



# Development of an integrative model for electronic vendor relationship management for improving technological innovation, social change and sustainability performance

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## ABSTRACT

Vendor relationship management (VRM) is a software tool that helps to provide seamless connectivity between buyer and supplier. With the rapid development of information and communication technology (ICT) most firms have migrated to electronic VRM (EVRM) capability. Only a few studies have examined how EVRM can impact the dynamic B2B capability of firms that combine technological and social innovation in support of transitions and the achievement of business goals. There are also very few interdisciplinary studies using a range of performance matrices to explore the relationship between firms' dynamic B2B capabilities and their sustainability performance, mediated through their various sustainable growth opportunities. In this context, this study aims to develop an integrative model for B2B EVRM capability and firm sustainability. With the help of dynamic capability view (DCV) theory and related literature, a theoretical model is proposed. This model was later validated using the covariance-based structural equation modeling technique (CB-SEM), in considering 378 responses from Indian firms. The study has three main findings. First, EVRM capability significantly and positively impacts B2B dynamic relationship capability between the firm and the vendors. Second, B2B dynamic relationship management capability has a significant and positive impact on firms' sustainability performance mediated through the financial, environmental, and operational performance of the firm. And third, Environmental dynamism (ED) plays a significant role as a moderator, influencing B2B dynamic relationship management capability.

## 1. Introduction

Business analysis is interdisciplinary in nature. In such research, scholars use several theories and models to interpret the business activities of firms. Researchers examine business activities through the lenses provided by disciplines such as sociology, economics, management, and psychology (Lindgreen et al., 2020). Digital technologies are exerting increasingly strong direct impacts on moves by businesses towards a sustainable economy (Kristoffersen et al., 2021). This type of interdisciplinary research combines concepts, ideas, frameworks, and methodologies from various disciplines, which helps to generate novel

ideas and knowledge and thus widens the scope of research (Markovic et al., 2021). The present study adopts an interdisciplinary research approach to chart its potential in the B2B marketing context. It develops an integrative model for B2B electronic vendor relationship management (EVRM) capability and firm sustainability. There is a business process that uses the help of external providers in delivering products and services to client firms. These external providers are called vendors. These processes and practices are known as vendor relationship management (VRM) activities. This special type of business activity is assisted by software tools that help client firms to engage with the vendors. The B2B relationship through VRM practices helps both client

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firms and vendors to improve their business relationship management activities. The VRM is considered an important business process: it improves service quality and helps both of the firms involved to minimise their costs (Faisal and Raza, 2016; Rajaeian et al., 2017).

Globalization is bringing about great changes in society, which must adapt to new digital technology (Ghosh et al., 2021; Skare and Soriano, 2021). The rapid development of information and communication technology (ICT) has motivated firms to improve their electronic VRM (EVRM) capability. The EVRM capabilities of client firms involved in B2B relationship management with their vendors have been highly valued for the enhancements they have brought to their business activities (Levina and Ross, 2003; Vargo and Lusch, 2011; Ahimbisibwe et al., 2017). EVRM activities have strengthened relationships between suppliers (vendors) and buyers (client firms), helping them both to establish an environment of trust that favours business growth (Su et al., 2016; Hensel et al., 2021). In recent years, the evaluation and management of suppliers have increased exponentially, driven by the need for strategic sourcing and customer satisfaction (Araz and Ozkarahan, 2007).

When client firms deal with vendors, they must sense, seize, and transform their abilities to select appropriate vendors in order to be able to address the volatile and dynamic market environments (Whitaker et al., 2010; Narayanan et al., 2011; Singhal et al., 2020) with the help of vendors. This idea accords with dynamic capability view (DCV) theory (Tece et al., 1997). The business style of client firm with EVRM activities is seen to impact the sustainable growth ability of client firms, to ensure their profitability and to fulfil their commitments to society and the environment (Kim and Seo, 2021; Chatterjee et al., 2021). The sustainable growth opportunities mainly comprise the improvement of the firm's financial, environmental, and operational ability to impact its sustainable performance. The client firms' dynamic ability to work effectively with their vendors depends on the dynamism of the external environment (Chen et al., 2015; Hernández-Trasobares and Murillo-Luna, 2020; Piccolo et al., 2021; Malyy et al., 2021). Prior studies have discussed how a turbulent external environment can improve or destroy a firm's critical competencies (Afuah, 2001; Teo and Liu, 2007; Wamba et al., 2019). There are limited studies that show how the EVRM capabilities could impact the firms' sustainable performance by improving the intermediate contextual factors like sensing, seizing, and transforming capabilities. Also, not many studies are available that show how by improving firms' different performance matrices under the moderating influence of environmental dynamism (ED) a firm can improve its sustainability performance. Therefore, the aim of this interdisciplinary study is to address the following research questions (RQs).

**RQ1.** : *What are the impacts of EVRM capability on the B2B relationship management between client and vendor firms in a dynamic business environment?*

**RQ2.** : *Is there any moderating impact of environmental dynamism between EVRM capability and firms' B2B dynamic relationship management capability?*

**RQ3.** : *How could EVRM capability influence firms' sustainability performance under varied contextual conditions?*

These RQs are capable of being addressed on the basis of 378 responses from the employees of firms based in India. The theoretical model so developed was tested by covariance based structural equation modeling analysis. For theoretical substantiation of the empirical findings, the DCV theory was used to explain the direct implications of the firm's EVRM capability for its B2B relationship management and the contextual conditions under which EVRM capability can be used to improve the firm's sustainability performance.

