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The effect of ability, motivation and opportunity (AMO) on SMEs' innovation performance

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While there is extensive research on SMEs' innovation, limited attention has been given to the specific implications of HRM practices in fostering innovation in this sector. This represents a critical gap, considering the unique challenges faced by SMEs in managing their human resources. Accordingly, in this study, we developed and validated a conceptual model that evaluates the ability of SMEs to enhance their innovation and innovation performance through the adoption of HRM practices that relate to employees' abilities, motivations and opportunities (AMO). Data was collected through a survey of manufacturing SMEs in France. Overall, the findings contribute to the literature by shedding light on the mediating role of innovation between HR-enhancing practices and innovation performance in SMEs. In addition, the analysis highlights the importance of HRM practices in shaping workforce capabilities and influencing organizational performance. Moreover, it emphasizes the importance of structured HRM practices in attracting and retaining high-quality human resources, akin to larger companies. These findings have practical implications for SME owners, managers and policymakers seeking to foster innovation and enhance organizational performance in the SME context.

KEYWORDS
ability, motivation and opportunity (AMO); human resource management (HRM); innovation performance; small and medium enterprises (SMEs)

1 | INTRODUCTION

Small and medium enterprises (SMEs) are predominant in the global business landscape and play a significant role in employment in both developed and emerging economies (Nasr & Al-Tabbaa, 2023). These organizations are recognized for their dynamic and adaptable nature, allowing them to respond quickly to market changes and operate in highly competitive environments (Expósito & Sanchis-Llopis, 2019; Lin et al., 2020). In addition, SMEs are known for their innovation-driven approach, constantly seeking opportunities to introduce new products, services and organizational strategies to gain a competitive edge (Ayoko, 2021; Gay & Szostak, 2019). This emphasis on flexibility and innovation enables SMEs to navigate the challenges and uncertainties of the business landscape effectively. Therefore, extensive scholarly attention has been paid to address the innovation construct in this sector (Del Vecchio et al., 2018). As such, numerous studies have investigated various aspects related to innovation in SMEs, including the drivers and barriers to innovation adoption (Do & Shipton, 2019), the role of knowledge management in fostering innovation (Amankwah-Amoah et al., 2023) and the impact of innovation on SME performance (Rosenbusch et al., 2011). However, despite the extensive research on innovation in SMEs, there has been limited focus on the connection between human resource management (HRM) practices and innovation (Li et al., 2019; Shahzad et al., 2022). That is, while there is recognition of the importance of HRM practices in fostering innovation and organizational performance in large firms

(Hayton, 2005; Lei et al., 2021), the specific implications for SMEs remain understudied (Haar et al., 2022, Shahzad et al., 2022).

This literature gap is particularly significant when considering the distinctive difficulties that confront SMEs in effectively managing their human resources (De-Oliveira & Rodil-Marzábal, 2019). Given that SMEs often lack dedicated HR departments, owners/managers frequently assume HRM responsibilities alongside their myriad other managerial roles (Loufrani-Fedida & Aldebert, 2021). For instance, a small manufacturing firm's owner may also serve as the HR manager, CFO and production head. Consequently, this situation can hinder SMEs' innovation capabilities, as they may struggle to establish well-structured management programmes that provide comprehensive training and motivation initiatives (Adla et al., 2020). These challenges can result in less effective recruitment, development and retention of talented individuals (Adla et al., 2020; Cardon & Stevens, 2004), ultimately leading to inadequate innovation infrastructure (Lee & Wong, 2015; Singh et al., 2021).

Recognizing these challenges, the adoption of the "Ability, Motivation, and Opportunity" (AMO) framework, which comprises a systematic set of HRM practices aimed at enhancing workforce characteristics, has emerged as an important option to support employee attitudes, encourage innovation and foster productive behaviours (Appelbaum et al., 2000; Chowhan, 2016; Rauch & Hatack, 2016; Subramony, 2009; Tian et al., 2016). Researchers argue that motivation, empowerment, previous experiences and skills, resources, and various managerial practices contribute to enhancing innovation (Anderson et al., 2014), which is expressed through the ability of companies to create sustainable competitive advantages and improve organizational performance (Expósito & Sanchis-Llopis, 2019). Yet, there is limited understanding and evidence of their impact (i.e., the AMO framework as a systematic set of HRM practices) on SMEs' innovation and innovation performance (de Kok et al., 2006; Harney & Alkhalaf, 2021; Zhang & Edgar, 2022). SME owners and managers often rely on ineffective informal practices, such as personal relationships and experiences, for personnel management (Kotey & Slade, 2005). This, in turn, highlights the need for research that theorizes and validates the relevance of adopting structured HRM practices, specifically the AMO framework, in driving innovation and overall performance in SMEs (Bhatti et al., 2021; Chowhan, 2016; Curado, 2018; Forth & Bryson, 2019; Rauch & Hatack, 2016). In fact, previous empirical research findings confirm that the AMO framework can be considered as a tool by companies to elicit desired behaviours (Lee et al., 2019). This framework provides opportunities to enhance the ability of workers and motivate them to carry out the tasks entrusted to them and achieve the desired results in the context of SME (Harney & Alkhalaf, 2021; Zhang & Edgar, 2022). Accordingly, this research aims to evaluate the ability of SMEs to enhance innovation and innovation performance through the adoption of HRM systems that enhance workforce characteristics, setting our research question is: *How does AMO (as a systematic set of HRM practices) affect SMEs' innovation performance?*

To answer this question, we developed and validated a conceptual model that connects the HRM systematic practices (as captured with the AMO framework) with innovation and innovation performance in SMEs. We built our theorization on the resource-based theory (RBT; Barney, 2001), which emphasizes the impact of management decisions on a company's valuable resources, including attracting talent, developing skills and enhancing abilities (Boxall, 1996).

To investigate the research question on how AMO practices affect SMEs' innovation and innovation performance, a survey was conducted among a sample of officially registered manufacturing SMEs in France. This sector was chosen due to the manufacturing SMEs' strong focus on innovation and their limited human resources, which make them particularly responsive to changes in HRM practices. By examining this specific sector, we can gain valuable insights into the relationship between the adoption of the AMO framework and innovation in SMEs operating in an innovation-driven environment with resource constraints.

Overall, our analysis offers significant theoretical contributions to the field in two different ways. *Firstly*, we have developed and validated a conceptual model that sheds light on the mediating role of innovation between human resource-enhancing practices and innovation performance in SMEs. This model extends beyond existing studies on the positive effects of the AMO model and emphasizes the critical importance of HR-enhancing practices in driving innovation and overall organizational performance. Our study adds substantial insights to the existing literature on the antecedents and mechanisms of innovation in SMEs (Mennens et al., 2018). By examining the role of HRM practices in promoting innovation and performance within SMEs, we contribute to the understanding of how organizations can effectively manage their human resources to foster innovation. Furthermore, our findings provide valuable insights into the specific HRM practices that enhance workforce characteristics and positively influence the performance of product and process innovation in SMEs (Caloghirou et al., 2018; Harney & Alkhalaf, 2021). These contributions have practical implications for SME owners, managers and policymakers who aim to enhance innovation within their organizations. *Secondly*, our analysis highlights the significant influence of HRM practices in shaping professional and cognitive capabilities, providing appropriate incentives, and ultimately impacting organizational performance. These findings align with the principles of the RBT and suggest that SMEs can leverage specific HRM practices to attract and retain high-quality human resources, comparable to larger companies. By emphasizing the role of HRM practices in enhancing workforce capabilities, our study provides further support for the importance of strategic HRM in driving organizational performance and innovation in the SME context.

