Decision Science Letters 14 (2025) 401–416

Contents lists available at GrowingScience

Decision Science Letters

homepage: www.GrowingScience.com/dsl

Resource-based management and organizational performance: The role of co-creation, environmental policy and organizational learning support

Nhi Tran Thao Dinh[a] and Huan Tuong Vo[a*]

[a] *International University (Vietnam National University Ho Chi Minh City), Ho Chi Minh, Vietnam*

C H R O N I C L E

Article history:
Received: July 10, 2024
Received in revised format: August 29, 2024
Accepted: September 202 2024
Available online: September 22, 2024

Keywords:
Resource-based management
co-creation
Environmental policy
Organizational learning support
Organizational performance

A B S T R A C T

In today's rapidly evolving business environment, driven by technological advancements and increasing stakeholder expectations, firms must strategically innovate to ensure long-term success and competitiveness. This study examines the interconnections between co-creation, resource-based management, environmental policy, organizational learning support, and organizational performance within the framework of Industry 4.0, grounding its analysis in the resource-based view theory. Focusing on the emerging market context of Vietnam, the research utilizes data collected by means of a survey of 321 managers across various industries, applying Partial Least Squares Structural Equation Modeling to explore these respondents' perspectives on the relationships between the factors listed above. The findings provide actionable insights and strategic recommendations of relevance to companies which aim to thrive in the dynamic landscape of Industry 4.0, particularly in emerging markets. This study contributes to the existing literature by offering practical implications for the optimization of resource management and enhancement of organizational performance in the context of ongoing industrial transformation.

1. Introduction

In the rapidly evolving landscape of Industry 4.0, characterized by advanced digital technologies and increasing environmental concerns, effective management strategies are crucial for sustaining competitive advantage (Banmairuroy et al., 2022). Resource-Based Management (RBM), co-creation, environmental policy, and organizational learning support are pivotal concepts in this context. The Resource-Based View (RBV) theory emphasizes the leveraging of unique internal resources to gain a competitive edge (Barney & Arikan, 2005; Barney, 2001; Zahra, 2021), yet its application within the Industry 4.0 framework, especially in emerging markets like Vietnam, remains underexplored. Co-creation, which fosters collaboration among stakeholders, plays a pivotal role in enhancing innovation and aligning products with market demands (Huynh et al., 2023; Prahalad & Ramaswamy, 2004; Ramaswamy & Ozcan, 2018). Simultaneously, there is a critical need for governments to introduce environmental policies that guide businesses toward sustainable practices(Liao, 2018). However, the integration of these factors within RBM in the context of Industry 4.0 is still underdeveloped in current research. In contrast to earlier research, which has often treated environmental policy as a compliance issue (Ozcan et al., 2020; Truong et al., 2024), this study conceptualizes it as a dynamic resource that can drive innovation and competitive advantage when integrated with RBM and co-creation practices (Hille et al., 2020; Pacheco-Vega, 2020; Wang et al., 2019). Environmental policies, when strategically aligned with co-creation and

* Corresponding author.
E-mail address vthuan@hcmiu.edu.vn (H.T. Vo)

ISSN 1929-5812 (Online) - ISSN 1929-5804 (Print)

doi: 10.5267/j.dsl.2024.12.013

organizational learning, have the potential to not only meet regulatory requirements but also to proactively address environmental challenges through innovation and collaboration.

Despite the growing body of literature on RBV, significant conceptual and methodological gaps persist. Previous studies have predominantly examined the impact of perceived organizational support (Jeong & Kim, 2022; Kim et al., 2018) and environmental innovation (Liao, 2018) independently, often neglecting the potential synergies between these variables. Additionally, the role of collaborative interaction in optimizing resource-based management, especially in the context of Industry 4.0, has been insufficiently explored (Latham et al., 2010; Wójcik, 2015). The influence of organizational learning support as a strategic enabler within this dynamic has also been inadequately addressed (Sutha, 2024). These gaps highlight the need for a more comprehensive understanding of how these elements collectively impact organizational performance, particularly in the context of emerging markets adapting to Industry 4.0 (Haneda & Ito, 2018).

This study seeks to address these research gaps by investigating the effect of the integration of co-creation, environmental policy, and organizational learning support within the RBM framework on organizational performance. Utilizing data from 321 Vietnamese firms and employing Partial Least Squares Structural Equation Modeling (PLS-SEM), the study aims to elucidate the complex interrelationships among these factors and answer three research questions:

1. How does the integration of co-creation practices influence the formulation and implementation of environmental policy within organizations, thereby impacting organizational performance?
2. To what extent does the adoption of environmental policy strategies impact the adoption and integration of RBM practices in organizational operations, and how do these practices contribute to organizational performance?
3. What is the role of organizational learning support in facilitating research-based management, and how does this support contribute to the enhancement of overall organizational performance?

The study is structured to provide strategic insights and practical recommendations, with a particular focus on helping firms in emerging markets navigate the challenges and opportunities presented by Industry 4.0. By addressing several research gaps, this study contributes to the literature on strategic management in the context of digital transformation and sustainability.

2. Literature review

2.1. Resource-based view

RBV is a fundamental theoretical framework in strategic management that underscores the importance of leveraging internal resources and capabilities to achieve sustainable competitive advantage (Barney & Arikan, 2005; Lockett et al., 2009). According to Barney (1991), firms which possess unique, rare, and inimitable resources can outperform their competitors by creating value. However, the traditional RBV approach has been criticized for its focus on static resources, which may not fully capture the dynamic capabilities required in the rapidly evolving context of Industry 4.0 (El Baz & Ruel, 2021).

Recent studies have expanded on RBV by emphasizing that knowledge management is a critical resource for sustaining competitive advantage. Ode and Ayavoo (2020) claim that effective knowledge management practices can enhance the value of organizational resources, leading to improved innovation and performance. Similarly, Singh et al. (2021) argue that knowledge resources, when strategically managed, can bridge the gap between static resources and the dynamic capabilities businesses need to thrive in a digitalized environment. These perspectives suggest that RBV needs to be adapted to account for the dynamic interplay between knowledge management and resource deployment, especially in the context of Industry 4.0.

This literature reveals that RBV has not been applied to the question of how organizations can adapt their resource management strategies to incorporate technological advancements and environmental concerns in the Industry 4.0 context (Zahra, 2021). By integrating insights from knowledge management literature (Ode & Ayavoo, 2020; Singh et al., 2021), this study seeks to reinterpret RBV by integrating the concept of dynamic capabilities into the approach, providing a more comprehensive understanding of how firms can sustain competitive advantage in a digitalized and environmentally conscious era.

2.2. Resource-based management

RBM operationalizes the principles of RBV by strategically managing and leveraging internal resources to enhance organizational performance (Boxall & Purcell, 2000). RBM is anchored in two critical dimensions: innovation strategy execution and innovation-focused human resources. Innovation strategy execution involves systematically applying resources, including technology, processes, and organizational capabilities, to implement innovative ideas effectively. This ensures not only the development of innovations but their integration into the firm's operations, thus driving sustainable value creation. The ability to execute innovation strategies enables firms to navigate the complexities of the evolving business landscape and respond to competitive pressures with agility (Do et al., 2022; Oke et al., 2012).

Next, the concept of innovation-focused human resources emphasizes the role of human capital in fostering continuous innovation. This dimension involves the development of a workforce that is not only skilled but also actively engaged in the innovation process. Firms that prioritize innovation in their human resource policies ensure that employees are equipped with the necessary skills and mindset to drive innovation (Blaique et al., 2024). By aligning human resources with innovation goals, organizations create a culture that encourages creativity, learning, and continuous improvement of skills, leading to sustained competitive advantage and superior performance (Blaique et al., 2024; Do et al., 2022; Oke et al., 2012).

Furthermore, recent literature underscores the critical importance of integrating knowledge management into RBM to enhance dynamic capabilities and strengthen organizational resilience. Notably, Ode and Ayavoo (2020) emphasize that effective knowledge management is vital not only for preserving valuable resources but also for continuously enhancing and strategically applying them to meet organizational goals. Consequently, effective management of knowledge resources has become crucial for achieving superior performance and maintaining a competitive edge over the long term (Mubarik et al., 2019; Truong & Nguyen, 2024). This is particularly relevant in the context of Industry 4.0, where rapid technological advancements necessitate the updating and utilization of knowledge. Additionally, Collins (2021) asserts that organizational resilience, a fundamental aspect of RBM, can be significantly bolstered through proactive knowledge management and strategic resource allocation. Collectively, these perspectives strongly suggest that RBM must evolve beyond traditional resource optimization to include the strategic use of knowledge and resilience-building as dynamic capabilities. Ultimately, by addressing the gaps in the current understanding of RBM's alignment with Industry 4.0, this research proposes a more integrated approach that fosters continuous innovation, adaptability, and long-term organizational performance in a rapidly changing industrial landscape.