The remaining parts of the article are arranged as follows. Section 2 presents background studies followed by theoretical underpinning and development of hypotheses in Section 3. Next, Section 4 presents

research methodology followed by analysis of data and results in Section 5. Thereafter, Section 6 presents implications and limitations with future scope. The article ends with a comprehensive conclusion in Section 7.

## 2. Background studies

Vendor relationship management (VRM) helps the firms involved in B2B relationship management to effectively manage the relationship between client firms and vendors by introducing reliable practices and procedures by which they will interact (Michaelidou et al., 2011; Majumder et al., 2017; Bhattacharjee et al., 2021). The interactions between the vendor and client firms help the vendors to know the need of their client firms (Sharma et al., 2016; Vrontis et al., 2020; Wang et al., 2020). If the vendors supply the key products and services, it is essential that client firms invite the vendors to strategic meetings about, for example, the qualities required of the products and services (Bullen et al., 2017; Dasanayaka et al., 2020). The reason for the meeting with the vendors is that they are seen as critical suppliers who can make the products and services better and cheaper (Chatterjee, 2018; Cleary and McLarney, 2019; Nguyen et al., 2020). Vendor management seeks to establish a long-term B2B relationship between vendor and client firms, to ensure short-term gains and managerial cost savings (Chatterjee, 2015; Hamidi and Moradi, 2017). Client firms must be able to establish long-term relationship with the vendors, as this helps to increase trust, preferential treatment, and long-term shared accountability for the success of the business (Payan et al., 2016; Thrassou et al., 2021a, b; Rasool et al., 2021; Leung et al., 2022).

In selecting the best vendor for a particular product or service, the client firm must be able to sense the dynamic characteristics of the market and therefore be able to assess the core competencies of the vendors, including their methodology of development and discrimination and personal development, which all contribute to the success of the business (Levina and Ross, 2003; Chatterjee, 2019b; Ghosh et al., 2019). The impact of social capital and the creation of collaborative knowledge based on e-business proactivity should also be considered, especially in the aftermath of the COVID-19 pandemic (Al-Omouh et al., 2020; Sheshadri et al., 2020). This process is accelerated if the client firm gets involved in electronic VRM activities (EVRM) (Sharma et al., 2016; Tamilmani et al., 2021; Basile et al., 2021).

Client firms must be able to sense, seize, and transform the available resources and improve their businesses in order to allow them to weigh the vendors' delivery competency, relationship ability, and transforming abilities. These are the qualities that make for good performance in the prompt, high-quality supply of products and services to client firms (Thakur-Wernz and Wernz, 2020). EVRM capabilities depend on several interdependent factors which need to be well managed for high performance, and for this, high levels of integration ability are required between client firms and vendors (Kar, 2018). For effective EVRM capability, client firms need to develop their internal and external integrating capabilities (IIC and EIC) (Chang et al., 2016). IIC refers to the client firms' ability to adjust the internal dynamic capabilities that help them manage collaborative and synchronised processes (Zhao et al., 2011; Vrontis et al., 2021a). EIC refers to how successfully client firms can partner with the vendors to improve their developmental activities efficiently in the dynamic business environment.

EVRM activities also help client firms to integrate better the management of their B2B relationship with the vendors and thus ensure the firms' capacity for sustainable growth by improving the client firms' financial, environmental, and operational performance (Matschoss and Repo, 2020; Lichtenthaler, 2021; Vrontis et al., 2021b). Changes in the external environment impact the functionalities of both client firms and vendors due to the unpredictability of the situation (Schilke, 2014). Environmental dynamism is therefore perceived to affect the dynamic abilities of the firms and to impact their overall sustainable performance (Chen et al., 2015; Nedjah et al., 2022).

### 3. Theoretical underpinning and development of hypotheses

#### 3.1. Theoretical underpinning

Firms' abilities are considered as highly valued attributes (Schreyögg and Kliesch-Eberl, 2007). The extant literature clearly distinguishes ordinary capabilities from dynamic capabilities (Teece, 2012). Ordinary capability is also called the resource base of the firm (Pezeshkan et al., 2016) which helps a firm to undertake the functions essential for its routine tasks, including administrative, operational and governance-related functions (Teece, 2014). But in order to address a dynamic external business environment a firm needs dynamic capability, a sense of which is imported from dynamic capability view (DCV) theory (Teece et al., 1997). The DCV is interpreted as a "high-level routine (or collection of routines) that, together with its implementing input flows, confers upon an organization's management a set of decision options for producing significant outputs of a particular type" (Winter, 2003, p. 991). The study by Ciasullo et al. (2020) demonstrates the importance of multi-level governance for achieving sustainable innovation in smart communities. When the client firm is engaged in collaboration with its vendors in the dynamic business environments, it must be able to use its EVRM capability in responding properly to the changes in the external business environment in order to identify the business opportunities open to both partners (Mikalef and Pateli, 2017). In such a situation, when environmental dynamism is perceived to be dominant, the client firm needs both EVRM capability and some other particular dynamic abilities. These include the ability to adjust its activities with the vendors in order to reduce costs and increase profitability, and to help it to determine the best time for aligning and realigning with core internal and external available resources (Wu, 2010; Wilden et al., 2013; Teece, 2014). The client firm engaged in B2B relationships with vendors must have the dynamic abilities needed address the changes caused by environmental dynamism. The dynamic capability of a firm is interpreted as its "ability to integrate, build, and reconfigure internal and external resources/competencies to address and possibly shape, rapidly changing business environments" (Teece, 2012, p. 1395).

