, training, and development within quality management enhance ambidextrous capability, empirical validation of these relationships remains scarce. HR practices enable employees to mobilize knowledge and experience in generating innovative solutions [57], thereby reinforcing dynamic capabilities associated with exploration and exploitation. Nonetheless, limited attention has been given to HR-related quality practices, specifically training, organizational support, and employee participation. Therefore, the first aim of this study is to empirically test whether QHRP directly enhances organizational ambidexterity.

In addition, this study argues that QHRP fosters a supportive organizational culture that emphasizes learning, skill development, and employee capability enhancement, thereby strengthening ambidexterity. Prior studies have identified organizational culture as a mediating mechanism between quality management practices and ambidexterity. For instance [31], demonstrated that cultural divergence mediates the relationship between process management practices and organizational ambidexterity. Given the central importance of QHRP in quality management systems and its likely influence on shared organizational values, further examination of this mediating pathway is necessary.

By promoting delegation and structured training to enhance participation, QHRP helps create an environment characterized by trust and organizational support. These practices are fundamentally grounded in trust, allowing employees greater autonomy in problem-solving without continuous managerial oversight [40, 59] identify such conditions as essential enablers of ambidexterity, alongside discipline and stretch. In contexts where trust and support are present, and employees are not constrained by fear of negative consequences, creative behavior is more likely to emerge. This suggests a positive linkage between quality management-oriented HR practices and organizational ambidexterity. Within a quality management context, trust plays a crucial role in enabling individuals to make autonomous decisions that support ambidextrous capabilities [29, 30, 31]. Overall, the literature provides theoretical support for a positive association between quality-oriented human resource practices (QHRP) and organizational ambidexterity (OA). Based on this reasoning, we adopt this perspective and propose the following hypothesis:

H1. QHRP positively affects organizational ambidexterity.

The role of corporate culture in the relationship between human resource-related quality management and organizational ambidexterity

Human resource practices are often viewed as a key enabling mechanism in quality management implementation, as they strengthen interpersonal connections and gradually reshape organizational culture [60]. Culture can be understood as a system of shared assumptions, values, and beliefs that guide behavior and are reflected in organizational artifacts [61, 62] identified several HR-related and managerial factors—such as training and education, employee involvement, communication improvements, policy and procedural revisions, and leadership behavior—as influential drivers of cultural change. In the same

vein, culture has been widely recognized as a decisive element in the successful adoption of quality management practices [63, 64].

Research further indicates that quality management is not associated with a single cultural profile but rather with multiple, sometimes conflicting cultural orientations. Based on the competing values framework [65, 66], empirical studies have shown that quality management environments often combine opposing cultural logics, particularly flexibility-oriented and control-oriented values [67-69].

From a dynamic capabilities perspective, training activities enhance employees' problem-solving capacity and contribute to the development of learning-oriented organizational environments [70]. When embedded within QHRP, training also strengthens intellectual engagement, communication, motivation, and experimentation, which, together, help establish a culture that supports both exploratory and exploitative behaviors.

[71] demonstrated that quality management simultaneously reinforces two distinct sets of values: one emphasizing control and precision, and the other emphasizing creativity, flexibility, and experimentation. Similarly [72], provided empirical evidence that quality management generates multifaceted cultural change. They highlighted that such an ambidextrous culture operates as an intermediary mechanism between quality practices and innovation outcomes.

[73], using the competing values framework, also assessed cultural ambidexterity and found that a culture simultaneously supporting exploitation and exploration contributes to innovation performance only when combined with strong quality capability, suggesting the existence of an underlying mediating pathway.

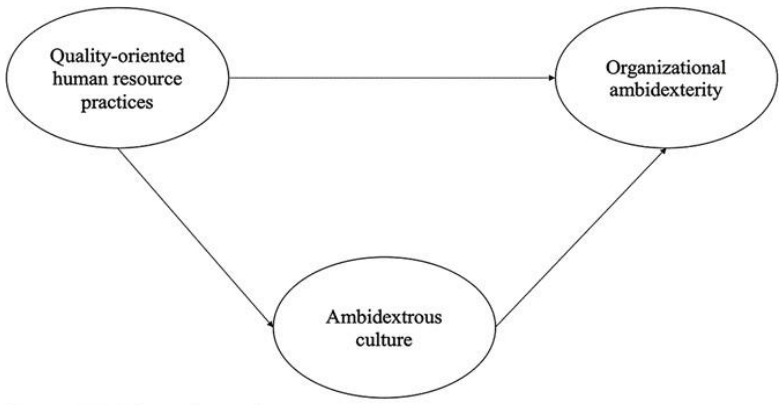
Prior empirical research by [31] in the furniture and textile industries highlighted the central role of organizational culture in mediating the link between quality-based process management and ambidexterity. Although process management has traditionally been associated with formalization and standardization, their findings revealed that it can also generate a dual cultural configuration combining stability-oriented values (such as discipline, control, and continuous improvement) with flexibility-oriented values (such as innovation, risk-taking, experimentation, and adaptability). These results imply that QHRP may shape fundamental organizational assumptions and value systems, thereby enabling the emergence of ambidextrous capabilities. The importance of cultural transformation as a mediating mechanism suggests that balancing opposing cultural logics may be essential for organizational effectiveness [69].