2.3. Environmental policy

Environmental policy instruments have traditionally fallen into two primary categories: market-based instruments and command-and-control tools. Over time, the development of environmental management techniques has expanded this categorization to include information-based measures and voluntary agreements, which have proven effective in achieving governance outcomes (Böcher, 2012). These three distinct types of instrument—command-and-control, market-based, and information-based tools—are typically classified based on the level of coercive influence they exert on regulated entities (Pacheco-Vega, 2020). These instruments have recently attracted scholarly interest as means of addressing global challenges such as energy resource depletion, environmental degradation, and climate change (Hille et al., 2020; Wang et al., 2019).

In contrast to earlier studies, which have often treated environmental policy as a single-dimensional construct, this study conceptualizes it as a second-order factor encompassing three distinct dimensions: market-based, command-and-control, and information-based instruments (Liao, 2018). Market-based instruments, such as emissions trading and wastewater treatment fees, internalize pollution costs, encouraging innovative pollution reduction measures while balancing economic impacts (Baldursson & von der Fehr, 2004; Barrett & Stavins, 2003; Williams, 2012). Next, command-and-control instruments, enforced by state agencies, use laws and standards to regulate pollutants and manufacturing processes, prompting businesses to innovate and reduce emissions to comply with governmental expectations (Bergquist et al., 2013; Steinebach, 2022). Finally, information-based instruments rely on transparency rather than enforcement by requiring companies to disclose environmental data, which empowers stakeholders to monitor and influence corporate behavior with regard to environmental innovation (Bowen et al., 2020; Ma et al., 2021).

2.4. Co-creation, environmental policy and organizational performance

The concept of co-creation has emerged as a promising avenue through which companies and their networks of participants can unlock substantial opportunities to generate novel value and enhance existing value (Ind & Coates, 2013). This collaborative approach entails each participant contributing their unique resources and knowledge, thereby facilitating access to previously untapped reservoirs of innovation (Gouillart, 2014). Co-creation, in alignment with RBV theory, involves the development and leveraging of internal and external resources to maximize core capabilities.

Research on co-creation has demonstrated its potential to improve organizational performance by fostering core and exceptional value in terms of processes, management, products, and people (Kim et al., 2020). Furthermore, the association between co-creation and organizational performance in small and medium manufacturers (Kim et al., 2020) and the alignment of products and services with evolving customer needs, has been found to contribute significantly to their success (Frow et al., 2015).

Co-creation's impact extends beyond innovation and economic value, particularly in the context of environmental policy. Collaborative efforts shared by diverse stakeholders are crucial for addressing challenges related to strategies, policies, and technical solutions aimed at reducing carbon reliance (Hofstad et al., 2022). Previous research has demonstrated that there is a lack of incorporation of stakeholder co-creation to mitigate social and ecological consequences. In environmental policy, co-creation involves actively engaging diverse stakeholders to collaboratively address environmental issues, in recognition of the complexity of environmental concerns and the need for diverse perspectives (Reed et al., 2014; Wibeck et al., 2022; Wood et al.,

2015). Implementing collaborative co-creation strategies enables the integration of consumer expectations of environmental sustainability, fostering bio-innovation (Martínez-Martínez et al., 2023). Organizations which employ co-creation when formulating environmental policy not only improve their environmental impact but also enhance their reputation, brand image, and competitive advantage in an environmentally conscious market (Giacomarra et al., 2020; Todeschini et al., 2020).

The relationship between co-creation and environmental concepts remains largely unexplored despite growing recognition of co-creation as a important means of fostering innovation and enhancing overall business potential. Therefore, this study proposes the following hypotheses:

H_1: *Co-creation has a positive effect on environmental policy.*

H_2: *Co-creation has a positive effect on organizational performance.*

2.5. Environmental policy, resource-based management and organizational performance

Environmental policies play a crucial role in shaping and evolving RBM practices within organizations. Grounded in RBV theory, which suggests that competitive advantage stems from the effective management of valuable and inimitable resources (Barney, 1991; El Baz & Ruel, 2021), these policies act as both regulatory frameworks and strategic enablers. Rather than merely enforcing compliance, environmental policies drive innovation by pushing firms to adopt sustainable resource management practices, such as integrating green technologies and optimizing resource allocation. This regulatory pressure ensures that RBM practices are continuously refined to align with sustainability goals and maintain competitiveness, particularly in the context of Industry 4.0 (Fu et al., 2021; Sumrin et al., 2021). Additionally, the implementation of stringent environmental regulations—such as command-and-control policies—forces firms to innovate and optimize their processes to meet these standards, which in turn leads to improved performance outcomes. The positive impact of these policies is further reinforced by market-based instruments like emissions trading and pollution taxes, which create economic incentives for firms to reduce their environmental footprint, fostering both innovation and operational efficiency (Pacheco-Vega, 2020; Steinebach, 2022).

Moreover, the adoption of Industry 4.0 technologies, when aligned with circular economy principles driven by environmental policies, has been shown to significantly enhance organizational performance (Gupta et al., 2021). Information-based instruments, such as eco-labeling and environmental reporting, further contribute to performance improvements by enhancing consumer loyalty and improving financial performance (Delmas, 2002; King & Lenox, 2001). These mechanisms demonstrate that environmental policies are not merely regulatory burdens but also critical drivers of innovation and efficiency, which can lead to superior organizational performance. Based on the above arguments, the following hypothesis is therefore proposed:

H_3: *The implementation of an environmental policy has a positive influence on organizational performance*.

Empirical studies provide robust evidence supporting the positive influence of environmental policies on RBM practices. For example, Liu et al. (2021) demonstrate how environmental regulations in China have driven significant advancements in sustainable resource management, compelling firms to innovate and integrate green technologies into their RBM frameworks. Similarly, He and Zheng (2023) and Ouyang et al. (2020) highlight that environmental regulations push firms to upgrade their industrial structures, leading to continuous evolution and refinement of RBM practices. Moreover, Fu et al. (2021) emphasize that environmental policies incentivize the upgrading of technology, which is crucial for enhancing resource management capabilities in the Industry 4.0 context. Further, regulatory pressures compel firms to dynamically adapt their RBM strategies, resulting in more sustainable and efficient practices (Sumrin et al., 2021). These studies demonstrate that environmental policies do more than just enforce compliance; they actively drive the innovation and strategic adaptation necessary for firms to achieve long-term sustainability and competitiveness through enhanced RBM practices. There is little research on the relationship between environmental policy and RBM in emerging markets such as Vietnam. Therefore, based on the above arguments, the following hypothesis is proposed:

H_4: *The implementation of an environmental policy has a positive influence on RBM.*

2.6. Organizational learning support, resource-based management, and organizational performance

Organizational learning support is a critical concept in management theory, emphasizing the importance of continuous knowledge acquisition, skill development, and the fostering of learning cultures within organizations (Qian et al., 2023; Tortorella et al., 2019). Rooted in RBV, which suggests that a firm's competitive advantage is derived from its ability to manage and leverage valuable, rare, inimitable, and non-substitutable resources, organizational learning support is seen as a key driver of both innovation and strategic resource management. By facilitating the distribution and utilization of knowledge across an organization, it enhances the efficiency and effectiveness of resource-based strategies. This learning process is essential for enabling firms to adapt to the dynamic demands of the business environment by ensuring that resources are not only effectively utilized but also continuously improved and innovated upon to maintain a competitive edge (Naqshbandi & Tabche, 2018; Tortorella et al., 2019).

The integration of organizational learning support with RBM is essential for the effective management and continuous improvement of a firm's strategic resources. Organizational learning, by fostering a culture of innovation, enables firms to translate new knowledge into strategic actions that optimize resource utilization (Do et al., 2022). Effective knowledge management, a core component of organizational learning support, plays a critical role in preserving and strategically applying valuable resources to meet organizational goals (Ode & Ayavoo, 2020). This is particularly crucial in the context of Industry 4.0, where rapid technological advancements require continuous updating of technology and efficient utilization of knowledge to maintain a competitive edge (Mubarik et al., 2019; Truong & Nguyen, 2024). By embedding knowledge management practices within RBM, firms can enhance their dynamic capabilities, ensuring sustained competitive advantage in a rapidly changing environment.