The three dimensions of dynamic capability are sensing capability, seizing capability, and reconfiguring or transforming capability (Teece, 2014). The client firm must be able to sense threats and seize opportunities (Wilden et al., 2013) and then rapidly reconfigure its resource base to capture business values from these opportunities. In this context, EVRM capability is considered a dynamic capability. The definition of EVRM capability is expanded to the three capabilities of sensing, seizing, and reconfiguring capabilities.

It is argued that environmental dynamism can affect the dynamic capability of EVRM, and therefore these three strengthened dynamic capabilities. This, in turn could impact the company's financial, environmental, and operational performance, that is its potential for sustainable growth.

#### 3.2. Development of hypotheses

From the studies of literature and theory, we can identify the contextual factors by which the EVRM capability could impact the firm's sustainability performance. These factors will be explained here, and attempts will be made to develop some hypotheses helpful for proposing a theoretical model.

##### 3.2.1. EVRM capability (EVC)

The business activity in which external service providers are used for delivering different products and services to client firms is called vendor relationship management (VRM). The external service providers are called vendors. This process has been used for a long time in order to improve service quality and could lower the business costs, as a valuable integrative strategic alternative to specializing in core competencies (Faisal and Raza, 2016; Rajaeian et al., 2017; Chatterjee, 2019a). With

the rapid progress of information and communication technology (ICT), most firms have migrated to electronic VRM (EVRM) capability. The EVRM tool is considered a backbone of managing B2B relationship between client firms and their vendors (Han et al., 2013). In maintaining EVRM activities, several challenges are faced by client firms when addressing the dynamic market environment. Studies in the extant literature of the client's perspective have provided some unique insights and analysed management abilities of client firms', including contact management capability, relationship management capability, and technology management capability (Palvia et al., 2010; Han et al., 2013; Nguyen, 2021; Thrassou et al., 2021a, b). The rapid changes in the business environments have forced client firms to deal with changing markets effectively by developing their several dynamic capabilities. As suggested by DCV (Winter, 2003), the extent to which the client firm can achieve better performance through developing EVRM activities with the vendors depends largely on its own dynamic abilities. The client firm must be able to acquire, integrate, and transform several resources to cope with the volatile dynamic business environment (Teece et al., 1997). The client firm needs to be able to acquire and integrate distributed knowledge and the necessary resources for ensuring success through the EVRM activities with the vendors (Narayanan et al., 2011). The EVRM capability is construed as a dynamic ability which is perceived to have influenced the three salient dynamic capabilities of sensing, seizing, and transforming abilities (Teece, 2014). Accordingly, it is hypothesised as follows.

**H1a.** : The client firm's EVRM capability (EVC) positively impacts its sensing capability (SEC).

**H1b.** : The client firm's EVRM capability (EVC) positively impacts its seizing capability (SIC).

**H1c.** : The client firm's EVRM capability (EVC) positively impacts its transforming capability (TRC).

##### 3.2.2. Sensing capability (SEC)

Rapid changes in technology have altered the ways in which firms collaborate with their vendors and created problems for the firms around articulating their future development plans (Kim et al., 2019). New knowledge of developed business processes is an effective source of innovation. When client firms face problems due to rapid changes in the market environments, they need to change their business dynamics accordingly and to explore suitable opportunities by enhancing their sensing ability to stabilise their EVRM activities with their vendors (Bullen et al., 2017). In such circumstances, client firms need to understand such opportunities, which could help them collaborate successfully with their vendors in improving their EVRM activities. This ability of the client firm is the sensing ability (Teece, 2014). Sensing capability is interpreted as "the ability of a given organization to identify, develop, codevelop, and assess technological opportunities that can meet customers' needs and business opportunities" (Wamba et al., 2019, p.3).

This sensing ability helps the client firm to channelize EVRM activities by effectively utilizing the resources created during the initial mode of business activities for generating revenue, thereby impacting on financial performance (Dakhli, 2021). Sensing capability is construed to be a dynamic capability in terms of DCV (Teece et al., 1997). The client firm's EVRM capability helps it to use its sensing ability to increase revenue and profitability. The profit generating client firms then can enhance their compliance with their environmental obligations as a part of their corporate social responsibility (CSR), thus providing benefits both to themselves and society. The sensing ability of client firms engaged in B2B relationship with their vendors in the context of performing EVRM activities enables them to deliver their products and services more efficiently (Zekos, 2003). Thus, the client firms' sensing ability is perceived to impact their operational performance through improvements in their financial and environmental activities.

Accordingly, the following hypotheses are formulated.

**H2a.** : The sensing capability (SEC) of client firms engaged in B2B-EVRM activities with their vendors positively impacts their financial performance (FP).

**H2b.** : The sensing capability (SEC) of client firms engaged in B2B-EVRM activities with their vendors positively impacts their environmental performance (EP).