2 | THEORETICAL BACKGROUND AND HYPOTHESES

HRM design and implementation vary across companies, leading to differing views on the topic (Ulrich, 2016). Some researchers view HRM as a philosophy or set of policies and practices that influence employees (Riaz et al., 2020). Existing research presents three perspectives on how HRM impacts organizational performance: best practices, contingency and bundles approaches (Delery &

Roumpi, 2017; Katou & Budhwar, 2010; Messersmith & Guthrie, 2010). The best practices approach is commonly employed by SMEs due to its cost-effectiveness and flexibility (Harney & Alkhalaf, 2021; Huselid, 1995). SMEs prioritize short- and medium-term goals, focusing on a limited number of HRM practices such as rewards, training, and wages to achieve satisfactory performance (Boxall & Macky, 2009; d'Amboise & Muldowney, 1988).

SMEs differ from large firms in their implementation of HRM practices, whether formal or informal (Forth et al., 2006; Katou & Budhwar, 2010). These practices can take the form of AMO practices (Harney & Alkhalaf, 2021; Zhang & Edgar, 2022). Rauch and Hatack (2016) argue that the relationship between AMO practices and performance in SMEs may vary due to specific company characteristics. Managers in SMEs may consider cost–benefit and value-based factors when selecting HRM practices, recognizing their potential to create competitive advantages and positively impact company performance (Schmelter et al., 2010).

Innovation plays a crucial role in organizational success, with various definitions highlighting its significance. Schumpeter (1934) defined it as the application of inventions in commercial and industrial contexts, while Amabile (1996) emphasized the successful implementation of creative ideas within organizations. Boer and During (2001) referred to innovation as the creation of new elements or the recombination of existing techniques and methods. Recent classifications by Prajogo and Ahmed (2006) and OECD (2018) categorize innovation into two main areas: the introduction of new products or services and the implementation of new processes to improve or change production methods.

Individuals contribute to the innovative capacity of organizations in different ways. Founders' and employees' innate efforts can lead to superior innovative performance, whereas training and knowledge accumulation can enhance innovative abilities (Laursen & Foss, 2014). Innovation can also emerge through cooperation, interaction and participation among employees (Lepak & Snell, 2002). Individual performance, defined as the quantity and quality of efforts contributing to organizational efficiency and effectiveness, is closely tied to intentional creation, introduction and application of new ideas (Janssen, 2000). Measures of innovation performance include the number of patentable or patented innovations, R&D inputs, speed, novelty and product launch precedence (Hagedoorn & Cloodt, 2003; Prajogo & Ahmed, 2006). Alegre et al., (2006) highlight effectiveness and efficiency as key dimensions of innovation performance, with product innovation representing the successful exploitation of new ideas.

Next, we discuss the study conceptual model and the developed hypotheses.

2.1 | AMO and innovation performance

Based on the RBT, which highlights the significance of human resources in driving competitive advantage and organizational performance (Wright et al., 2001), research has consistently shown that implementing an effective HRM system is crucial for SMEs to manage and develop their employees' capabilities (Harney, 2021; Rauch & Hatack, 2016). Building on existing literature, Zhang and Edgar (2022, p.5) define a HRM system as the integration of three dimensions of HR practices: ability-enhancing, motivation-enhancing and opportunity-enhancing HR practices. In general, the AMO model posits that discretionary employee efforts can be elevated through three components: ability (A), motivation (M) and opportunity (O) (Appelbaum et al., 2001).

Ability can be 'defined as the talent, skills, or proficiency in an area that can be shared or coordinated within the organizational network' (Weerakoon et al., 2020, p.4). It encompasses two types of skills: the ability to perform routine actions and the intellectual ability, which relates to generating innovative ideas (Zhang & Edgar, 2022). Additionally, Schmitt (2014) highlights ability as crucial for accurate and efficient task performance, predicting job performance, and indicating training success in organizations. Companies commonly engage in activities such as selection and recruitment to secure a qualified workforce (Edgar et al., 2021). These activities aim to assess candidates' physical and mental abilities, competencies, and qualifications necessary for the job (Pak et al., 2019), ensuring the acquisition of skilled and knowledgeable employees (Lin et al., 2016). Numerous studies across different industries have explored the link between organizational practices that enhance employee abilities and SME performance (Seeck & Diehl, 2017; Rauch & Hatack, 2016). Enhancing employee abilities through knowledge and skill acquisition leads to improved task performance (de Silva et al., 2023). In the context of SMEs, researchers have examined the relationship between capacity-enhancing practices, particularly dynamic employee abilities, and innovation performance (Chowhan, 2016; Wu et al., 2015; Zhang & Edgar, 2022). These practices have been found to directly contribute to the development of new products or processes, resulting in increased productivity and innovation performance (Haar et al., 2022). As such, training that enhances abilities and knowledge through learning has been identified as a driver of individual project innovation performance (Ferraris et al., 2018).

In general, *motivation* can be viewed as the driving force that guides, empowers and maintains actions (Van Iddekinge et al., 2017), or as the inclination and eagerness of employees to engage in a task (Bos-Nehles et al., 2023). Therefore, it can be regarded as a determinant of human behaviour (Caniëls et al., 2017). Research has revealed that HRM can use motivation-enhancing practices as a mechanism to direct employees' behaviour towards desired organizational goals (Sels et al., 2006). More specifically, in the context of the AMO framework, Subramony (2009) identified a package of HRM practices referred to as motivation-enhancing bundles. These encompass a range of HR practices that exert a significant influence on both individual and organizational performance within companies. These include performance appraisal, material incentives to reward exceptional achievements, healthcare provisions to support employee well-being, linking pay to performance, and potentials for internal career mobility and promotions. Notably, the HR systems can implement these practices in the form of 'performance appraisals that assess individual and group performance, closely tying these assessments to incentive-based compensation systems, the utilization of internal promotion systems based on employee merit, and the application of

other incentives aimed at aligning employee interests with those of shareholders' (Huselid, 1995, pp. 637–663). Empirical evidence from Subramony's (2009) meta-analytic study highlights the existence of a positive relationship between the motivation-enhancing bundles (as motivational HRM practices) and favourable employee behaviours, particularly in the context of large companies. Similarly, the research conducted by Shin and Konrad (2017) and Tian et al. (2016) also underscores the association between these practices and positive employee behaviours in the context of SMEs. In this regard, findings from studies conducted by Shahzad et al. (2019) and Haar et al. (2022) suggest that the adoption of motivation-enhancing practices can lead to better innovative performance within firms as they would lead to heightened employee satisfaction and engagement in SMEs, and stimulate the generation of innovative ideas for new product development.