Given this evidence, it is clear that organizational learning support directly enhances the effectiveness of RBM by equipping firms with the tools to manage and innovate their resources strategically. As organizational learning supports the continuous adaptation and optimization of resources, it is reasonable to hypothesize that:

H_5: *Organizational learning support positively influences RBM.*

RBM plays a pivotal role in leveraging a firm's unique resources to achieve superior organizational performance (Blaique et al., 2024; Do et al., 2022; Oke et al., 2012). This requires not just the strategic utilization of these resources but also continuous innovation and adaptation to changing market conditions. Empirical studies have shown that firms with robust RBM capabilities are better able to adapt to environmental changes, exploit new opportunities, and enhance their performance outcomes (Ainuddin et al., 2007; Fernandes et al., 2022). Collins (2021) highlights that the strategic alignment of RBM with proactive knowledge management and resilience-building significantly enhances organizational performance by fostering adaptability and sustained competitiveness. The consistent finding that RBM leads to enhanced organizational performance supports the argument that strategic resource management, when aligned with innovation and adaptability, directly contributes to superior outcomes. Firms which effectively manage and innovate their resources through RBM are better positioned to maintain competitiveness and achieve sustained success. Thus, we propose the following hypothesis:

H_6: *RBM positively impacts organizational performance.*

Organizational learning support is essential for enhancing a firm's competitive advantage by fostering a culture of continuous improvement and innovation (Do et al., 2022). RBM, which relies on scarce and hard-to-replicate resources, is critical for firm performance. Active learning processes within an organization contribute to stable management practices and significantly enhance organizational performance (Qian et al., 2023). When individual experiences are incorporated into organizational learning, both performance and innovation are positively impacted (García-Morales et al., 2012). Strategically, organizational learning plays a vital role across various management functions, including supply chain management (Hult et al., 2003) and human resource management (Jaw & Liu, 2003). The benefits of RBM and innovation are further amplified by a positive organizational learning attitude (Chen et al., 2014; Do et al., 2022). Evidence from Brazilian manufacturers confirms that supporting organizational learning leads to better firm performance (Tortorella et al., 2019). Additionally, firms that prioritize learning show higher performance levels and improved longevity and reputation (Aragón-Correa et al., 2007; Lin & Kuo, 2007; Lin et al., 2016).

The primary objective of organizational learning is to enhance both the quality and quantity of organizational outputs, which leads to increased sales, customer support, and a broader customer base—key factors for sustained success. Continuous learning and rapid knowledge acquisition not only improve strategic capacity, but also help organizations maintain a competitive edge (Lloria & Moreno-Luzon, 2014). Integrating insights from organizational learning support and the RBV theoretical framework, these scholars examine how learning-driven RBM can lead to sustainable organizational performance. Effective utilization and enhancement of internal resources, such as human capital, system structures, and managerial capabilities, significantly contribute to profit generation, competitive advantage, and overall business performance (Banmairuroy et al., 2022; Lahiri & Kedia, 2009). Moreover, RBM facilitates innovation, effective corporate knowledge management, and the development of adaptable strategies (Arias et al., 2022). Supporting innovation is crucial for firms to develop and enhance their internal capabilities, allowing them to confidently address market and competitive challenges, ultimately leading to stable performance (Do et al., 2022; Rajapathirana & Hui, 2018; Roxas & Chadee, 2013; Truong & Nguyen, 2024). Given the strong empirical support for the impact of organizational learning on various aspects of performance, it is reasonable to hypothesize that:

H_7: *Organizational learning support positively affects organizational performance*.

Figure 1 presents the conceptual framework underpinning this study, which is rooted in RBV theory and integrates key constructs of organizational learning support, RBM, and organizational performance. The framework posits that organizational learning support enhances RBM practices. Additionally, the model hypothesizes that organizational learning support directly influences organizational performance. The framework encapsulates all seven hypotheses, including the relationships between organizational learning support, RBM, co-creation practices, environmental policy, and their combined effects on organizational performance.

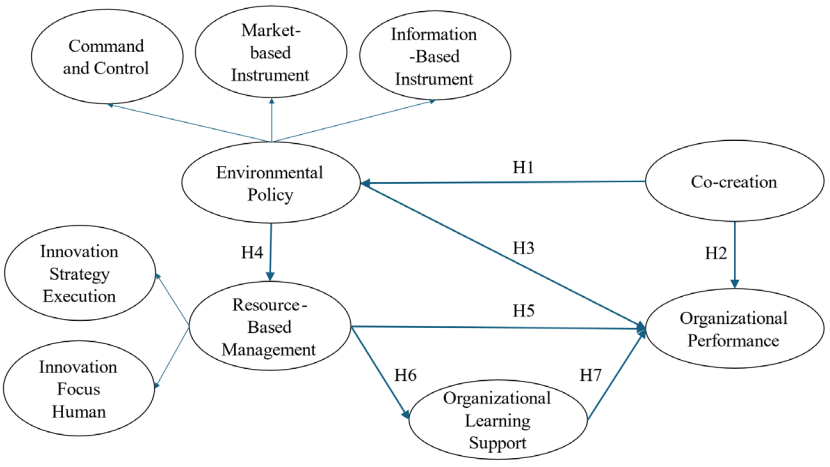

Fig. 1. The research model

3. Methodology

3.1. Data collection

Surveys were utilized as the primary data collection method due to their efficacy in capturing a wide range of perceptions and experiences across a large population (Levitt et al., 2018). In recognition of the specific cultural and organizational context of Vietnam, the questionnaire was carefully adapted to ensure its relevance. The translation process, accompanied by subsequent adjustments, was guided by insights from local experts; these insights were crucial in ensuring that the survey content was both culturally appropriate and theoretically robust. To refine the instrument further, two focus group discussions were conducted with six directors from various organizations and two government officers from industrial zone management boards. Feedback from these discussions was instrumental in tailoring the questionnaire to the Vietnamese research context. Additionally, a pilot test involving 35 participants was conducted, leading to minor adjustments that ensured the questionnaire's clarity and relevance in the research environment. The specific changes made during this process are detailed in Table 2. With the support of the Dong Nai Province industrial zone management boards, access was granted to a list of 900 potential organizations. From January to June 2023, the questionnaire was randomly distributed to 500 organizations, resulting in 321 valid responses for analysis.

3.2 Measurement

Validated scales and methodologies drawn from prior research were employed to develop a meticulously crafted questionnaire, ensuring the reliability and validity of the measurement instrument. Participants were asked to respond to each item using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), providing valuable data on their perceptions. During preliminary interviews, feedback suggested a need to enhance the alignment between the technical complexity factor and corresponding statements in the Vietnamese context. As a result, the measurement scale was modified to ensure linguistic and content suitability, leading to its refinement. The results of latent variable measurement are presented in Figure 1 and Table 2, which are structured according to the scales associated with these variables. This structure facilitates comprehensive examination of the factor loadings which delineate the specific attributes of these variables, thereby offering important insights. Consistent with the methodological approaches of previous studies (Do et al., 2022; Oke et al., 2012), this study integrated four items to evaluate organizational learning support (OLS) and nine items to assess Resource-Based Management (RBM). Additionally, ten items pertaining to environmental policy (EP) were adapted from Liao (2018), while four items relating to co-creation (COR) were incorporated based on Huynh et al. (2023). To measure organizational performance (OP), a five-item scale developed by Truong and Nguyen (2024) was utilized.

3.3. Data analysis

The Partial Least Squares Structural Equation Modeling (PLS-SEM) approach was selected for this study due to its demonstrable effectiveness and flexibility in addressing complex research objectives. Specifically, PLS-SEM is particularly advantageous for handling intricate models with multiple interactions at the construct level, a common scenario in social science research (Hair et al., 2019). The primary objective of this study was to explore the interrelationships among various latent variables within a complex theoretical framework. In this context, PLS-SEM was considered more appropriate than Covariance-Based SEM (CB-SEM) for several compelling reasons.

First, PLS-SEM is well-suited to models that involve a large number of constructs and indicators, allowing for a detailed exploration of the causal relationships among independent and dependent variables (Hair & Alamer, 2022; Marcoulides & Chin, 2013). Furthermore, PLS-SEM is particularly robust when applied to research which is exploratory in scope, focusing on prediction and theory development rather than theory confirmation. Unlike CB-SEM, which imposes stricter requirements on sample size and data normality, PLS-SEM offers greater flexibility, making it a more practical choice given the specific characteristics of this study's data. Thus, the decision to utilize PLS-SEM was driven by its superior ability to model complex relationships, its accommodation of non-normal data, and its alignment with the study's emphasis on hypothesis testing and exploratory analysis. Consequently, PLS-SEM was determined to be the most suitable method for achieving the research objectives.

4. Results

Table 1 presents a comprehensive overview of the sample's characteristics, as derived by the data collection process.