**H2c.** : The sensing capability (SEC) of client firms engaged in B2B-EVRM activities with their vendors positively impacts their operational performance (OP).

### 3.2.3. Seizing capability (SIC)

In terms of DCV theory (Teece et al., 1997), a firm's seizing capability (SIC) is considered a dynamic capability. By mobilizing resources, a firm can seize some opportunities: this is its seizing capability (Pezeshkan et al., 2016). The ability to seize opportunities includes addressing marketing opportunities concerning new products, processes or services and the adoption of new technology (Teece, 2007; Viswanathan et al., 2010; Chaudhuri, 2013; Lin et al., 2021). The seizing capability, in the context of EVRM activities between client firms and vendors, is concerned with selecting the appropriate business design or model. This would mean adopting the business or commercialization strategy that leads most effectively to good decisions on when, where, and how to invest in the dynamic business environment (Teece, 2007). In the context of environmental dynamism, the client firm must be ready to seize new opportunities that result from the obsolescence of the prevailing business model and then exhibit best performance through EVRM activities (Lin et al., 2021). This is more relevant to the small and medium firms with limited resources engaged in EVRM activities with their vendors (Guo et al., 2016). The seizing capability of the client firm engaged in EVRM activities will help it both to seize appropriate opportunities to do business better and to engage with community services beneficial to society and to itself (Rashid et al., 2014). With the help of seizing capability, which is as a dynamic capability, the client firm can also enhance its financial performance through improved productivity, profitability ratio and so on (Dakhli, 2021). By using its seizing capability, the client firm can improve the fairness and flexibility of its operation, which can positively influence its overall performance (Neely, 2007). All these inputs help to formulate the following hypotheses.

**H3a.** : The seizing capability (SIC) of the client firm engaged in B2B-EVRM activities with its vendors positively impacts its financial performance (FP).

**H3b.** : The seizing capability (SIC) of the client firm engaged in B2B-EVRM activities with its vendors positively impacts its environmental performance (EP).

**H3c.** : The seizing capability (SIC) of the client firm engaged in B2B-EVRM activities with its vendors positively impacts its operational performance (OP).

### 3.2.4. Transforming capability (TRC)

The transforming capability (TRC) of a firm is described as a dynamic capability for integrating, reconstructing, renovating, creating resources—and in some cases disposing of some existing resources—in order to ensure more effective innovation (Teece, 2017). The ability to manage, coordinate, and control business-related activities with vendor firms requires the skillful sourcing of external knowledge. This applies especially to client firms collaborating with vendors in the context of EVRM activities (Becker and Dietz, 2004). Transforming capability (TRC) is considered as a dynamic capability as envisaged by Teece (2014). We should note here that large firms like IBM, Apple, GE and P&G have already created systems for collaborating with their vendors: they have already developed the knowledge transfer process. Such knowledge

management systems improve the problem-solving efficiency of the firms involved (Prajogo and Ahmed, 2006). Transforming or reconfiguring the capability of the client firm involved in EVRM activities with their vendors means using all possible sources and opportunities in order to react effectively to dynamic changes in the market. This client firm transforming capability could animate the collaboration between client firm and vendor, thus helping to ensure better performance for the joint venture (Wamba et al., 2019). That is, transforming ability can improve the financial performance of the firms involved through higher profitability. With greater profitability, the client firm is better able to fulfil its corporate social and environmental responsibilities (Kim and Seo, 2021). All these improvements in the client firm can impact its operational performance. Hence, the transforming ability of a client firm involved in B2B relationship with vendors to improve the vendor's management activities can impact its financial, environmental and operational performance. Accordingly, the following hypotheses are derived.

**H4a.** : The transforming capability (TRC) of the client firm engaged in B2B-EVRM activities with its vendors positively impacts its financial performance (FP).

**H4b.** : The transforming capability (TRC) of the client firm engaged in B2B-EVRM activities with its vendors positively impacts its environmental performance (EP).

**H4c.** : The transforming capability (TRC) of the client firm engaged in B2B-EVRM activities with its vendors positively impacts its operational performance (OP).

### 3.2.5. Financial performance (FP)

The financial performance (FP) of a firm is considered a subjective measure of how well a firm uses its assets and resources for generating revenue (Dakhli, 2021). The FP of a firm can be estimated by assessing various parameters of the firm, such as net profit margin, gross profit margin, debt to equity ratio. Gross profit margin is the ratio of the revenue to total costs (Dakhli, 2021). Other measures of FP include leverage, profitability, solvency and ownership liquidity (Borhan et al., 2014). A strong FP enables a firm to enjoy more confidence and certainty, which help it take proper decision. However, the concept of FP has drastically changed, to include not just profitability but also how well the firm can maintain its environmental commitments (Nirino et al., 2019). In the context of improved EVRM activities the client firm needs to apply its dynamic capabilities in order to extract best potential value from its vendors, which means incurring lower costs, leading to higher profits, which supports sustainability (Zavolokina et al., 2016). Accordingly, the following hypothesis is prescribed.

**H5.** : The financial performance (FP) of the client firm engaged in B2B relationships with its vendors through EVRM positively impacts the firm's sustainability performance (FSP).