Companies strive to enhance *opportunities* by enriching work environments and empowering employees to achieve organizational goals (Rauch & Hatack, 2016; Subramony, 2009). Wang and Xu (2017) define opportunity as the 'environmental and contextual mechanisms that enable and support action expression' (p.6). Opportunity-enhancing practices enable employees to navigate career paths and provide avenues for professional development, which contribute to achieving optimal performance (Beltrán-Martín & Bou-Llusar, 2018; Tian et al., 2016). Companies that prioritize workforce care and development motivate employees to collaborate and contribute to the attainment of plans and goals (Subramony, 2009). Moreover, practices that grant workers decision-making autonomy in their assigned tasks foster confidence and empowerment (Ha, 2020), leading to better innovation performance (Bryson & White, 2019; Chowhan, 2016; Haar et al., 2022; Shahzad et al., 2019).

Recognizing the above discussion, which highlights the potential impact of these structured practices, there are a few studies that indicate that these practices can have differential effects on innovation and performance. For instance, Bhatti et al. (2021) revealed a weak impact of motivation-enhancing practices (MHR) on innovation outcomes. Therefore, there is a need to examine the extent to which these HRM practices can enhance innovation outcomes in SMEs. Accordingly, we propose

H1. Ability-enhancing practices (AHR) positively impact SMEs' innovation performance.

H2. Motivation-enhancing practices (MHR) positively impact SMEs' innovation performance.

H3. Opportunity-enhancing practices (OHR) positively impact SMEs' innovation performance.

2.2 | The mediating role of innovation

Recent research has emphasized the significance of innovation for SMEs as a critical factor in their success and survival (Ramos-González et al., 2022). At the same time, research shows that HRM practices are directly, as well as, indirectly, linked to innovation performance through the knowledge-sharing practice that facilitates the introduction of new products and production methods (Bhatti et al., 2021). This is consistent with the extant literature, where knowledge management (as an organizational capability that is strongly associated with innovation capacity) can play a mediating role between HRM practices and innovation performance (Chen & Huang, 2009). Similarly, Diaz-Fernandez et al. (2015) found that HRM practices influence firm performance through innovation, where Lu et al. (2015) concluded that innovation plays a mediating role between high-performance HRM and corporate performance.

HRM systems, as highlighted by Shipton et al. (2005), play a crucial role in motivating employees to acquire and exchange knowledge, thereby promoting innovative behaviour. Furthermore, Anderson et al. (2014) argue that a company's ability to achieve innovative performance is influenced by the work environment, including the skills, experience and motivation of workers to innovate, as well as their capacity to explore (creating new products) and exploit (producing products). In this regard, the impact of AMO behaviour on innovative performance is amplified when companies can elevate the level of their successful innovations. Conversely, certain managerial behaviours and attitudes can impede a company's ability to innovate, particularly when managers lack the ability to motivate workers in a way that enhances their contribution to innovative performance (Bos-Nehles et al., 2017).

We draw upon and extend these insights, to propose that innovation would have a mediation effect between the adoption of HR practices encompassing abilities, motivation, and opportunities (i.e., the AMO practices) and SMEs' innovation performance.

Next, we discuss more specifically the mediation effect across the three paths: ability, motivation and opportunity.

For ability-enhancing practices (AHR), Chowhan (2016) argues that companies can enhance employees' abilities through training activities, which contribute to the successful launch of innovations and new product development. This aligns with the notion that developing employees' skills and knowledge equips them with the necessary capabilities to generate innovative ideas and effectively implement them in the organization. Moreover, Duran et al. (2016) emphasize the significance of the interaction between experienced and skilled employees in fostering innovation. This interaction leads to the accumulation of both explicit and implicit knowledge, which is crucial for the development of new technologies necessary that can be translated into innovation performance. On the other hand, Shipton et al. (2005) and Jiang et al. (2012) have established a positive relationship between HRM programmes in the selection and recruitment procedures and the creative abilities of employees. These studies highlight that the strategic management of human resources plays a pivotal role in influencing employees' creative and innovative capabilities. By selecting and recruiting individuals who possess the necessary abilities, knowledge and skills, organizations can enhance their innovation outcomes. On the other hand, Shipton et al. (2005) and Jiang et al. (2012) have established a positive relationship between HRM

programmes in the selection and recruitment procedures and the creative abilities of employees, which ultimately influences innovation outcomes in companies. Jiang et al. (2012) further highlight the importance of an enabling environment for employees that possess the ability, knowledge and skill to support corporate innovation. Thus, the investment of SMEs in providing such an environment and implementing necessary practices (that would enable their employees) can aid in driving and developing innovative behaviour in these companies, leading ultimately to better innovation-related performance (Rastrollo-Horrillo & Rivero Díaz, 2019).

Overall, these scholarly studies support our hypothesis. Through training activities, interactions among experienced employees, strategic guiding HRM programmes and the creation of an enabling environment, SMEs can cultivate a workforce with enhanced abilities and foster innovative behaviour, leading to improved innovation-related performance. Accordingly,

> **H4.** Innovation mediates the relationship between AHR and innovation performance for SMEs.

For motivation-enhancing practices (MHR), recent research has emphasized the vital role of innovation in driving the performance and success of SMEs (Ramos-González et al., 2022). This highlights the significance of understanding the factors that influence innovation performance within these organizations, including the impact of motivation-enhancing practices (MHR).

Motivation-enhancing practices, such as providing material incentives linked to performance and opportunities for promotion, play a crucial role in stimulating and sustaining employee motivation (Choudhary et al., 2020; van Esch et al., 2018). These practices create a motivational climate that encourages employees to develop positive behaviours and actively contribute to the introduction of new innovations. When employees are incentivized and rewarded for their innovative efforts, they are more likely to invest their time, energy and expertise in generating novel ideas and driving innovation within the organization.

In SMEs, where the emphasis on employee care and a supportive work environment is often prevalent, there is an increased potential for motivation-enhancing practices to influence innovation performance. SMEs tend to foster an organizational culture characterized by enhanced trust, cohesion and mutual gains (Rondi et al., 2022). Such a conducive work environment creates a positive atmosphere where employees feel valued, supported and encouraged to utilize their abilities to develop new ideas for product production and development. This supportive context further amplifies the impact of motivation-enhancing practices on employee motivation and their subsequent engagement in innovative activities.

Considering the pivotal role of innovation in driving SME performance, it is important to recognize that innovation acts as a mediating mechanism between motivation-enhancing practices and innovation performance. By motivating employees through MHR practices, SMEs stimulate their willingness to engage in innovative behaviours, contributing to the generation and implementation of innovative ideas (Choudhary et al., 2020; van Esch et al., 2018). This, in turn, positively influences innovation performance, as innovative ideas and solutions are effectively implemented and lead to improved outcomes in terms of new products, services and processes.

Therefore, the scholarly argument supports the hypothesis that innovation mediates the relationship between motivation-enhancing practices (MHR) and innovation performance in SMEs. By fostering a motivational climate through MHR practices, SMEs can motivate employees to engage in innovative activities, leading to enhanced innovation performance and ultimately contributing to the overall success and competitiveness of the organization.

> **H5.** Innovation mediates the relationship between MHR and innovation performance in SMEs.