Table 1
Descriptive statistics

Characteristics	Respondents (N=321)	Percentage (%)
Organizational size		
From 51–99 employees	37	11.53
From 100–200 employees	106	33.02
From 201–300 employees	90	28.04
Over 300 employees	88	27.41
Industry		
Electricity and water supply	26	8.10
Finance and banking	85	26.48
Logistic and supply chain	11	3.42
Manufacturing	90	28.04
Warehouse, factory, land for rent	109	33.96
Education		
Undergraduate degree	236	73.52
Graduate degree	85	26.48
Position		
Board of Directors	68	21.18
Executive Manager	253	78.82

Source: Authors' work

4.1. Convergent and discriminant validity

The reliability of individual items is contingent upon the magnitudes of the outer loadings associated with each respective item. Outer loadings with a magnitude equal to or greater than 0.7 are considered to be highly satisfactory. However, it is recommended that an outer loading of 0.5 should be considered an acceptable threshold for interpretation (Sarstedt et al., 2022). It can be inferred that the external load coefficients have been duly met. The acceptability of reliability is determined by the extent to which the values of Cronbach's Alpha and composite reliability (CR) exceed the established threshold of 0.7 (Khan et al., 2019). Our model demonstrates a high level of internal consistency, and thus our findings may be particularly important in the context of organizational studies in Vietnam. Concentrating on Table 2, the internal consistency of the constructs is demonstrated by the threshold values, which range from 0.873 to 0.956. Furthermore, to attain item convergence, the Average Variance Extracted (AVE) value should exceed the threshold of 0.5 (Hair et al., 2020). The minimum AVE value obtained for our results was 0.534, suggesting that there was a satisfactory level of convergence among the variables under investigation. Regarding discriminant validity, the square root of the AVE for each construct must surpass the correlations between said construct and other constructs within the model (Fornell & Larcker, 1981). As evidenced by the data presented in Table 3, our results suggest that the condition under investigation has been successfully fulfilled.

Table 2

Measurement

Measurement	Modification	Loadings
Organizational Learning Support (OLS) (α = 0.867, CR = 0.872, AVE = 0.716)		
OLS1: The enterprise in which I am employed actively procures and disseminates copious amounts of novel and pertinent information in order to establish a distinct competitive edge.	Minor change	0.866
OLS2: Workers are trained in important competencies and skills that bring competitive advantage.		0.875
OLS3: I believe that the emergence of novel sources of information significantly influences the endeavor to enhance the competitiveness of enterprises.		0.799
OLS4: Enterprises are always intrigued by the prospect of exchanging and disseminating information and expertise.		0.843
Resource-Based Management (RBM) (α = 0.956, CR = 0.956, AVE = 0.740)		
RBM1: Organizational executives devote a lot of time and money to fostering innovation.	Minor Change	0.863
RBM2: Companies prioritize teamwork and seek out innovative ideas from outside collaborators and strategic alliances.		0.869
RBM3: Innovation and creativity are fostered in the workplace by organizational leadership.		0.849
RBM4: Businesses invest enough cash in innovation initiatives.		0.865
RBM5: Organizational human resource management policies support a creative and innovative culture.		0.858
RBM6: The system of rewards encourages creativity and innovation.		0.860
RBM7: Creativity and innovation are important factors in an organization's recruiting and promotion procedures.		0.852
RBM8: Innovation-creation programs are part of organizational training and development initiatives.		0.865
RBM9: Workers need to set clear goals for innovation.		0.849
Environmental Policy (EP) (α = 0.904, CR = 0.917, AVE = 0.533)		
EP1: Businesses that fail to comply with environmental rules will face severe penalties as stipulated by the legislation.	Major Change	0.782
EP2: Enterprises are required to adhere to waste treatment regulations as mandated by the law.		0.787
EP3: Enterprises are required to adhere carefully to technical requirements aimed at limiting environmental contamination.		0.803
EP4: Enterprises get tax exemptions and discounts when they adopt measures to reduce environmental pollution.		0.616
EP5: Enterprises are eligible for government incentives when they undertake measures to reduce environmental pollution.		0.597
EP6: Enterprises that release trash resulting in environmental contamination will no longer get special tax rates.		0.660
EP7: Enterprises are obligated to pay penalties that correspond to the severity of their environmental pollution breaches.		0.650
EP8: Mandate that enterprises promptly disclose environmental-related business information.		0.799
EP9: The firm has obtained certification for its environmental quality management requirements.		0.757
EP10: Promote the active engagement of corporations in environmental conservation initiatives, rather than just complying with demands.		0.803
Co-creation (COR) (α = 0.954, CR = 0.957, AVE = 0.879)		
COR1: Stakeholders and organizations collaborate to plan the creation of new goods and services.	Minor Change	0.917
COR2: Innovators actively contribute to the creation of new goods and services.		0.954
COR3: Stakeholders support the use of emerging technology.		0.944
COR4: Stakeholders have faith in their ability to collaborate with your employees.		0.934
Organizational Performance (OP) (α = 0.911, CR = 0.957, AVE = 0.735)		
OP1: The company that can achieve sustainable development.	Minor Change	0.870
OP2: The quality of organizational goods and services improves with time.		0.875
OP3: The company has a strong track record in its field.		0.845
OP4: Customers value the integrity of organizational products and services.		0.852
OP5: The organization has experienced a positive trend in sales growth over time.		0.844

Note: CR (composite reliability), AVE (average variance extracted), α (Cronbach's alpha).
Source: Authors' work

Table 3

Fornell-Larcker

Heterotrait-monotrait ratio (HTMT)

	COR	CC	RBI	IFH	ISE	MBI	OLS	OP
Cocreation (COR)								
Command and Control (CC)	0.573							
Information-Based Instrument (RBI)	0.563	0.885						
Innovation Focus Human (IFH)	0.724	0.843	0.673					
Innovation Strategy Execution (ISE)	0.801	0.665	0.734	0.865				
Market-Based Instrument (MBI)	0.302	0.541	0.638	0.349	0.376			
Organizational Learning Support (OLS)	0.773	0.686	0.651	0.839	0.842	0.307		
Organizational Performance (OP)	0.737	0.689	0.596	0.723	0.794	0.337	0.920	

Fornell-Larcker criterion

Variables	COR	EP	OLS	OP	RBM
Co-creation (COR)	0.937				
Environmental Policy (EP)	0.509	0.730			
Organizational Learning Support (OLS)	0.704	0.551	0.846		
Organizational Performance (OP)	0.689	0.562	0.823	0.858	
Resource-Based Management (RBM)	0.762	0.649	0.796	0.741	0.860

Source: Authors' work

4.2. Structural Equation Model

Fig. 2 presents the R-squared values denoting the effects of environmental policy, resource-based management, organizational learning support, and organizational performance, which were observed to be 0.259, 0.421, 0.634, and 0.713, respectively. These values are indicative of the effectiveness of the model. The post-test hypotheses are presented in Fig. 2 and Table 4. The results of this investigation indicate that all conjectures put forth were substantiated with statistical significance (p-value < 0.05). This finding is noteworthy as it highlights the crucial role these variables play in enhancing organizational outcomes. Furthermore, this research endeavor successfully discerned the potential involvement of RBM as a mediator in the intricate interplay between co-creation, environmental policy, organizational learning support, and the resultant impact on organizational performance. The findings of the study reveal a mediation influence that partially mediated the relationship between the variables under investigation. Notably, the statistically non-significant link between RBM and organizational performance challenges the prevailing assumption that resource-based management directly drives performance outcomes. This suggests that the impact of RBM may be more nuanced, potentially mediated by other factors such as organizational learning support, for which a much stronger direct effect on performance was found.

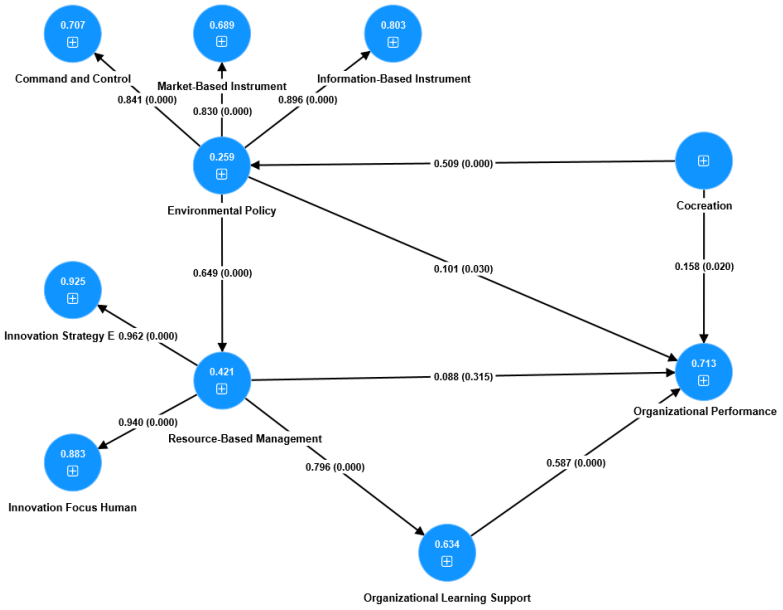

Fig. 2. Testing results
Source: Created by the authors.