More recent conceptual work has further examined which cultural configurations best support ambidexterity. In this context, [74] offer significant evidence on the culture–ambidexterity relationship. They define ambidextrous organizational culture—composed of shared vision and organizational diversity—as an antecedent of contextual ambidexterity and improved new product innovation performance. Their findings suggest that ambidexterity is achieved through the active involvement of organizational members, highlighting participation and engagement as central mechanisms [74].

This study investigates the mediating role of corporate culture in the relationship between human resource practices and ambidextrous capability in the organic agro-food sector. Drawing on the theoretical and empirical arguments discussed above, the following hypothesis is formulated:

H2. An ambidextrous culture mediates the relationship between QHRP and organizational ambidexterity.

Consistent with the proposed hypotheses, the relationships among the constructs require empirical testing. The conceptual framework is presented in **Figure 1**.



Source(s): Figure by authors

Figure 1. Proposed theoretical model.

Materials and Methods

Research methodology

Sample and data collection

The selection of this sector is justified by its strong need to simultaneously develop organizational ambidexterity and implement quality management practices. Firms operating in this industry must balance exploitation activities—aimed at lowering operational costs and competing on price—with exploration activities that involve adapting to emerging markets, technological shifts, and product innovation [75]. Companies in this field are highly export-oriented and compete directly in open markets with conventional food producers.

Within the organic agro-food sector, exploitation is essential for continuous process improvement, efficiency enhancement, cost reduction, and maintaining price competitiveness. In addition, firms must comply with strict quality standards and organic certification requirements. These regulatory obligations reinforce exploitative processes, ensuring product safety, quality assurance, and trust in international trade, while simultaneously limiting risk-taking behaviors and constraining innovation potential [30]. At the same time, firms are required to engage in exploration to monitor technological developments and stimulate product innovation, which is particularly critical in this niche market. Accordingly, the Spanish organic agro-food industry was selected as the empirical context of this study.

This research forms part of a broader project funded by the Spanish Ministry of Economy, Industry, and Competitiveness and the State Research Agency. To define the population, a complete list of 3,984 organic agro-food industrial firms was obtained from the official website of the Spanish Ministry (www.mapama.gob.es) in August 2017. Each listed company was carefully screened to confirm its relevance to the sector and to validate its contact information. Following this verification, an extensive filtering process was undertaken to ensure that only firms genuinely operating within the organic agro-food industrial sector were included. The final population was reduced to 2,317 certified organic companies.

A summary of the sample characteristics is presented in **Table 1**.

Table 1. Summary of sample details.

Item	Details
Geographical scope	Spain
Industry	The agro-food sector in Spain
Study population	2,317 firms
Sample obtained with two respondents	350 firms
Response rate	15.10%
Respondents surveyed	Managing directors and managers of quality/operations
Means of data collection	Online questionnaire supported by email and telephone follow-ups
Data collection period	December 2017–January 2018

Source(s): Table by authors

A pilot study was first conducted to refine the research instrument. Initially, several academics specializing in business organization reviewed the questionnaire and provided recommendations for improvement. Subsequently, the revised questionnaire was administered to five managers from firms within the organic agro-food industrial sector. These managers offered additional feedback, which was incorporated into the final version of the survey instrument. The responses from these five firms were considered valid and included in the final dataset.

The final survey was completed by two respondents per company: the managing director and either the quality manager or operations manager. On one hand, quality and operations managers provided responses related to quality management practices, including human resource practices associated with quality. On the other hand, managing directors responded to items concerning organizational culture and ambidexterity. Quality and operations managers were selected due to their direct involvement in quality-related HR practices. Additionally, firms in this sector are typically small or medium-sized, and many have established dedicated quality departments to meet industry regulatory requirements. However, formal HR departments are less common, meaning that decisions related to human resource practices are often handled by quality managers, operations managers, or general managers.