Finally, opportunity-enhancing practices (OHR) have been identified as key drivers of innovation outcomes within organizations (Chowhan, 2016; Zhang & Edgar, 2022). These practices empower employees to contribute their skills and motivation towards organizational objectives. They include flexible job design, work teams, employee involvement and information sharing, which provide employees with opportunities to thrive and excel in their roles (Zhang & Edgar, 2022). Therefore, these practices create an environment that promotes voluntary participation and encourages employees to contribute their ideas and knowledge towards innovation efforts. In effect, previous research has highlighted the positive impact of participatory work environments on knowledge dissemination and innovation, particularly in research and development centres (Shahzad et al., 2019; Thneibat, 2021; Weerakoon et al., 2020).

In the context of SMEs, it has been observed that the implementation of organizational practices that support the introduction of new and innovative products or processes can significantly enhance innovation performance (De Massis et al., 2018; Thneibat, 2021). These practices may include the establishment of participative work environments, providing employees with training and development opportunities, implementing knowledge-sharing mechanisms, and promoting employee involvement in decision-making processes. By fostering an organizational culture that embraces and encourages innovative thinking and actions, SMEs can effectively leverage their resources and capabilities to drive innovation and ultimately enhance their innovation performance (De Massis et al., 2018; Thneibat, 2021). Accordingly, we propose

> **H6.** Innovation mediates the relationship between OHR and innovation performance in SMEs.

3 | METHODOLOGY

The objective of this study is to examine the correlation between HRM practices and innovation performance in French SMEs. To accomplish this objective, a quantitative research approach was employed utilizing a survey methodology. The selection of a survey

and quantitative methodology was based on several factors. Firstly, surveys allow for data collection from a large sample of SMEs, thereby enhancing the generalizability of the findings. Secondly, quantitative methods provide a structured framework for analysing the relationships between the variables under investigation, enabling statistical inference and the determination of the strength and significance of associations.

The survey questionnaire was specifically designed to collect data from employees working in SMEs in France. It encompasses items that assess the implementation of HRM practices within these SMEs and their impact on innovation performance. This section provides a comprehensive overview of the research methodology, including details on the sample selection, data collection procedures, data analysis techniques employed and ethical considerations taken into account during the study.

3.1 | Sample and data collection

The research sample for this study comprised French SMEs selected through convenience sampling. Data collection commenced in 2021 by identifying 750 SMEs operating in various industries that produce new goods. Companies with fewer than 10 employees and individual establishments were excluded from the study. A cover letter was sent to the target group, which included owners/managers and personnel in the human resources, research and development, and production departments, as they were deemed most suitable for providing relevant data. The cover letter contained an electronic link to a self-administered questionnaire designed to ensure the binding nature of responses and prevent multiple survey completions. A total of 430 valid responses were obtained from the target population.

Initially, the questionnaire was developed in English to facilitate the direct inclusion of established measures and scales from validated and widely used studies in the management literature. These measures and scales were derived from research conducted in English-speaking contexts and demonstrated robust psychometric properties. To ensure the accuracy and clarity of the French translation, experts proficient in both English and French, particularly in the field of management, were engaged. These experts reviewed and refined the translated version to ensure linguistic accuracy and relevance within the French context. Their valuable input and feedback aided in refining the survey items and ensuring their appropriateness for the target population.

Additionally, to validate and enhance the French version of the survey, feedback and comments were sought from specialists in the field during the research's participation in the annual AIMS conference. AIMS (Association francophone d'enseignants et chercheurs en management, stratégie et organisation) is an association that brings together French-speaking academics and researchers in the fields of management, strategy and organization. Participation in the conference provided an opportunity to gather valuable insights from field experts, which helped improve the content, clarity and relevance of the questionnaire.

3.2 | Measuring instruments

The study adopts the AMO framework (Appelbaum et al., 2000) to explore the relationship between HRM practices and performance, extending beyond traditional investigations (Demortier et al., 2014). Scholars adopting this perspective argue that specific practices implemented by management can enhance employee capabilities and motivation (Chowhan, 2016; Cui & Yu, 2021; Delery & Roumpi, 2017; Jiang et al., 2012). Furthermore, it provides a conducive work environment encompassing tools, procedures, time and leadership behaviour (Blumberg & Pringle, 1982). Such an environment encourages employees with AMO behaviour to acquire and share knowledge, laying the foundation for innovation (Wang & Noe, 2010). Shipton et al. (2005) contend that AMO behaviour can boost organizational ability to create and innovate through the implementation of character-enhancing practices. To operationalize this framework, Subramony (2009) developed a 22-item measure of AMO, tested in several studies (Bhatti et al., 2021; Delery & Gupta, 2016; see Appendix A). It comprises three latent variables: ability, training and hiring (AHR); incentives, compensation and rewards (MHR); and employee engagement and opportunities (OHR) provided by companies. These variables have garnered attention in the context of SMEs, innovation-oriented firms and project-based organizations (Bhatti et al., 2021; Bos-Nehles et al., 2023; Ehrnrooth & Björkman, 2012; Sheehan, 2014).

To measure innovation, we employed a 5-item scale for product innovation and a 5-item scale for process innovation (Gunday et al., 2011). These dimensions align with previous research highlighting their compatibility with innovation performance (Alegre et al., 2012). Our scales also align with measures developed by the OECD (2005), ensuring comprehensive coverage of innovation-related constructs and facilitating meaningful comparisons with other studies.

Innovation performance was measured using the scale utilized by Alegre et al. (2005), which includes items assessing product innovation effectiveness and process innovation efficiency, previously identified as crucial for evaluating innovation (Zahoor et al., 2023).

All scale items employed closed-ended questions on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to gauge responses (see Appendix A).

Control variables in the study included company innovation or patent registrations, company size, level of education, gender, age, and the position held by owners, managers and employees. Additionally, metadata such as company trade names and postal codes were collected to identify geographical locations or cities. The latent variables and their components were translated into French and reviewed by experts in business administration to ensure appropriateness.

4 | ANALYSIS AND FINDINGS

4.1 | Descriptive statistics

Demographic statistics reveal that 51.2% of employed individuals identified as males, while 48.8% identified as females. The largest age

group among respondents was between 21 and 30 years, representing 39.5% of the sample. Regarding education, 29.8% held university degrees, while 22.3% possessed professional degrees. The highest percentage of respondents had 3 to 4 years of work experience, accounting for 37.2%. In terms of company size, the distribution of employees was as follows: 17.9% in companies with 10 to 20 workers, 24.4% in companies with 21 to 30 workers, 21.9% in companies with 31 to 40 workers, 17.0% in companies with 41 to 50 workers, and 18.8% in companies with over 50 workers.

The research encompassed various industries and sizes of companies. Specifically, 17.9% of companies operated in the pharmaceutical industry, 8.4% in the electronics industry, 12.3% in automobile manufacturing and assembly, and 17.2% in industrial equipment. The food sector accounted for 4.9% of beverage companies, 7.2% of companies engaged in household electrical appliance production and 32.1% were categorized as other companies. In terms of innovation types, 55.6% of companies reported production innovations, 34.7% reported improvements in production methods and 9.8% of surveyed companies announced two or more innovations within the past 2 years. The questionnaire was distributed among different categories of respondents, with 17.4% being owners/managers, 21.9% from the human resources department, 13.3% working in research and development, 10.7% being production workers and 36.7% representing other workforce roles.