Table 4
Hypothesis testing

Direct effects				
Hypothesis	Coefficient	T- Values	P-value	Results
H1. COR → EP	0.509	10.047	0.000	Accepted
H2. COR → OP	0.158	2.332	0.020	Accepted
H3. EP → OP	0.101	2.172	0.030	Accepted
H4. EP → RBM	0.649	15.078	0.000	Accepted
H5. RBM → OP	0.088	1.005	0.315	Rejected
H6. RBM → OLS	0.796	27.132	0.000	Accepted
H7. OLS → OP	0.587	8.052	0.000	Accepted

Indirect effects					
Hypothesis	Type	Estimates	T-values	P-values	Remarks
H2. COR → OP	Direct	0.158	2.332	0.020	Supported
COR → EP → OP	Indirect	0.052	2.099	0.036	Complementary (partial mediation)

Notes: Cocreation (COR), Environmental Policy (EP), Organizational Learning Support (OLS), Organizational Performance (OP), Resource-Based Management (RBM).
Source: Authors' work

4.3. Hypothesis testing

Our hypothesis testing revealed several key insights that contribute to the theoretical framework of organization performance. Table 4 and Fig. 2 present the outcomes of hypothesis testing, providing the residual covariance matrix obtained by eliminating the impacts of control variables. Firstly, the structural model shows that co-creation has a significantly positive impact on environmental policy and organizational performance, with significant path coefficients: ($\beta = 0.509$; $p < 0.000$) and ($\beta = 0.158$, $p < 0.020$), respectively. Therefore, H1 and H2 are supported, suggesting that stakeholder engagement in the co-creation process is vital for the achievement of sustainable business outcomes. Secondly, these findings reveal that environmental policy has a positive effect on RBM ($\beta = 0.649$, $p < 0.030$) and organizational performance ($\beta = 0.101$, $p < 0.000$), and that there is a positive association between organizational learning support and organizational performance ($\beta = 0.587$; $p < 0.000$). Consequently, H3, H4, and H7 are supported by this model. Finally, RBM was found to have a statistically non-significant relationship with organizational performance ($\beta = 0.088$, $p > 0.315$), while organizational learning support had a significant positive effect ($\beta = 0.796$, $p < 0.000$) on organizational performance. Consequently, H5 is unsupported, and H6 is supported. The absence of a significant link between RBM and organizational performance suggests that the effectiveness of RBM strategies may depend on the presence of supportive factors, such as a strong organizational learning culture.

4.4 Mediation effect

According to the results of analysis of the mediating effect, as presented in Table 4, environmental policy plays a partial mediating role in the linkages between co-creation and organizational and organizational performance.

5. Discussion and contributions

5.1. Discussion

The findings of this study underscore the significant role that co-creation plays in enhancing Resource-Based Management (RBM), environmental policy, and organizational performance. Specifically, our results align with previous research indicating that organizations actively engaging in co-creation processes experience improved outcomes, highlighting the role of these processes as a critical driver of success (Frow et al., 2015; Huynh et al., 2023; Li et al., 2020). Furthermore, this study extends existing literature by demonstrating that co-creation not only bolsters RBM and organizational performance but also significantly influences the formulation and effectiveness of environmental policies. These findings are consistent with previous studies indicating that co-creation fosters sustainable innovation, particularly in environmentally-focused initiatives (Giacomarra et al., 2020; Todeschini et al., 2020). Additionally, studies by Sumrin et al. (2021) and Pacheco-Vega (2020) further reinforce that the integration of co-creation with environmental policy enhances the strategic management of resources, driving both innovation and performance.

The results are in line with (Reed et al., 2014) and (Wood et al., 2015), who argue that co-creation enhances stakeholder engagement, leading to more effective and inclusive environmental policies. Similarly, Wibeck et al. (2022) emphasize that collaborative approaches, including co-creation, are critical for tackling complex environmental challenges. This aligns with our finding that co-creation significantly influences the effectiveness of environmental policies, which, in turn, enhance organizational performance. Kim et al. (2020) further support this by demonstrating that organizations which leverage co-creation within their strategic frameworks are better positioned to implement effective environmental policies, ultimately driving superior performance. Additionally, Steinebach (2022) and Gupta et al. (2021) highlight the role of environmental policies in fostering innovation and aligning RBM practices with sustainable development goals, which is reflected in their positive impact on organizational outcomes.

The study also confirms the significant impact of environmental policy on both RBM and organizational performance. This finding corroborates prior research demonstrating that robust environmental policies often lead to enhanced innovation and improved performance through the adoption of sustainable practices (Fu et al., 2021; García-Granero et al., 2018; Sáez-Martínez et al., 2016). However, in contrast to studies that emphasize a direct and strong link between RBM and performance (Barney, 1991), our findings suggest a statistically non-significant relationship between these variables. This divergence implies that RBM strategies may require the support of additional factors, such as organizational learning, to fully realize their potential impact on performance. For instance, Liu et al. (2021) and Ouyang et al. (2020) suggest that environmental regulations, when aligned with RBM, can significantly enhance organizational adaptability and innovation, which are critical for performance improvement.

The strong positive relationship between organizational learning support and both RBM and organizational performance is well-supported by existing literature. Previous studies have consistently shown that supportive learning environments enhance strategic resource management and drive innovation, which in turn leads to superior performance outcomes (Mubarik et al., 2019; Ode & Ayavoo, 2020; Truong & Nguyen, 2024). This aligns with previous findings emphasizing that organizational learning is crucial

for maintaining competitive advantage in rapidly changing environments (Blaique et al., 2024; Do et al., 2022). Our finding of a significant mediation effect of environmental policy between co-creation and organizational performance further underscores the importance of integrating these elements into a holistic strategic framework. Qian et al. (2023) also highlight that active learning processes within organizations contribute to more stable and effective management practices, which supports the view that organizational learning is a key enabler of RBM success.

Our findings also suggest that a comprehensive approach integrating co-creation, environmental policy, and organizational learning support is essential for sustaining long-term organizational success. This study contributes to the ongoing discourse on strategic management by offering new insights into the mechanisms through which co-creation and environmental policies influence RBM and organizational performance. It also aligns with the prior research argument that leveraging unique, hard-to-replicate resources through RBM is critical for achieving sustained competitive advantage (Collins, 2021; Ainuddin et al., 2007; Fernandes et al., 2022)

Furthermore, our findings align with prior studies that emphasize the importance of human resources and organizational learning in driving innovation and strategic execution (Arias et al., 2022; Chen et al., 2014; Jaw & Liu, 2003). These elements are fundamental to the successful implementation of RBM strategies: our study demonstrates that organizational learning support significantly enhances RBM effectiveness. This connection underscores that in the absence of a strong emphasis on learning and development within the workforce, RBM strategies may fail to achieve their full potential in improving organizational performance.

Finally, our finding that organizational learning support positively impacts organizational performance is consistent with previous studies (Aragón-Correa et al., 2007; Banmairuroy et al., 2022; Lin & Kuo, 2007; Lin et al., 2016; Lloria & Moreno-Luzon, 2014). These studies argue that continuous learning and adaptation are critical for sustaining performance in dynamic environments. Our results reinforce this view by demonstrating that organizations which prioritize ongoing learning and adaptation are better equipped to navigate the challenges of Industry 4.0, and will thereby achieve superior performance outcomes.

5.2. Theoretical contributions

This study makes important theoretical contributions by expanding the RBV framework within the context of Industry 4.0, particularly through the lens of RBM. The integration of organizational learning support, environmental policy, and co-creation into the RBV framework offers a more comprehensive understanding of how these elements collectively influence organizational performance.

The study extends the RBV framework by highlighting the critical role of dynamic capabilities, particularly in rapidly evolving environments like Industry 4.0. While traditional RBV emphasizes the management of unique and valuable resources to attain competitive advantage (Barney, 1991), this research demonstrates that continuous learning and adaptation are essential for sustaining this advantage in dynamic contexts (Ode & Ayavoo, 2020; Mubarik et al., 2019).

The study also underscores the role of environmental policy as both a regulatory framework and a strategic enabler within RBV. By categorizing environmental policies as command-and-control, market-based, or information-based instruments, the research provides a nuanced understanding of the impact of these policies on organizational strategies and performance, building on previous studies of environmental regulation and competitive advantage (Pacheco-Vega, 2020; Steinebach, 2022).

In addition, including co-creation within the RBM framework underscores the important role of collaborative innovation in the achievement of sustainable organizational performance. This study shows that co-creation fosters innovation and enhances the effectiveness of environmental policy, contributing to better organizational outcomes and aligning with recent literature on stakeholder engagement and collaborative approaches (Reed et al., 2014; Wibeck et al., 2022).