### 3.2.6. Environmental performance (EP)

To ensure better environmental performance (EP), the firm needs to render community services beneficial for society. Both client and vendor firms need not only to engage in environment-related causes but also to uphold better environmental practices. The client firm needs to encourage the vendors to be more environmentally sensitive while delivering its products and services (Kim et al., 2019). The client firm should discuss environment-related best practices with its vendors through VRM activities, and environmental issues should be part of the client-vendor business agenda (Thakur-Wernz and Wernz, 2020). The firm also needs to emphasize the welfare of its stakeholders, to improve its corporate image and the loyalty of its customers (Rashid et al., 2014). Firms are required to focus on environmental issues including green recruitment, green technology, strategy and green products (Dögl and Holtbrügge, 2014). One aspect of improving a firm's environmental performance is better ways of exhibiting its corporate social

responsibilities, that is, the actions and policies concerned with a range of specific issues (Aguinis, 2011). Thus, to improve environmental performance, the firm must spend resource, time, and effort, in collaboration with its vendors. In the context of EVRM activities, client firms need to use their dynamic capability to select the best vendors: those who combine greater environmental sensitivity and the ability to develop and deliver increasingly profitable products or services. This will help the client firm to spend more on developing environmentally friendly green products and services. Accordingly, it is hypothesised as follows.

**H6.** : The environmental performance (EP) of the client firm engaged in B2B relationships with its vendors through EVRM process positively impacts its sustainability performance (FSP).

### 3.2.7. Operational performance (OP) and firm sustainability performance (FSP)

There are five operational performance objectives: cost, quality, speed, dependency, and flexibility (Neely, 2007). The measure of a firm's ability of the firm to deliver products and services efficiently to its potential customers is called operational performance (Zekos, 2003). The conventional way of assessing a firm's OP is to compare its current performance some standard performance parameters, against a set of schedules (Li et al., 2022). However, this concept has recently undergone changes; it now also includes assessment of corporate financial activities: "Corporate finance must go beyond the classic objective of maximizing stakeholder value, trying to incorporate environmental, social, and governance factors into instrument choices by evaluating costs and benefits towards a new concept of finance" (Fatemi and Fooladi, 2013, p.101). It is important that the client firm involved in EVRM activities with its vendors should be engaged in sustainable activities (Lichtenthaler, 2021), which requires investment. The client firm should use its dynamic capabilities to improve its business interactions with the vendors so as to gain the extra profits needed for investing in sustainable activities. Accordingly, the following hypothesis is prescribed.

**H7:** The operational performance (OP) of the client firm engaged in B2B relationships with its vendors through EVRM process positively impacts the firm sustainability performance (FSP).

### 3.2.8. Moderating role of environmental dynamism (ED)

Whenever a relationship between two constructs is not constant, a third variable acting on this relationship may facilitate the forward relationship or retard the forward relationship and even in some cases it can reverse the direction of the relationship. This third variable is called moderating variable. Environmental dynamism (ED) refers to the unpredictability and volatility of the firm's external environment (Schilke, 2014). ED is a key factor of DCV theory (Teece et al., 1997; Schilke, 2014). Levinthal (2000) has argued that benefits derived from dynamic capability vary according to the context in which it is deployed. In the moderately dynamic markets characterised by stable industrial structures and defined market boundaries, firms follow linear and predictable paths (Eisenhardt and Martin, 2000). But high velocity markets are not predictable but uncertain, volatile, complex with ambiguous structures (Alexander et al., 2018). The unpredictable character of ED suggests opportunities of exploring EVRM capability in the three dimensions of dynamic capabilities, sensing, seizing, and transforming (Teece, 2014). Accordingly, it is hypothesised as follows.

**H8a.** : Environmental dynamism (ED) moderates the relationship between the client firm's EVRM capability (EVC) and its sensing capability (SEC).

**H8b.** : Environmental dynamism (ED) moderates the relationship between the client firm's EVRM capability (EVC) and its seizing capability (SIC).

**H8c.** : Environmental dynamism (ED) moderates the relationship

between the client firm's EVRM capability (EVC) and its transforming capability (TRC).

With all these inputs, a model has been developed and is provided in Fig. 1.

## 4. Research methodology

The hypotheses were tested, and the model was validated using the covariance-based structural equation modeling technique, which can easily estimate the hypothesised model. The proposed theoretical model represents the several hypothesised paths that were articulated intuitively by establishing relationships between the constructs. These hypothesised paths were validated, using CB-SEM modeling, by the analysis the survey data, which is symmetric about the mean. CB-SEM can easily analyse a complex model. Such analysis by PLS-SEM technique is not possible because by this technique, some constraints like heteroskedasticity, auto-correlation, as well as endogeneity arise (Dogan, 2004). CB-SEM helps to analyse both the confirmatory and exploratory models (Byrne, 2010), and can easily estimate the R<sup>2</sup> values (coefficients of determination) of the endogenous variables, thus helping us to assess the overall predictive power of the model. In the survey, the inputs from the respondents need to be quantified by a standard scale for analysis. The present study used a 5-point Likert scale from 1, Strongly Disagree (SD) to 5, Strongly Agree (SA). 5-point Likert scale has been used because it is simple to apply. In addition, 5-point Likert scale provides the respondents to take neutral stand by expressing 'neither disagree nor agree' option.