Table 1 shows some descriptive statistics related to the sample, including Cronbach's alpha correlation values, which are among the statistically acceptable values.

4.2 | Exploratory study

To identify the variables and items that are significant, an exploratory factor analysis (EFA) was used as follows: principal components method and Varimax, where the eigenvalue was chosen to be greater than one, and saturation of elements from 0.30 and more, with the exclusion of elements with lower saturations (Brown, 2014). Table 1 shows that KMO = 0.886 is above the permissible limit of 0.50. Bartlett's Sphericity = 8863.378, with sig = 0.000 less than 0.5 (Reio & Shuck, 2015). The result shows the presence of five main factors and 25 components: AHR (containing 5 components), MHR (containing 6 components), OHR (containing 4 components), INNO (containing 6 components), and finally SEMs-PE (containing

TABLE 1 Exploratory factor analysis (EFA).

Factors	Items	Loading	Communalities	α	Mean	SD	EV	VE
ARH	AHR1	0.86	0.806	.95	3.24	1.227	3.756	15.025
	AHR2	0.93	0.884					
	AHR3	0.91	0.870					
	AHR4	0.93	0.876					
	AHR5	0.86	0.811					
MHR	MHR1	0.73	0.618	.92	3.63	0.960	7.192	28.767
	MHR2	0.85	0.778					
	MHR3	0.88	0.793					
	MHR4	0.86	0.767					
	MHR5	0.84	0.777					
	MHR6	0.71	0.626					
OHR	OHR1	0.88	0.837	.93	3.43	1.126	3.765	15.025
	OHR2	0.90	0.857					
	OHR3	0.89	0.851					
	OHR4	0.88	0.843					
INNO	INNO1	0.65	0.619	.91	3.34	1.013	3.412	13.646
	INNO2	0.63	0.586					
	INNO3	0.86	0.783					
	INNO4	0.86	0.733					
	INNO5	0.82	0.711					
	INNO6	0.88	0.750					
SEMs-PE	SEMs-PE 1	0.82	0.759	.89	3.77	0.823	2.249	8.997
	SEMs-PE 2	0.84	0.780					
	SEMs-PE 3	0.85	0.808					
	SEMs-PE 4	0.82	0.750					

Note: KMO = 0.886; Bartlett's Sphericity = 8840.300; sig = 0.000; $\sigma^2 = 81.460$.
Abbreviations: α, Cronbach's alpha; EV, eigenvalues; VE, variance explained.

4 components). To identify the correlated and influencing variables in this search, we chose the principal components method and Varimax, set an eigenvalue greater than one, and chose a minimum item saturation of 0.30 (Serrano et al., 2018), as illustrated in Table 1. The ability of the model to achieve the discriminative validity of the five variables was verified, as the eigenvalue was between 2.249 to 7.192, α above .89, and cumulative variance = 81.460 (>60; Hancock et al., 2018).

Similarly, the common method bias of the data was examined by loading, in Table 2. In addition, common style bias of the data was examined (Bish et al., 2015), where all components are loaded into a single factor as in Table 2. The results showed that the cumulative variance was 28.767%, which is less than the recommended limit (<50%), and this indicates that there is no effect on the data that could be caused by the bias of the data that was collected through search (Jordan & Troth, 2020). Thus, these results confirm that the discriminatory validity conditions are satisfied and that the model can predict the search variables.

4.3 | Confirmatory factor analysis (CFA)

The CFA procedure is the next step to determine the factor structure that is extracted from the EFA, how the data are aggregated, how the variables are correlated, and how well the variables represent the structures (Reio & Shuck, 2015). The factor test results indicate that the SFL values were above 0.50 (Hair et al., 2010), and the SMC values

TABLE 2 Common method variance (CMV).

Items	Total	Variance	Cumulative	Total	Variance	Cumulative
1	7.192	28.767	28.767	7.192	28.767	28.767
2	3.756	15.025	43.792			
24	0.135	0.541	99.581			
25	0.105	0.419	100.000			

TABLE 3 Confirmatory factor analysis (CFA) results.

Factors	Items	SFL > 0.50	SMC > 0.30	AVE > 0.50	CR > 0.70
ARH	AHR1	0.886	0.746	0.83	0.91
	AHR2	0.935	0.856		
	AHR3	0.927	0.834		
	AHR4	0.923	0.856		
	AHR5	0.884	0.747		
MHR	MHR1	0.770	0.538	0.70	0.84
	MHR2	0.875	0.72		
	MHR3	0.881	0.779		
	MHR4	0.850	0.735		
	MHR5	0.870	0.702		
	MHR6	0.772	0.538		
OHR	OHR1	0.891	0.779	0.80	0.90
	OHR2	0.893	0.818		
	OHR3	0.899	0.799		
	OHR4	0.901	0.777		
INNO	INNO1	0.775	0.426	0.66	0.82
	INNO2	0.746	0.395		
	INNO3	0.864	0.738		
	INNO4	0.830	0.733		
	INNO5	0.825	0.668		
	INNO6	0.832	0.767		
SEMs-PE	SEMs-PE 1	0.843	0.674	0.70	0.85
	SEMs-PE 2	0.839	0.709		
	SEMs-PE 3	0.881	0.731		
	SEMs-PE 4	0.832	0.671		

Abbreviations: AVE, average variance extracted; CR, composite reliability; SFL, standard factor loading; SMC, square multiple correlation.

exceeded 0.30. Furthermore, compound reliability (CR) and mean extracted variance (AVE) were calculated and based on Excel, the results of these averages are shown in Table 3 and the values were within the permissible limits (CR > 0.70 and AVE > 0.50), which fulfil the requirements for confidence and validity balance (Hair et al., 2010).

The linear relationships of the independent variables of the search were examined; Table 4 displays the correlation values, and the values of the correlation coefficients matrix for the search variables are less than the square root (AVE) values for each of them. The values of the variance inflation factor (VIF) between the range 1.045 and 1.133 for the independent variables appear to be less than 0.5, and the tolerance factor is greater than 0.2 and are within permissible limits (O'brien, 2007). Therefore, these results fulfil the conditions of discriminatory validity of the search model.

4.4 | Structural model and results analysis

Depending on structural equation modelling (SEM), we tested the validity of the search model and explored the interrelationships between the latent variables to ensure that this model was free from random measurement errors and could be trusted to complete the simple and multiple linear regression test for this search shown in Figure 1.

The results of the examination indicate that they are within the recommended parameters (Gaskin, 2020): CMIN/DF = 2.014 < 5, RMSEA = 0.049 < 0.08. A set of indicators: RMR = 0.049, less than 0.08. GFI = 0.911, and CFI = 0.970, are above 0.90, for the indices PNFI = 0.825 and PGFI = 0.737, it is above 0.50. Based on the results of previous indicators, we can confirm that the model is appropriate and has predictive ability.