Finally, the study demonstrates the interconnectedness of RBM, organizational learning support, and environmental policy within the RBV framework. It suggests that for RBM to be truly effective, it must be supported by a strong learning culture and proactive environmental policies. This integrated approach offers a more holistic understanding of how firms can leverage their resources to achieve sustained competitive advantage and superior performance in the context of Industry 4.0.

5.3. Practical implications

This study offers valuable practical guidance for Vietnamese businesses navigating the challenges and opportunities of Industry 4.0 within the context of RBM. Specifically, the findings can help organizations develop strategies to optimize technology and data usage, thereby enhancing resource efficiency and maintaining competitiveness. Emphasizing innovation strategies and human-centric approaches is crucial for building a culture of innovation and fostering employee creativity, which in turn cultivates a flexible and dynamic work environment. Enhancing organizational learning support is equally essential for developing the skills

and knowledge necessary to adapt to the rapidly evolving technological landscape. This can be effectively achieved through targeted training programs, knowledge-sharing platforms, and continuous learning initiatives.

Moreover, implementing robust environmental policies that align with global sustainability goals can help organizations reduce their environmental impact and strengthen their reputation as responsible corporate citizens. Integrating co-creation and environmental policy into organizational strategies is critical to achieving long-term sustainability and success. Additionally, fostering collaborative innovation by implementing virtual collaboration projects, open innovation initiatives, and leveraging digital ecosystems can significantly enhance collective creativity. Consequently, this study provides a strategic roadmap for the alignment of business practices with sustainable development goals, thereby contributing to a more sustainable and resilient future.

6. Conclusion and limitations

6.1. Conclusion

This research advances RBV by extending it into RBM and focusing on executive- and human-centric innovation strategies. By integrating organizational learning support, environmental policy (including command-and-control measures, market-based instruments, and information-based tools), and co-creation, the study provides a comprehensive perspective on how these elements collectively influence organizational performance. The findings underscore the critical role of co-creation and environmental policy in enhancing performance. In contrast, the absence of a direct relationship between RBM and performance suggests that RBM's effectiveness is contingent upon its integration with strategic factors such as organizational learning and environmental initiatives. This challenges conventional assumptions within the RBV framework and highlights the necessity of aligning resource management with innovation, learning, and environmental stewardship to achieve sustainable competitive advantage.

For Vietnamese organizations, and those in similar contexts, this research offers a nuanced understanding of how to navigate the complexities of Industry 4.0 by applying a more integrated approach to resource management. Moreover, the study provides practical insights for managers and policymakers, emphasizing the importance of co-creation, robust environmental policies, and a strong learning orientation as essential drivers of organizational success. As firms face the dual challenges of rapid technological change and the imperative to introduce sustainable practices, this study offers a strategic roadmap for achieving long-term resilience and contributing meaningfully to sustainable development goals.

6.2. Limitations

This study offers valuable theoretical and managerial insights, but certain limitations must be acknowledged to inform future research. Firstly, the dataset's origin in the emerging market of Vietnam raises questions about the generalizability of the findings to different contexts, emphasizing the need for replication studies across various developed and developing economies. Secondly, the findings may have limited generalizability across diverse industries or organizational contexts. The effectiveness of RBM and the impacts of co-creation, environmental policy, and organizational learning support can vary significantly across specific industries in terms of distinguishing business strategies, overcoming environmental issues, and gaining management support. Finally, it is crucial to recognize the potential contingent effects of firm characteristics like ownership structure, industry sector, and geographic region, prompting a need for validation in diverse settings to attain a comprehensive understanding.

Acknowledgement

This research is funded by Vietnam National University Ho Chi Minh City (VNU-HCM) under grant number B2022-28-04.

References

Ainuddin, R. A., Beamish, P. W., Hulland, J. S., & Rouse, M. J. (2007). Resource attributes and firm performance in international joint ventures. Journal of World Business, 42(1), 47–60. https://doi.org/10.1016/J.JWB.2006.11.001

Aragón-Correa, J. A., García-Morales, V. J., & Cordón-Pozo, E. (2007). Leadership and organizational learning's role on innovation and performance: Lessons from Spain. *Industrial Marketing Management*, *36*(3), 349–359. https://doi.org/10.1016/J.INDMARMAN.2005.09.006

Arias, J., Laksá, U., Fonseca, B. D., Diallo, M., Brahim, K., Rodríguez, A., Doblado, S. M., Galvão, J. A., Viðarsson, J. R., & Friðriksdóttir, R. (2022). Results-based management in practice: Lessons learnt and policy recommendations from the implementation of RBM in European fisheries outside Europe. *Marine Policy*, *139*, 105038. https://doi.org/10.1016/j.marpol.2022.105038

Baldursson, F. M., & von der Fehr, N.-H. M. (2004). Price volatility and risk exposure: on market-based environmental policy instruments. *Journal of Environmental Economics and Management*, *48*(1), 682–704. https://doi.org/10.1016/j.jeem.2003.06.004

Banmairuroy, W., Kritjaroen, T., & Homsombat, W. (2022). The effect of knowledge-oriented leadership and human resource development on sustainable competitive advantage through organizational innovation's component factors: Evidence from Thailand 's new S- curve industries. *Asia Pacific Management Review*, *27*(3), 200–209. https://doi.org/10.1016/j.apmrv.2021.09.001

Barney, J. (1991). Special Theory Forum The Resource-Based Model of the Firm: Origins, Implications, and Prospects. *Journal of Management*, *17*(1), 97–98. https://doi.org/10.1177/014920639101700107

Barney, J. B., & Arikan, A. M. (2005). The Resource-based View. In *The Blackwell Handbook of Strategic Management* (pp. 123–182). Wiley. https://doi.org/10.1111/b.9780631218616.2006.00006.x

Barney, Jay. (2001). Is the Resource-Based "View" a Useful Perspective for Strategic Management Research? Yes. *Academy of Management Review*, *26*(1), 41–56. https://doi.org/10.5465/amr.2001.4011938

Barrett, S., & Stavins, R. (2003). Increasing Participation and Compliance in International Climate Change Agreements. *International Environmental Agreements: Politics, Law and Economics*, *3*(4), 349–376. https://doi.org/10.1023/B:INEA.0000005767.67689.28

Bergquist, A.-K., Söderholm, K., Kinneryd, H., Lindmark, M., & Söderholm, P. (2013). Command-and-control revisited: Environmental compliance and technological change in Swedish industry 1970–1990. *Ecological Economics*, *85*, 6–19. https://doi.org/10.1016/j.ecolecon.2012.10.007

Blaique, L., Abu Salim, T., & Mir, F. A. (2024). Does human capital mediate the relationship between digital competence and service innovation capability? Evidence from the UAE during covid-19 pandemic. *International Journal of Innovation Science*, *16*(4), 709–730. https://doi.org/10.1108/IJIS-11-2022-0214

Böcher, M. (2012). A theoretical framework for explaining the choice of instruments in environmental policy. *Forest Policy and Economics*, *16*, 14–22. https://doi.org/10.1016/j.forpol.2011.03.012

Bowen, F., Tang, S., & Panagiotopoulos, P. (2020). A classification of information-based environmental regulation: Voluntariness, compliance and beyond. *Science of The Total Environment*, *712*, 135571. https://doi.org/10.1016/J.SCITOTENV.2019.135571

Boxall, P., & Purcell, J. (2000). Strategic human resource management: where have we come from and where should we be going? *International Journal of Management Reviews*, *2*(2), 183–203. https://doi.org/10.1111/1468-2370.00037

Chen, Y., Tang, G., Jin, J., Xie, Q., & Li, J. (2014). CEOs' Transformational Leadership and Product Innovation Performance: The Roles of Corporate Entrepreneurship and Technology Orientation. *Journal of Product Innovation Management*, *31*(S1), 2–17. https://doi.org/10.1111/JPIM.12188

Collins, C. J. (2021). Expanding the resource based view model of strategic human resource management. *The International Journal of Human Resource Management*, *32*(2), 331–358. https://doi.org/10.1080/09585192.2019.1711442

Delmas, M. A. (2002). The diffusion of environmental management standards in Europe and in the United States: An institutional perspective. *Policy Sciences*, *35*(1), 91–119. https://doi.org/10.1023/A:1016108804453

Do, H., Budhwar, P., Shipton, H., Nguyen, H. D., & Nguyen, B. (2022). Building organizational resilience, innovation through resource-based management initiatives, organizational learning and environmental dynamism. *Journal of Business Research*, *141*, 808–821. https://doi.org/10.1016/j.jbusres.2021.11.090