### 4.1. Measurement instruments

Survey-based data are analysed to test the hypothesised relationships. The procedure is for studies which we need to test hypotheses-testing, develop of scales, describe the demography, and develop the research model (Lee and Shim, 2007). The questionnaire was prepared with the input from previous literature. A pre-test was conducted on 40 responses, in order to improve the wording, understandability and format of the questions, after which some of the questions were improved. A pilot test was conducted to confirm the reliability of the scales (MacKenzie et al., 2011). The questions were provided to a small sample of the main survey population, though with the same selection criteria and a diverse group of respondents. The results of the pilot test prompted us to drop those items that could not improve the reliability of the corresponding constructs. After the pilot test the items were fine-tuned with the help of six experts with knowledge of the present study. Out of these six experts, four experts came from industries, each having >15 years of professional experience in the relationship management field. The remaining two experts are academicians each having PhD degrees with >10 years of teaching and research experience in the domain of this study. Ultimately 38 items remained.

### 4.2. Collection of data

The survey respondents, in India, were chosen on the basis of 'judgement sampling'. On the basis of this judgement, a convenience sampling approach was adopted for selecting at random 35 firms in Mumbai, Bengaluru, and Delhi. Of these 35 firms, 19 were found to have been engaged in EVRM activities. Top executives of these 19 firms were asked to allow their employees of different ranks to participate in the survey. All these top executives were informed that the aim of this study is purely academic, and assured that the confidentiality and anonymity of the respondents and the details of the firms concerned will be strictly preserved. After much persuasion, the top executives of 14 firms eventually agreed to allow their employees of different ranks to take part in the survey. The top executives also provided details of 694 of their employees holding a range of managerial positions. All 694 prospective

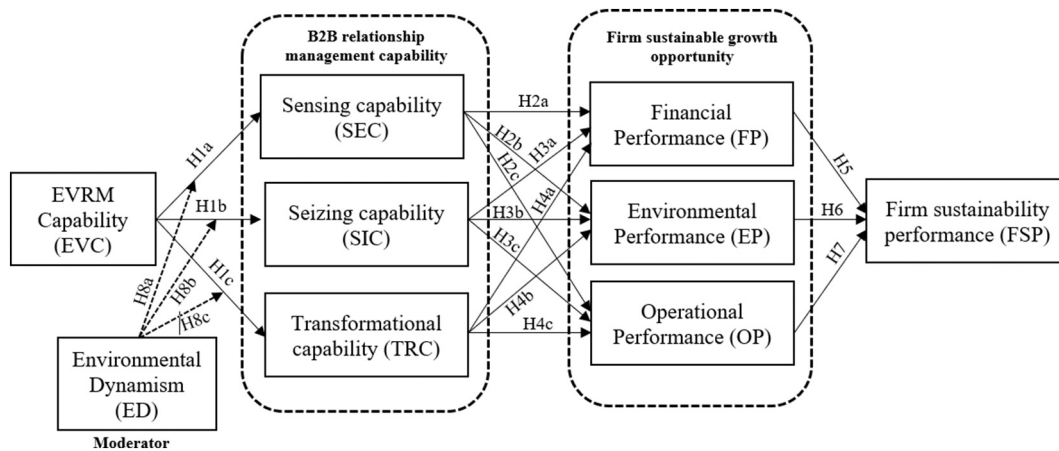


Fig. 1. Conceptual model (adopted from DCV theory).

participants were provided with response sheets, each containing 38 items, each item having 5 response options to be completed with a tick mark. With each response sheet, a guideline was provided detailing the aims of the study and how to complete the response sheet. All the targeted respondents were asked to respond within two months (August – September 2021), during which time 389 responses were received: a response rate of 56.05 %. On scrutiny, it was found that 11 responses were vague and not considered. These 11 responses were not considered because the concerned respondents were found to have put tick marks in more than one option against each question. The analysis was conducted on 378 responses, against 38 items. This is within the permissible range (Deb and Lomo-David, 2014). The demographic data of these 378 respondents are provided in Table 1.

5. Analysis of data and results

5.1. Measurement property and discriminant validity test

A loading factor (LF) was estimated for each item in order to measure convergent validity. To examine the validity, reliability, and internal consistency of the constructs, average variance extracted (AVE), composite reliability (CR), and Cronbach’s alpha (α) were estimated. All the estimated values are within the permissible range. The lowest permissible values of AVE and CR are 0.50 and 0.80 respectively (Hair et al., 2017; Rana et al., 2021). Table 2 shows the results.

All the square roots of the AVEs were greater than the corresponding bifactor correlation coefficients, which satisfies Fornell and Larcker’s criteria (Fornell and Larcker, 1981), confirming discriminant validity. The results are shown in Table 3.

5.2. Moderator analysis (multi group analysis)

To ascertain whether the effects of the moderator ED are significant on the linkages H1a, H1b, and H1c, multi group analysis (MGA) was performed using a bootstrapping process with 5000 resamples. The effects of ED on the three linkages were analysed, considering them in two

Table 1 Demographic information (N = 378).

Particulars	Category	Frequency	Percentage (%)
Gender	Male	270	71.4
	Female	108	38.6
Hierarchy of managers	Junior manager	201	53.1
	Midlevel manager	116	30.7
	Senior manager	61	16.2
Nature of industry	Manufacturing	142	37.6
	Service	236	62.4

Table 2 Measurement properties.