To improve response rates, a telephone follow-up procedure was implemented. At the conclusion of the data collection, 350 companies participated in the study, each represented by 2 respondents.

Measures

The measurement scales used in this study were adapted from prior research.

Quality-oriented management (QHRP)

The QHRP construct was developed based on established human resource measurement literature [76, 77] and quality management research [25]. A four-item scale using a seven-point Likert format was designed. Quality managers evaluated the extent of QHRP implementation (e.g., "Quality management training is continuous and includes all managerial and non-managerial staff"). The scale's reliability was satisfactory, with a Cronbach's alpha of 0.886.

Ambidextrous culture (AC)

The ambidextrous culture scale was developed for this study based on prior theoretical and empirical contributions [31, 67-69, 71]. A six-item seven-point Likert scale was administered to general managers. The instrument captured two dimensions of ambidextrous culture: exploration-oriented values (RVALUES) and exploitation-oriented values (TVALUES). Each dimension was measured using three items to reflect a balanced cultural configuration combining exploration and exploitation orientations. Both dimensions loaded onto a single factor structure. The scale demonstrated good internal consistency, with a Cronbach's alpha of 0.855.

Organizational ambidexterity (OA)

Organizational ambidexterity was measured using an eight-item seven-point Likert scale adapted from [50, 78], and [43]. General managers assessed both dimensions of ambidexterity: exploration capability (EXPLOR) and exploitation capability (EXPLOT). The reliability of this measurement scale was high, with a Cronbach's alpha of 0.936.

Common method bias

To mitigate concerns related to common method variance, several post hoc diagnostic procedures were implemented. A full collinearity assessment was conducted, allowing simultaneous evaluation of both vertical and lateral collinearity issues [79]. Variance inflation factors (VIFs) were computed for all latent constructs. Because the proposed model is reflective, only inner model VIF values were considered relevant for assessment purposes [80] VIF values below the 3.3 threshold indicate that common method bias is unlikely to distort the results. The analysis confirmed that collinearity was not a concern in the dataset **(Table 2)**.

Table 2. Factor correlations, means, and standard deviation.

	Mean	SD	Firm age	Firm size	QHRP	AC
Firm age	35.900	90.776				
Firm size	28.130	33.872	0.154**			
QHRP	5.670	1.150	0.005	0.029		
AC	5.686	1.024	0.05	−0.024	0.191*	
OA	5.947	1.043	0.251	−0.054	0.240**	0.760**

Note(s): *P < 0.05; **P < 0.01

Source(s): Table by authors

Procedure

Hypothesis testing was carried out using SmartPLS 4.0 with a bootstrapping procedure based on 10,000 resamples. This technique is widely accepted in human resource management research [81]. The PLS-SEM approach is used to maximize the explained variance of the dependent constructs. Firm size and firm age were incorporated as control variables. Firm size was included because larger firms generally possess more resources and more structured HRM systems. Firm age was also controlled for, given the sector's emerging nature, where accumulated experience may lead to differences in HRM practices and potentially influence model relationships.

Results and Discussion

Findings

Table 3 presents descriptive statistics, including means, standard deviations, and correlation coefficients. The results reveal statistically significant positive associations among quality-oriented human resource practices, ambidextrous culture, and organizational ambidexterity. Firm size and firm age also display significant positive correlations.

Table 3. Fit values of the factorial model of QHRP, ambidextrous culture, and organizational ambidexterity measurement scales

Model	S-B χ^2	d.f.	P-value	BBNFI	CFI	RMSEA	NC (= χ^2/d.f.)
QHRP	23.166	6	0.012	0.973	0.944	0.064	3.861
Ambidextrous culture	21.672	6	< 0.001	0.894	0.908	0.078	3.612
Organizational ambidexterity	27.357	17	0.053	0.948	0.965	0.042	1.374

Note(s): All the loadings were significant at P < 0.001

Source(s): Table by authors

The measurement model was evaluated first. Model fit was assessed using the SRMR index, where values below 0.10 indicate acceptable fit [82]. The obtained SRMR value of 0.062 indicates a strong model fit. Convergent and discriminant validity were then examined following established guidelines [83].

Convergent validity was assessed through factor loadings, Average Variance Extracted (AVE), and Composite Reliability (CR). The results show that AVE values exceeded 0.5 and CR values were above 0.7, confirming adequate convergent validity **(Table 4)**.