El Baz, J., & Ruel, S. (2021). Can supply chain risk management practices mitigate the disruption impacts on supply chains' resilience and robustness? Evidence from an empirical survey in a COVID-19 outbreak era. *International Journal of Production Economics*, *233*, 107972. https://doi.org/10.1016/j.ijpe.2020.107972

Fernandes, C. I., Veiga, P. M., Ferreira, J. J., Rammal, H. G., & Pereira, V. (2022). Assessing strategic leadership in organizations: Using bibliometric data to develop a holistic model. *Journal of Business Research*, *141*, 646–655. https://doi.org/10.1016/J.JBUSRES.2021.11.067

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39. https://doi.org/10.2307/3151312

Frow, P., Nenonen, S., Payne, A., & Storbacka, K. (2015). Managing Co-creation Design: A Strategic Approach to Innovation. *British Journal of Management*, *26*(3), 463–483. https://doi.org/10.1111/1467-8551.12087

Fu, S., Ma, Z., Ni, B., Peng, J., Zhang, L., & Fu, Q. (2021). Research on the spatial differences of pollution-intensive industry transfer under the environmental regulation in China. *Ecological Indicators*, *129*, 107921. https://doi.org/10.1016/J.ECOLIND.2021.107921

García-Granero, E. M., Piedra-Muñoz, L., & Galdeano-Gómez, E. (2018). Eco-innovation measurement: A review of firm performance indicators. *Journal of Cleaner Production*, *191*, 304–317. https://doi.org/10.1016/J.JCLEPRO.2018.04.215

García-Morales, V. J., Jiménez-Barrionuevo, M. M., & Gutiérrez-Gutiérrez, L. (2012). Transformational leadership influence on organizational performance through organizational learning and innovation. *Journal of Business Research*, *65*(7), 1040–1050. https://doi.org/10.1016/j.jbusres.2011.03.005

Giacomarra, M., Crescimanno, M., Sakka, G., & Galati, A. (2020). Stakeholder engagement toward value co-creation in the F&B packaging industry. *EuroMed Journal of Business*, *15*(3), 315–331. https://doi.org/10.1108/EMJB-06-2019-0077/FULL/XML

Gouillart, F. J. (2014). The race to implement co-creation of value with stakeholders: five approaches to competitive advantage. *Strategy & Leadership*, *42*(1), 2–8. https://doi.org/10.1108/SL-09-2013-0071

Gupta, H., Kumar, A., & Wasan, P. (2021). Industry 4.0, cleaner production and circular economy: An integrative framework for evaluating ethical and sustainable business performance of manufacturing organizations. *Journal of Cleaner Production*, *295*, 126253. https://doi.org/10.1016/j.jclepro.2021.126253

Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, *1*(3), 100027. https://doi.org/10.1016/J.RMAL.2022.100027

Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, *109*, 101–110. https://doi.org/10.1016/j.jbusres.2019.11.069

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Haneda, S., & Ito, K. (2018). Organizational and human resource management and innovation: Which management practices are linked to product and/or process innovation? *Research Policy*, *47*(1), 194–208. https://doi.org/10.1016/j.respol.2017.10.008

He, Y., & Zheng, H. (2023). How does environmental regulation affect industrial structure upgrading? Evidence from prefecture-level cities in China. *Journal of Environmental Management*, *331*, 117267. https://doi.org/10.1016/j.jenvman.2023.117267

Hille, E., Althammer, W., & Diederich, H. (2020). Environmental regulation and innovation in renewable energy technologies: Does the policy instrument matter? *Technological Forecasting and Social Change*, *153*, 119921. https://doi.org/10.1016/j.techfore.2020.119921

Hofstad, H., Sørensen, E., Torfing, J., & Vedeld, T. (2022). Designing and leading collaborative urban climate governance: Comparative experiences of co-creation from Copenhagen and Oslo. *Environmental Policy and Governance*, *32*(3), 203–216. https://doi.org/10.1002/EET.1984

Hult, G. T. M., Ketchen, D. J., & Nichols, E. L. (2003). Organizational learning as a strategic resource in supply management. *Journal of Operations Management*, *21*(5), 541–556. https://doi.org/10.1016/J.JOM.2003.02.001

Huynh, T. N., Van Nguyen, P., Nguyen, Q. N., & Dinh, P. U. (2023). Technology innovation, technology complexity, and co-creation effects on organizational performance: The role of government influence and co-creation. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(4), 100150. https://doi.org/10.1016/j.joitmc.2023.100150

Ind, N., & Coates, N. (2013). The meanings of co-creation. *European Business Review*, *25*(1), 86–95. https://doi.org/10.1108/09555341311287754

Jaw, B. S., & Liu, W. (2003). Promoting organizational learning and self-renewal in Taiwanese companies: The role of HRM. *Human Resource Management*, *42*(3), 223–241. https://doi.org/10.1002/HRM.10082

Jeong, Y., & Kim, M. (2022). Effects of perceived organizational support and perceived organizational politics on organizational performance: Mediating role of differential treatment. *Asia Pacific Management Review*, *27*(3), 190–199. https://doi.org/10.1016/j.apmrv.2021.08.002

Khan, S. A. R., Sharif, A., Golpîra, H., & Kumar, A. (2019). A green ideology in Asian emerging economies: From environmental policy and sustainable development. *Sustainable Development*, *27*(6), 1063–1075. https://doi.org/10.1002/SD.1958

Kim, D., Moon, C. W., & Shin, J. (2018). Linkages between empowering leadership and subjective well-being and work performance via perceived organizational and co-worker support. *Leadership & Organization Development Journal*, *39*(7), 844–858. https://doi.org/10.1108/LODJ-06-2017-0173

Kim, D. W., Trimi, S., Hong, S. G., & Lim, S. (2020). Effects of co-creation on organizational performance of small and medium manufacturers. *Journal of Business Research*, *109*, 574–584. https://doi.org/10.1016/J.JBUSRES.2019.03.055

King, A. A., & Lenox, M. J. (2001). Does It Really Pay to Be Green? An Empirical Study of Firm Environmental and Financial Performance: An Empirical Study of Firm Environmental and Financial Performance. *Journal of Industrial Ecology*, *5*(1), 105–116. https://doi.org/10.1162/108819801753358526

Lahiri, S., & Kedia, B. L. (2009). The effects of internal resources and partnership quality on firm performance: An examination of Indian BPO providers. *Journal of International Management*, *15*(2), 209–224. https://doi.org/10.1016/J.INTMAN.2008.09.002

Latham, G. P., Stajkovic, A. D., & Locke, E. A. (2010). The Relevance and Viability of Subconscious Goals in the Workplace. *Journal of Management*, *36*(1), 234–255. https://doi.org/10.1177/0149206309350777

Levitt, H. M., Bamberg, M., Creswell, J. W., Frost, D. M., Josselson, R., & Suárez-Orozco, C. (2018). Journal article reporting standards for qualitative primary, qualitative meta-analytic, and mixed methods research in psychology: The APA Publications and Communications Board task force report. *American Psychologist*, *73*(1), 26–46. https://doi.org/10.1037/amp0000151

Li, K., Kim, D. J., Lang, K. R., Kauffman, R. J., & Naldi, M. (2020). How should we understand the digital economy in Asia? Critical assessment and research agenda. *Electronic Commerce Research and Applications*, *44*, 101004. https://doi.org/10.1016/j.elerap.2020.101004

Liao, Z. (2018). Environmental policy instruments, environmental innovation and the reputation of enterprises. *Journal of Cleaner Production*, *171*, 1111–1117. https://doi.org/10.1016/j.jclepro.2017.10.126

Lin, C. Y., & Kuo, T. H. (2007). The mediate effect of learning and knowledge on organizational performance. *Industrial Management and Data Systems*, *107*(7), 1066–1083. https://doi.org/10.1108/02635570710816748/FULL/XML

Lin, X., Spence, P. R., Sellnow, T. L., & Lachlan, K. A. (2016). Crisis communication, learning and responding: Best practices in social media. *Computers in Human Behavior*, *65*, 601–605. https://doi.org/10.1016/j.chb.2016.05.080

Liu, Y., Wang, A., & Wu, Y. (2021). Environmental regulation and green innovation: Evidence from China's new environmental protection law. *Journal of Cleaner Production*, *297*, 126698. https://doi.org/10.1016/j.jclepro.2021.126698

Lloria, M. B., & Moreno-Luzon, M. D. (2014). Organizational learning: Proposal of an integrative scale and research instrument. *Journal of Business Research*, *67*(5), 692–697. https://doi.org/10.1016/J.JBUSRES.2013.11.029

Lockett, A., Thompson, S., & Morgenstern, U. (2009). The development of the resource-based view of the firm: A critical appraisal. *International Journal of Management Reviews*, *11*(1), 9–28. https://doi.org/10.1111/j.1468-2370.2008.00252.x