Constructs / items	LF	AVE	CR	α	t-values
EVC		0.83	0.87	0.90	
EVC1	0.89				22.11
EVC2	0.85				26.17
EVC3	0.93				25.51
EVC4	0.96				24.21
SEC		0.79	0.82	0.86	
SEC1	0.85				20.11
SEC2	0.80				37.79
SEC3	0.95				28.48
SIC		0.85	0.89	0.94	
SIC1	0.90				36.17
SIC2	0.94				37.11
SIC3	0.89				39.07
SIC4	0.87				34.18
SIC5	0.95				38.08
SIC6	0.96				37.11
TRC		0.86	0.89	0.93	
TRC1	0.96				39.17
TRC2	0.94				36.15
TRC3	0.95				38.27
TRC4	0.90				33.06
TRC5	0.85				24.19
TRC6	0.86				21.32
FP		0.87	0.90	0.94	
FP1	0.95				29.21
FP2	0.95				20.12
FP3	0.90				27.29
FP4	0.94				39.11
FP5	0.89				17.29
FP6	0.95				24.17
EP		0.84	0.88	0.93	
EP1	0.86				29.28
EP2	0.87				28.19
EP3	0.91				26.12
EP4	0.87				37.08
EP5	0.89				27.29
EP6	0.90				28.11
OP		0.84	0.88	0.92	
OP1	0.90				38.11
OP2	0.94				29.17
OP3	0.85				25.11
FSP		0.92	0.95	0.98	
FSP1	0.90				26.27
FSP2	0.96				24.04
FSP3	0.92				39.61
FSP4	0.97				29.20

categories Strong ED and Weak ED. It is known that if the p-value difference for the effects of two categories of a moderator on a particular linkage becomes either <0.05 or >0.95, it is said that the effects of that

**Table 3**  
Discriminant validity test (Fornell and Larcker criteria).

Constructs	EVC	SEC	SIC	TRC	FP	EP	OP	FSP	AVE
EVC	0.91								0.83
SEC	0.28	0.89							0.79
SIC	0.32	0.19	0.92						0.85
TRC	0.34	0.28	0.22	0.93					0.86
FP	0.31	0.24	0.19	0.24	0.93				0.87
EP	0.33	0.19	0.38	0.21	0.26	0.92			0.84
OP	0.37	0.27	0.32	0.39	0.18	0.24	0.92		0.84
FSP	0.26	0.26	0.21	0.37	0.39	0.17	0.31	0.96	0.92

moderator on that linkage are significant (Hair et al., 2016). Here the results show that the effects of the moderator ED on the three linkages are significant. The results are shown in Table 4.

5.3. Common method bias (CMB)

The results depend on the survey-based data, hence the possibility of CMB, which was mitigated by pre-emptive procedural measures. During the survey, the potential respondents were assured that their anonymity and confidentiality would be strictly preserved, so that the respondents could be expected to provide their responses without any external influence. Also, in order to estimate the severity of CMB, a post-hoc Harman's Single Factor Test (SFT) was conducted. The results showed that the first factor was 23.12% of the variance, which is less than the cut-off value of 50% (Podsakoff et al., 2003). As opined by Ketokivi and Schroeder (2004), the Harman's SFT is not a strong test for verifying CMB. Hence, another test is necessary to examine CMB. A marker variable test (Lindell and Whitney, 2001) was also conducted; the results indicated that the differences between the original and the CMB-adjusted correlations were very small ( $\leq 0.06$ ) (Mishra et al., 2018). Thus, it can be inferred that CMB does not severely distort the results of this study.

5.4. Hypotheses testing (structural equation modeling)

For the SEM used to test the hypotheses and to validate the proposed theoretical model, several fit indices and tests were conducted for Root Mean Square Error (RMSE), ratios between chi square and degrees of freedom. All the values are within the allowable range. Hence, it is concluded that the model is fit. The results are shown in Table 5.

This process helps to compute  $\beta$ -values, p-values, and  $R^2$  values. The results are shown in the Table 6.

With all these inputs, the validated model is shown in Fig. 2.

5.5. Results

The present study contained 18 hypotheses. Out of these 18 hypotheses, three (H8a, H8b, and H8c) pertain to the effects of the moderator ED on the linkages H1a, H1b, and H1c. The results demonstrate that EVC could impact SEC, SIC, and TRC (H1a, H1b, and H1c) significantly and positively since the concerned path coefficients are 0.17, 0.21, and 0.23 respectively with respective significance levels of  $p < 0.001$ \*\*\*,  $p < 0.05$ \*, and  $p < 0.001$ \*\*\*.