4.5 | Hypotheses testing

SEM was used to test the search's hypotheses in two stages: first, hypotheses (H1–H3) were tested, which suggested a direct relationship between organizational practices that enhance human resources and innovation performance in SMEs. The test results in Table 5 indicate that A_HR, M_HR and O_HR have an effect on performance and that the effect was positive and significant, respectively ($\beta = .191$, p-value = .024), ($\beta = .236$, p-value = .015) and ($\beta = .282$, p-value = .000). Therefore, these results support H1, H2 and H3. Table 5 shows the results of the hypotheses examination.

Second, to test mediation hypotheses, which refer to the mediation of innovation between AOM-HR and SME innovation performance. The test results in Table 6 indicate that innovation mediates between A_HR and innovation performance, and that the effect was positive and significant, where ($\beta = .147$, p-value = .025), and thus this result supports H4. Likewise, the results indicate that innovation mediates between M_HR and innovation performance, and that the

TABLE 4 Construct correlation matrix and test of multi-collinearity.

Factors	Tolerance > 0.2	VIF < 5	AHR	MHR	OHR	INNO	SMEs-PE	$\sqrt{AVE}$
AHR	0.957	1.045	1	0.153**	0.131**	0.150**	0.191**	0.83
MHR	0.915	1.092		1	0.207**	0.225**	0.236**	0.70
OHR	0.894	1.119			1	0.282**	0.282**	0.80
INNO	0.883	1.133				1	0.320**	0.66
SMEs-PE	-	-					1	0.70

**Significance at .01.

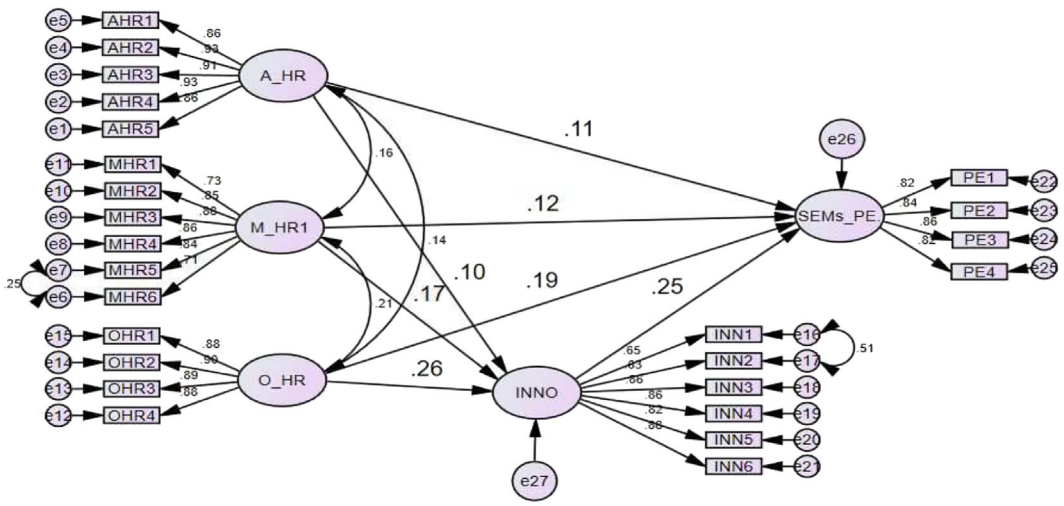

FIGURE 1 Structural equation modelling (SEM) results of study model. [Colour figure can be viewed at wileyonlinelibrary.com]

effect was positive and significant with (β = .173, *p*-value = .003) and this result supports H5. Finally, the results indicate that innovation mediates the relationship between O_HR and innovation performance, and that the effect was positive and significant with (β = .209, *p*-value = .001) and therefore this result supports H6.

To examine the type of mediation, the results of the research indicate that it fulfils the conditions suggested by Baron and Kenny (1986), which assumes a statistically significant effect of direct relationships between variables (Al-Tabbaa et al., 2022). First, Table 5 shows a direct effect of the paths between the dimensions of the AOM-HR and innovation performance. Second, the direct relationships of dimensions (A_HR, M_HR, O_HR) on innovation were examined with the help of SPSS, version 26, and the results revealed a positive and significant effect of these dimensions on innovation as follows (β = .150, *p*-value = .039), (β = .225, *p*-value = .001) and (β = .292, *p*-value = .000). Finally, the results indicate a positive effect of innovation on innovation performance (β = .320, *p* = .000; see Figure 2). These results confirm that partial mediation contributed to modifying the main result in the relationship between organizational practices that enhance human resources and the performance of SMEs, as the effect of independent variables on the dependent variable decreased, and did not reach zero.

5 | DISCUSSION AND IMPLICATIONS

The purpose of this research was to contribute to the literature by examining the impact of HRM practices that enhance AMO workforce characteristics on innovation and innovation performance in SMEs in France. From the perspective of RBT, we hypothesized that HRM (as a core capability), by the adoption of packages of practices that enhance skills, motivation and opportunities, can encourage innovation, which is positively reflected on SMEs' innovation performance.

TABLE 5 Path analysis results, hypothesis testing.

H	Path direct	Estimate	SE	*p*-Value
H1	A_HR → SMEs-PE	0.069	0.030	.024
H2	M_HR → SMEs-PE	0.117	0.048	.015
H3	O_HR → SMEs-PE	0.129	0.035	.000
H4	A_HR → INNO	0.69	0.033	.039
H5	M_HR → INNO	0.174	0.053	.001
H6	O_HR → INNO	0.188	0.39	.000
H7	INNO → SMEs-PE	0.230	0.051	.000

In other words, the results of examining the theoretical model demonstrate that the three components of the AMO framework significantly predict innovation performance in SMEs.

These results underscore the paramount importance of nurturing the physical and intellectual abilities of employees and providing an enabling work environment within SMEs to cultivate creativity and yield novel patents for high-quality products. Policies related to employee selection and training are inherently intertwined with their abilities, facilitating engagement in creative thinking and the development of innovative products. In essence, abilities reflect the level of training and education, and the acquisition of knowledge among workers to effectively fulfil their assigned tasks. For instance, training programmes foster a supportive environment, facilitating knowledge exchange, fostering improved relationships, building trust and enhancing cooperation among employees. Moreover, they offer discernible benefits related to decision-making capabilities, productivity enhancement and motivation for optimal performance (McCarthy & Milner, 2020). Collectively, our findings align with and complement previous studies (e.g., Jiménez-Jiménez & Sanz-Valle, 2008; Shipton et al., 2005), which emphasize that the cultivation of abilities constitutes a pivotal factor within HRM systems for influencing innovation outcomes in the context of SMEs.

In addition, our results signify a direct and substantial impact of practices aimed at motivating employees on innovative performance, providing robust support for H2. The act of motivating employees to actively participate in the innovation process, introduce novel innovations, prioritize product and service quality, and seek differentiation serves as a mechanism through which practices enhancing individual characteristics become intricately linked to elevated performance levels (Schmelter et al., 2010). Focusing on small businesses, SMEs' owners/managers play a pivotal role in shaping employee behaviour by nurturing an appropriate work environment that serves as a solid foundation for mitigating physical and psychological job withdrawal while fostering stability (Laguda, 2020). Notably, the effect size underscores that motivation-enhancing bundles encompassing elements such as competitive salary structures, rewards and employee performance evaluations are closely associated with performance levels within the studied companies. This implies that these practices can effectively counterbalance their initial costs, which may initially evoke negative perceptions among resource-constrained small firms (Sels et al., 2006). Our results, however, partly contradict other studies (e.g., Bos-Nehles et al., 2023 and Rauch & Hatack, 2016) that argues that the effectiveness of external incentives remains limited when assigning employees to activities related to creativity and innovation, so these researchers suggest giving greater importance to practices that contribute to enhancing internal

TABLE 6 Direct and indirect effects.