Discriminant validity was evaluated using the HTMT ratio. Values above 0.85 indicate potential problems of construct distinctiveness [84]. As reported in **Table 4**, all HTMT values remained below this cut-off, confirming that the constructs are empirically distinct. Predictive relevance was examined using the Q^2 predict criterion, which produced values above zero, indicating acceptable predictive accuracy. In addition, lateral collinearity was checked using VIF values, all of which were below 3.3 [85], further confirming discriminant validity.

Table 4. Average variance extracted (AVE) and composite reliability (CR)

	AVE	CR
QHRP	0.6648	0.888
AC	0.6181	0.905
OA	0.7317	0.956

Note(s): AC = ambidextrous culture, and OA = organizational ambidexterity.
Source(s): Table by authors

The structural model was then analyzed. Hypothesis 1 proposed a positive direct effect of QHRP on organizational ambidexterity. The results support this relationship, as the confidence interval excluded zero ($\beta = 0.238$, $t = 3.680$, LL = 0.120, UL = 0.371, $P < 0.001$), confirming a significant positive association between QHRP and OA.

Hypothesis 2 proposed that an ambidextrous culture mediates the relationship between QHRP and OA. Mediation was tested using confidence interval-based inference, which is considered more robust than alternative methods such as pseudo t-statistics [86, 87]. The findings show that zero was not included in the interval ($\beta = 0.156$, $t = 3.772$, LL = 0.080, UL = 0.241, $P < 0.001$), confirming a significant mediation effect through ambidextrous culture **(Table 5)**. Control variables did not show statistically significant effects on the dependent variable.

Table 5. Test results of partial mediation effect: the mediating role of ambidextrous culture (AC) on the relationship between QHRPs (quality-oriented human resource practices) and organizational ambidexterity (OA)

	Coefficient	S.E.	*T*-value	Percentile	
				Lower	Upper
			Total effect		
QHRP → OA	0.289***	0.061	24.253		
			Direct effect		
QHRP → OA	0.248***	0.022	59.211		
QHRP → AC	0.322***	0.023	67.018		
AC → OA	0.349**	0.011	84.174		
AGE → OA	0.011 n.s	0.033	0.08		
SIZE → OA	0.017 n.s	0.041	0.07		
			Indirect effect		
QHRP → AC → OA	0.212*	0.012	23.362	0.071	0.197

Note(s): ***P ≤ 0.001, **P ≤ 0.01, *P ≤ 0.05
Source(s): Table by authors

The primary aim of this study is to investigate the interconnections among QHRP, ambidextrous culture, and organizational ambidexterity, with the purpose of better understanding how ambidextrous capabilities emerge from a human resource perspective.

The empirical context of this research is the organic agro-food industry, which is currently experiencing significant structural pressures. Demand for organic products continues to increase steadily, while price-based competition has intensified, making efficiency improvements and process optimization increasingly important. At the same time, strict food safety standards and organic certification requirements impose strong demands for control, standardization, and operational discipline. However, expanding into new markets also requires firms to develop innovative offerings, take on greater risk, and remain open to experimentation. Firms capable of developing ambidextrous capabilities are therefore better positioned for long-term sustainability, as they can simultaneously enhance operational efficiency and security while also engaging in innovation, technological upgrading, and product development for emerging markets [75]. Given the need to balance exploitation and

exploration pressures, the organic agro-food sector represents a particularly suitable setting for examining the interplay between ambidexterity and quality management.

The findings demonstrate that QHRP plays an important role in fostering organizational ambidexterity within firms operating in this sector. This result is consistent with earlier studies suggesting that human resource-oriented quality management practices—such as training—facilitate experimentation and knowledge integration across the organization [88]. In a similar vein, 55] identified a positive relationship between quality management, HR practices, and ambidexterity, a view later supported conceptually by [29], who proposed that training and development within quality management frameworks can enhance ambidextrous outcomes.

This study addresses calls to further clarify the HRM–ambidexterity relationship [21] and responds to the limited attention given to HRM's influence on quality management from a dynamic capabilities perspective [89]. The results highlight the importance of HR mechanisms that enhance employees' ambidextrous capabilities, thereby contributing meaningfully to both HRM and quality management literature. First, existing HRM research has largely neglected the quality management viewpoint. Second, recent studies on HR-related quality management practices have insufficiently considered the active involvement of employees and managers in quality initiatives [25].

In addition, the results provide evidence that the relationship between QHRP and organizational ambidexterity is transmitted through cultural transformation. This underscores the importance of organizational culture as a key explanatory mechanism. Quality management initiatives can drive profound cultural shifts through HR practices. As highlighted in the literature [22, 69, 76, 90], quality-oriented HR practices are a central component of quality management systems, and from their initial implementation onwards, they encourage empowerment, participation, and continuous learning [49].