Ma, X., Fan, D., Zhou, Y., & Yang, C. H. (2021). The impact of inspection on the sustainable production strategy: Environmental violation and abatement in emerging markets. *Transportation Research Part E: Logistics and Transportation Review*, *150*, 102294. https://doi.org/10.1016/J.TRE.2021.102294

Marcoulides, G. A., & Chin, W. W. (2013). You Write, but Others Read: Common Methodological Misunderstandings in PLS and Related Methods. *Springer Proceedings in Mathematics and Statistics*, *56*, 31–64. https://doi.org/10.1007/978-1-4614-8283-3_2/COVER

Martínez-Martínez, A., Cegarra-Navarro, J. G., & Garcia-Perez, A. (2023). Sustainability knowledge management and organisational learning in tourism: current approaches and areas for future development. *Journal of Sustainable Tourism*, *31*(4), 895–907. https://doi.org/10.1080/09669582.2022.2086560

Mubarik, M. S., Naghavi, N., & Mahmood, R. T. (2019). Intellectual capital, competitive advantage and the ambidexterity liaison. *Human Systems Management*, *38*(3), 267–277. https://doi.org/10.3233/HSM-180409

Naqshbandi, M. M., & Tabche, I. (2018). The interplay of leadership, absorptive capacity, and organizational learning culture in open innovation: Testing a moderated mediation model. *Technological Forecasting and Social Change*, *133*, 156–167. https://doi.org/10.1016/J.TECHFORE.2018.03.017

Ode, E., & Ayavoo, R. (2020). The mediating role of knowledge application in the relationship between knowledge management practices and firm innovation. *Journal of Innovation & Knowledge*, *5*(3), 210–218. https://doi.org/10.1016/j.jik.2019.08.002

Oke, A., Walumbwa, F. O., & Myers, A. (2012). Innovation Strategy, Human Resource Policy, and Firms' Revenue Growth: The Roles of Environmental Uncertainty and Innovation Performance*. *Decision Sciences*, *43*(2), 273–302. https://doi.org/10.1111/J.1540-5915.2011.00350.X

Ouyang, X., Li, Q., & Du, K. (2020). How does environmental regulation promote technological innovations in the industrial sector? Evidence from Chinese provincial panel data. *Energy Policy*, *139*, 111310. https://doi.org/10.1016/j.enpol.2020.111310

Ozcan, B., Tzeremes, P. G., & Tzeremes, N. G. (2020). Energy consumption, economic growth and environmental degradation in OECD countries. *Economic Modelling*, *84*, 203–213. https://doi.org/10.1016/j.econmod.2019.04.010

Pacheco-Vega, R. (2020). Environmental regulation, governance, and policy instruments, 20 years after the stick, carrot, and sermon typology. *Journal of Environmental Policy & Planning*, *22*(5), 620–635. https://doi.org/10.1080/1523908X.2020.1792862

Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, *18*(3), 5–14. https://doi.org/10.1002/dir.20015

Qian, C., Yu, K., Chen, N., Shen, W., Hou, S., & Lei, Y. (2023). When to adopt a new process management standard? An organizational learning perspective. *International Journal of Production Economics*, *263*, 108939. https://doi.org/10.1016/J.IJPE.2023.108939

Rajapathirana, R. P. J., & Hui, Y. (2018). Relationship between innovation capability, innovation type, and firm performance. *Journal of Innovation & Knowledge*, *3*(1), 44–55. https://doi.org/10.1016/J.JIK.2017.06.002

Ramaswamy, V., & Ozcan, K. (2018). What is co-creation? An interactional creation framework and its implications for value creation. *Journal of Business Research*, *84*, 196–205. https://doi.org/10.1016/j.jbusres.2017.11.027

Reed, M. S., Stringer, L. C., Fazey, I., Evely, A. C., & Kruijsen, J. H. J. (2014). Five principles for the practice of knowledge exchange in environmental management. *Journal of Environmental Management*, *146*, 337–345. https://doi.org/10.1016/J.JENVMAN.2014.07.021

Roxas, B., & Chadee, D. (2013). Effects of formal institutions on the performance of the tourism sector in the Philippines: The mediating role of entrepreneurial orientation. *Tourism Management*, *37*, 1–12. https://doi.org/10.1016/J.TOURMAN.2012.10.016

Sáez-Martínez, F. J., Lefebvre, G., Hernández, J. J., & Clark, J. H. (2016). Drivers of sustainable cleaner production and sustainable energy options. *Journal of Cleaner Production*, *138*(Part 1), 1–7. https://doi.org/10.1016/J.JCLEPRO.2016.08.094

Sarstedt, M., Hair, J. F., Pick, M., Liengaard, B. D., Radomir, L., & Ringle, C. M. (2022). Progress in partial least squares structural equation modeling use in marketing research in the last decade. *Psychology & Marketing*, *39*(5), 1035–1064. https://doi.org/10.1002/MAR.21640

Singh, S. K., Mazzucchelli, A., Vessal, S. R., & Solidoro, A. (2021). Knowledge-based HRM practices and innovation performance: Role of social capital and knowledge sharing. *Journal of International Management*, *27*(1), 100830. https://doi.org/10.1016/j.intman.2021.100830

Steinebach, Y. (2022). Instrument choice, implementation structures, and the effectiveness of environmental policies: A cross-national analysis. *Regulation & Governance*, *16*(1), 225–242. https://doi.org/10.1111/rego.12297

Sumrin, S., Gupta, S., Asaad, Yha., Wang, Y., Bhattacharya, S., & Foroudi, P. (2021). Eco-innovation for environment and waste prevention. *Journal of Business Research*, *122*, 627–639. https://doi.org/10.1016/j.jbusres.2020.08.001

Sutha, J. (2024), "Research agenda of employees' voluntary learning behavior: A review", Asia Pacific Management Review, Vol. 29 No. 2, pp. 215–225, doi: 10.1016/j.apmrv.2024.04.001.

Todeschini, B. V., Cortimiglia, M. N., & de Medeiros, J. F. (2020). Collaboration practices in the fashion industry: Environmentally sustainable innovations in the value chain. *Environmental Science & Policy*, *106*, 1–11. https://doi.org/10.1016/J.ENVSCI.2020.01.003

Tortorella, G., Giglio, R., Fogliatto, F. S., & Sawhney, R. (2019). Mediating role of learning organization on the relationship between total quality management and operational performance in Brazilian manufacturers. *Journal of Manufacturing Technology Management*, *31*(3), 524–541. https://doi.org/10.1108/JMTM-05-2019-0200

Truong, B. T. T., & Nguyen, P. V. (2024). Driving business performance through intellectual capital, absorptive capacity, and innovation: The mediating influence of environmental compliance and innovation. *Asia Pacific Management Review*, *29*(1), 64–75. https://doi.org/10.1016/j.apmrv.2023.06.004

Truong, B. T. T., Nguyen, P. V., Vrontis, D., & Inuwa, I. (2024). Exploring the interplay of intellectual capital, environmental compliance, innovation and social media usage in enhancing business performance in Vietnamese manufacturers. *Journal of Intellectual Capital*. https://doi.org/10.1108/JIC-10-2023-0233

Wang, Y., Sun, X., & Guo, X. (2019). Environmental regulation and green productivity growth: Empirical evidence on the Porter Hypothesis from OECD industrial sectors. *Energy Policy*, *132*, 611–619. https://doi.org/10.1016/j.enpol.2019.06.016

Wibeck, V., Eliasson, K., & Neset, T. S. (2022). Co-creation research for transformative times: Facilitating foresight capacity in view of global sustainability challenges. *Environmental Science & Policy*, *128*, 290–298. https://doi.org/10.1016/J.ENVSCI.2021.11.023

Williams, R. C. (2012). Growing state–federal conflicts in environmental policy: The role of market-based regulation. *Journal of Public Economics*, *96*(11–12), 1092–1099. https://doi.org/10.1016/J.JPUBECO.2011.08.003

Wójcik, P. (2015). Exploring Links Between Dynamic Capabilities Perspective and Resource-Based View: A Literature Overview. *International Journal of Management and Economics*, *45*(1), 83–107. https://doi.org/10.1515/ijme-2015-0017

Wood, K. A., Stillman, R. A., & Goss-Custard, J. D. (2015). Co-creation of individual-based models by practitioners and modellers to inform environmental decision-making. *Journal of Applied Ecology*, *52*(4), 810–815. https://doi.org/10.1111/1365-2664.12419

Zahra, S. A. (2021). The Resource-Based View, Resourcefulness, and Resource Management in Startup Firms: A Proposed Research Agenda. *Journal of Management*, *47*(7), 1841–1860. https://doi.org/10.1177/01492063211018505