H	Path mediation	Direct effect (with mediator)	*p*-Value	Indirect effect	LL 95%	UL 95%	*p*-Value
H4	A_HR → INNO → SMEs-PE	0.110	.002	0.025	0.002	0.106	.025
H5	M_HR → INNO → SMEs-PE	0.125	.019	0.042	0.015	0.079	.003
H6	O_HR → INNO → SMEs-PE	0.189	.024	0.063	0.032	0.061	.001

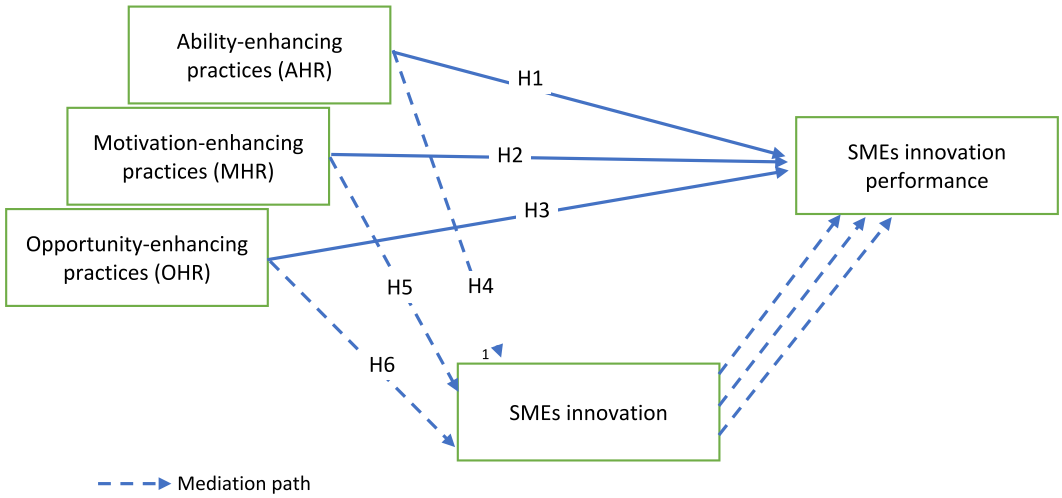

FIGURE 2 Study conceptual model. [Colour figure can be viewed at wileyonlinelibrary.com]

motivation. On the contrary, our findings indicate that motivation-enhancing bundles (which can be regarded as external motivations), also play a significant role in driving innovation performance within SMEs.

Finally, our research reveals that opportunity-enhancing practices exert a positive influence on innovation performance, lending support to H3. Researchers have established links between these opportunities and innovative performance through effective work design, the cultivation of an organizational culture rooted in values conducive to innovation, and the promotion of cooperation, teamwork and participation. This enables employees to harness their energies effectively (Bos-Nehles et al., 2023; Seeck & Diehl, 2017; Shipton et al., 2017). The proliferation of these behaviours within companies fosters the generation of new ideas, facilitating the introduction of innovative solutions that confer competitive advantages and elevate innovation performance (Choudhary et al., 2020). Our findings build upon the work of Rauch and Hatack (2016) and Shipton et al. (2017) by extending their insights to highlight that the implementation of practices that enhance participation in decision-making and foster organizational commitment significantly influences innovation in the SME context, ultimately enhancing the performance of these firms.

The findings of our study also shed light on the intricate dynamics of innovation performance within SMEs by revealing the mediation effect of innovation in the relationship between AMO (Ability-Motivation-Opportunity) human resource practices and innovation performance, providing robust support for H4, H5 and H6. While research examining the indirect impact of innovation in the context of the relationship between AMO behaviour and innovation performance is relatively scarce, our study adds to Chowhan's (2016) work, who offers compelling evidence supporting the mediating role of innovation between skill enhancement and organizational general performance. In addition, our findings expand further Rauch and Hatack's (2016) and Lin et al.'s (2020) works, which illuminate the mediating influence of human capital in the intricate nexus between HRM systems and innovation performance. The critical role played by human resource enhancement practices (as highlighted in our study) has pivotal function in catalyzing innovative behaviour and translating creative ideas into tangible actions, thereby contributing to the overall enhancement of innovation performance (Fernandez & Moldogaziev, 2013). Our findings collectively emphasize the paramount importance of AMO behaviour development within SMEs. Neglecting these crucial aspects may hamper innovative activities due to constraints in capabilities, experience and incentives (Harney et al., 2022; Lin et al., 2020), subsequently exerting a tangible impact on organizational outcomes within SMEs.

5.1 | Theoretical implications

Reflecting upon the findings, this study offers a comprehensive theoretical and empirical framework that underscores the significance of adopting AMO behaviours in SMEs to enhance organizational performance. The findings contribute to the existing literature in several key ways. *Firstly*, we have developed and validated a conceptual model that elucidates the mediating role of innovation, which unlocks the value of HR-enhancing practices and drives innovation performance. By implementing AMO standards, SMEs can improve their innovation outcomes, leading to competitive advantages and enhanced organizational performance. These findings expand our understanding of the positive impact of the AMO framework and its three embedded dimensions: the accumulation and sharing of knowledge and experience among employees, coupled with the use of organizational incentives such as rewards, wages, job stability and promotion, can foster the development of employee abilities (Bhatti et al., 2021; Seeck & Diehl, 2017; Shahzad et al., 2019). Hence, based on our established and validated model, which examines the impact of HR-enhancing initiatives on driving innovation-related performance among SMEs, our study brings fresh insights to address two ongoing inquiries within the scholarly discourse: the extent to which distinctive HRM bundles correlate with both innovation and innovation performance(?) and which underlying mechanisms provide a more robust explanation for the positive influence of HRM bundles on fostering innovation(?) (Chen et al., 2023).

Secondly, this study underscores the role of HRM practices (as an organizational capability) in shaping human characteristics and ultimately influencing organizational performance. Specifically, HRM practices facilitate the development and utilization of professional and cognitive capabilities while providing appropriate incentives to enhance employee performance. This aligns with the RBT, which emphasizes the importance of unique resources, including human resources, in attaining competitive advantage (Barney, 1991). The findings suggest that SMEs can leverage specific HRM practices, such as training, motivation, collaboration and participation, to attract and retain high-quality human resources, similar to larger companies. Crucially, this reinforces a fundamental tenet of the RBT, which acknowledges that simply possessing resources and capabilities (R&Cs) does not inherently lead to superior performance. Rather, researchers such as Ketchen et al. (2007) and Kraaijenbrink et al. (2010) emphasize that firms must strategically act and harness their R&Cs to unlock their full potential. We have further demonstrated this in our study, as our model shows that the SMEs' innovation action was necessary to delivering invitation performance. These structured practices (i.e., the AMO framework) would foster a culture of innovation within SMEs, ensuring that employees not only possess the requisite resources but also have the motivation and means to utilize them optimally. Consequently, aligning HRM strategies with innovation objectives enables SMEs to harness their resources more effectively, resulting in enhanced innovation performance and sustainable competitive advantages (Barney, 1991).