From a theoretical standpoint, the resource-based view, extended through dynamic capabilities logic, supports the argument that implementing quality management systems helps establish an organizational culture grounded in ambidextrous values. Such a culture enables firms to reinforce exploitation-oriented behaviors while simultaneously encouraging exploration, thereby strengthening ambidexterity as an organizational capability. The findings add to the growing empirical literature on the antecedents of organizational ambidexterity and suggest that QHRP shapes core organizational values and beliefs, facilitating ambidextrous capability development through an ambidextrous culture. This culture integrates exploitation-oriented values (such as improvement, safety, control, precision, and discipline) with exploration-oriented values (such as flexibility, creativity, tolerance for uncertainty, risk-taking, and experiential learning). The coexistence of these contrasting value systems creates a productive tension that supports the development of ambidexterity.

Conclusion

Overall, the results confirm the hypothesized positive relationship between QHRP and organizational ambidexterity, suggesting that QHRP can serve as a mechanism for managing the inherent tensions and contradictions of ambidexterity. When combined with the mediation findings, the results indicate that QHRP influences ambidexterity primarily through its impact on cultural transformation.

This study also demonstrates how ambidexterity can be achieved in highly regulated and formalized industries where quality assurance, safety, and control are critical. In doing so, it extends prior research by responding to calls for studies across diverse organizational and industrial settings [8].

Furthermore, future research is particularly encouraged in sectors characterized by simultaneous pressures for innovation and strict regulatory control. Comparative studies across such contexts would further strengthen the understanding of how ambidexterity develops under competing demands.

From a managerial perspective, the findings suggest that top management should recognize the cultural consequences of implementing quality management systems. Leaders aiming to cultivate contextual ambidexterity need to strengthen internal communication, build trust, ensure transparency in policies, and maintain close engagement with employees. Managers play a central role in fostering both creativity and discipline, balancing standardization requirements with openness to new problem-solving approaches. To support ambidexterity, employees should be encouraged to engage with uncertainty rather than avoid challenges or conflict, and to adopt a constructive attitude toward experimentation and calculated risk-taking. Finally, maintaining a supportive response to failure is essential to embedding a culture of change and innovation within the organization.

The importance of strong coordination between quality management units and human resource departments should also be emphasized. Although quality functions are traditionally associated with operational areas, their effectiveness increasingly depends on close integration with HR departments to create synergies. Regarding HR practices connected to quality management implementation, the findings suggest that promoting employee participation across organizational levels, together with sustained training and development, not only enhances quality management outcomes but also contributes to the development of organizational ambidexterity.

This study is subject to several limitations, which also open avenues for future research. These are outlined below.

Firstly, ambidextrous organizational culture and organizational ambidexterity were treated as holistic constructs despite being composed of two underlying dimensions. This approach was chosen to conceptualize ambidextrous culture as a unified construct and ambidexterity as a balance between exploitation and exploration. Future studies could develop alternative models that focus on a single dimension of values (exploitation or exploration) and/or a single dimension of innovation (exploitation or exploration). For instance, future research may examine the effect of QHRP specifically on exploitation-oriented outcomes or on exploration-oriented outcomes. In addition, future studies could incorporate other organizational variables as potential mediators in this relationship, such as formalization.

Secondly, the analysis in this study is limited to the organizational level. Future research could adopt a multilevel perspective [28] to examine how QHRP influences not only organizational ambidexterity but also individual-level ambidextrous behavior.

Thirdly, this study employs a quantitative research design. It could be enriched through qualitative approaches, such as case studies of selected firms included in the sample, which would allow for deeper interpretation and broader contextual understanding of the findings. In addition, although data were collected from two respondents per organization (the general manager and the technical or quality manager), which strengthens the study design, future case-based research could also include non-managerial employees to capture additional perspectives and provide a more comprehensive understanding.

Fourthly, the empirical context is limited to the Spanish organic agro-food sector. Future research could extend the analysis to other innovation-intensive industries with strong quality management systems, such as healthcare or transportation, as well as to other national contexts. This would enhance the generalizability and robustness of the findings.

Finally, the cross-sectional design of this study limits the ability to draw definitive causal inferences among the examined variables. Therefore, longitudinal research designs are recommended in future studies to better capture the evolution of these relationships over time and to deepen understanding of their dynamic nature.

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Conflict of interest: None

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