Lastly, this study contributes to the existing literature by examining the mediating role of innovation in the relationship between HR-enhancing practices and innovation performance in SMEs. The results emphasize the significance of innovation as a linking mechanism, connecting AMO practices with innovation performance in SMEs. Furthermore, this study extends the literature by focusing on the unique context of SMEs, further enriching the literature in this area.

5.2 | Practical implications

In addition to its theoretical contributions, this research offers practical implications that underscore the pivotal role of owner/managers in driving innovation within SMEs. The effective implementation of HRM systems emerges as a critical lever for channelling resources towards innovation. Beyond the conventional functions of talent attraction and selection, management's responsibilities encompass the cultivation of internal organizational competencies. This is achieved through the implementation of incentive policies designed to inspire employees to proactively generate creative ideas, leveraging their innovative potential for the sustained success and continuity of the company.

Furthermore, owners/managers are entrusted with the task of creating an enabling work environment that fosters teamwork, collaboration, and active knowledge acquisition, exchange, and dissemination. Such an environment serves as a cornerstone for supporting the organization's innovation strategy. It is worth noting that increasing awareness among business owners and managers about the myriad benefits of enhanced AMO practices may motivate them to transition from traditional and informal HRM methods. This transformation could involve the adoption of structured recruitment processes, tailored training programmes and performance-based reward systems.

By aligning HRM practices with the overarching innovation goals of the organization, companies stand to not only attract and retain top-tier talent but also to nurture a culture of innovation. Ultimately, the findings of our study lend credence to these recommendations, underscoring the notion that the omission of such practices can serve as a disincentive for companies seeking to attain innovative excellence. In sum, this research offers actionable insights that can empower SMEs to leverage HRM practices effectively in their pursuit of innovation-driven success.

5.3 | Limitations and future research

While this study has made valuable contributions to understanding the role of HRM practices in enhancing the innovative performance of French SMEs, it is important to acknowledge the study's limitations and consider potential future research directions to address these limitations. We present these methodology-related opportunities as specific key issues. *First*, there is a need to conduct longitudinal studies that span across different periods, which will provide insights into the dynamic nature of the relationships between HRM practices and innovation performance. This approach will allow researchers to examine how these relationships evolve and identify any temporal effects or contingencies that may influence the effectiveness of HRM practices in enhancing innovation. *Second*, investigating the mediating and moderating variables that can influence the relationship between HRM practices and innovation performance can provide a more comprehensive understanding of the underlying mechanisms. For example, organizational culture, leadership styles and employee motivation could act as mediating variables, while contextual factors such as industry characteristics, firm size and technological complexity could act as moderating variables. *Third*, extending the research beyond SMEs and exploring HRM practices' impact on innovation performance in different sectors (e.g., manufacturing, services, technology) will provide insights into sector-specific dynamics. Different sectors may have distinct characteristics, resource constraints and innovation requirements, which may influence the relationship between HRM practices and innovation performance. Understanding these sector-specific dynamics will enable researchers to develop tailored HRM strategies that can maximize innovation outcomes. *Fourth*, while the current study have employed quantitative methods, future research can benefit from incorporating qualitative methods, such as interviews or case studies, to gain a deeper understanding of the underlying mechanisms and contextual factors. Mixed methods approaches can provide rich and nuanced insights into the complexities of the relationship between HRM practices and innovation performance, allowing for a more comprehensive analysis. *Finally*, it is suggested that future research examines the potential moderating effects of national culture and institutional context on the relationship between HRM practices and innovation performance in SMEs.

6 | CONCLUSIONS

SMEs, characterized by their unique attributes, often encounter challenges in effectively managing their human resources. Additionally, owners/managers of these companies tend to retain decision-making authority and rely on informal practices. Consequently, the neglect of developing employee capabilities, fostering motivation, and creating an environment conducive to knowledge sharing and idea generation can hinder innovation and, consequently, innovative performance. The research findings align with existing literature that emphasizes the importance of implementing practices aimed at attracting, recruiting, training, motivating, and retaining skilled and talented individuals to enhance innovation performance and overall company performance. It is crucial for companies, particularly those relying on innovation for their sustainability and longevity, to urgently adopt such practices. The research outcomes can serve as a catalyst for owners/managers of small and medium-sized enterprises to embrace practices that enhance workforce characteristics throughout various stages of transformation, ultimately leading to success and stability.

AUTHOR CONTRIBUTIONS

Omar Al-Tabbaa: Conceptualization, writing—review and editing, visualization, supervision. **Taher Alkhalaf:** Conceptualization, writing first draft, revision, data collection, data analysis, visualization.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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APPENDIX A

AMO (Subramony, 2009)	
1. Ability-enhancing HR practices	
AHR1	(1) Only the best are hired to work in my company.
AHR3	(3) The company provides training for me to learn new ways to do my job.
AHR4	(4) There are formal training programmes to teach new hires the skills they need to perform their job.
AHR6	(6) Performance appraisals provide specific feedback concerning how my performance can be improved.
AHR7	(7) The results of the performance appraisal are used to determine my training needs.
2. Motivation-enhancing HR practices	
MHR1	(1) Our pay in this company is higher than what competitors offer.
MHR2	(2) Our bonuses are closely tied to individual or group performance.
MHR3	(3) Part of my compensation is based on how well the company is doing financially.
MHR4	(4) I regularly (at least once a year) receive a formal evaluation of my performance
MHR5	(5) Performance appraisals are based on objective quantifiable results.
MHR6	(6) I have the opportunity to receive extra benefits such as housing benefit provided by the company.
3. Opportunity-enhancing HR practices	
OHR1	(1) My company places a great deal of importance on working in teams.
OHR2	(2) The work is organized around teams for a majority of staff.
OHR7	(7) I have opportunities to make important work-related decisions such as how the work is done or implement new ideas.
OHR8	(8) If there is a decision to be made, I have opportunities to participate in the decision-making process.
Innovation (Gunday et al., 2011)	
1. Innovation product	
INNO1	(1) Increasing manufacturing quality in components and materials of current products.
INNO2	(2) Decreasing manufacturing cost in components and materials of current products.
INNO3	(3) Developing newness for current products leading to improved ease of use for customers and to improved customer satisfaction.
INNO4	(4) Developing new products with technical specifications and functionalities totally differing from the current ones.
2. Innovation process	
INNO1	(1) Determining and eliminating non value adding activities in production processes.
INNO3	(3) Increasing output quality in manufacturing processes, techniques, machinery and software.
Innovation performance (Alegre et al., 2005)	
SEMs-PE1	(1) Our company introduces new products/services to high standards.
SEMs-PE3	(3) The company develops new high-quality products/services.
SEMs-PE4	(4) The company introduces a number of new products/services to be introduced in the market compared to competitors.
SEMs-PE8	(8) The rate of change and modernization of our processes and technologies is very high.