The results also show that:

**Table 4**  
Moderator analysis (MGA).

Linkages	Hypotheses	p-Value difference	Remarks
EVC → ED → SEC	H8a	0.04	Significant
EVC → ED → SIC	H8b	0.01	Significant
EVC → ED → TRC	H8c	0.02	Significant

**Table 5**  
Structural equation modeling (SEM).

Particulars	Range	Values
Chi square: degree of freedom	<3.000 (Kline, 2005)	2.022
Comparative Fit Index (CFI)	>0.930 (Hair et al., 2016)	0.942
Normal Fit Index (NFI)	>0.800 (Segars and Grover, 1993)	0.837
Trucker Fit Index (TFI)	>0.950 (Sharma et al., 2005)	0.981
Root Mean Square Error (RMSE)	<0.070 (Steiger, 2007)	0.041

**Table 6**  
Path coefficients, p-values, and remarks.

Linkages	Hypotheses	$\beta$ -values	p-Values	Remarks
EVC → SEC	H1a	0.17	$p < 0.001$ ***	Supported
EVC → SIC	H1b	0.21	$p < 0.05$ *	Supported
EVC → TRC	H1c	0.23	$p < 0.001$ ***	Supported
SEC → FP	H2a	0.19	$p < 0.001$ ***	Supported
SEC → EP	H2b	0.22	$p < 0.05$ *	Supported
SEC → OP	H2c	0.26	$p < 0.01$ **	Supported
SIC → FP	H3a	0.29	$p < 0.05$ *	Supported
SIC → EP	H3b	0.31	$p < 0.01$ **	Supported
SIC → OP	H3c	0.25	$p < 0.01$ **	Supported
TRC → FP	H4a	0.28	$p < 0.05$ *	Supported
TRC → EP	H4b	0.33	$p < 0.01$ **	Supported
TRC → OP	H4c	0.20	$p < 0.001$ ***	Supported
FP → FSP	H5	0.41	$p < 0.001$ ***	Supported
EP → FSP	H6	0.43	$p < 0.001$ ***	Supported
OP → FSP	H7	0.39	$p < 0.01$ **	Supported
EVC → ED → SEC	H8a	0.11	$p < 0.001$ ***	Supported
EVC → ED → SIC	H8b	0.14	$p < 0.05$ *	Supported
EVC → ED → TRC	H8c	0.18	$p < 0.01$ **	Supported

- SEC could impact FP, EP, and OP (H2a, H2b, and H2c) significantly and positively since the concerned path coefficients are 0.19, 0.22, and 0.26 respectively with significance levels, respectively, of  $p < 0.001$ \*\*\*,  $p < 0.05$ \*, and  $p < 0.01$ \*\*.
- SIC could impact FP, EP, and OP (H3a, H3b, and H3c) significantly and positively since the concerned path coefficients are 0.29, 0.31, and 0.25 respectively with significance levels, respectively, of  $p < 0.05$ \*,  $p < 0.01$ \*\*, and  $p < 0.01$ \*\*.
- the impacts of TRC on FP, EP, and OP (H4a, H4b, and H4c) are significant and positive since the concerned path coefficients are 0.28, 0.33, and 0.20 respectively with significance levels, respectively, of  $p < 0.05$ \*,  $p < 0.01$ \*\*, and  $p < 0.001$ \*\*\*.
- FP, EP, and OP could impact on FSP (H5, H6, and H7) significantly and positively since the concerned path coefficients are 0.41, 0.43, and 0.39 respectively with significance levels, respectively, of  $p < 0.001$ \*\*\*,  $p < 0.001$ \*\*\*, and  $p < 0.01$ \*\*.
- The moderator ED significantly and positively impacts on the relationships H1a, H1b, and H1c since the concerned path coefficients are 0.11, 0.14, and 0.18 respectively with significance levels, respectively, of  $p < 0.001$ \*\*\*,  $p < 0.05$ \*, and  $p < 0.01$ \*\*.
- So far as coefficients of determination are concerned, EVC could explain SEC, SIC, and TRC to the tune of 32% ( $R^2 = 0.32$ ), 37% ( $R^2 = 0.37$ ), and 40% ( $R^2 = 0.40$ ) respectively. Again, SEC, SIC, and TRC

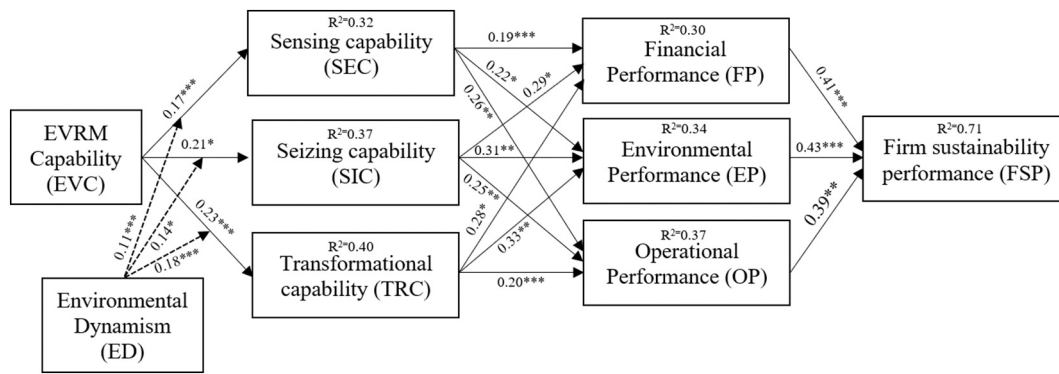


Fig. 2. Validated model (SEM).

could explain FP, EP, and OP to the tune of 30 % ( $R^2 = 0.30$ ), 34 % ( $R^2 = 0.34$ ), and 37 % ( $R^2 = 0.37$ ) respectively.

- FP, EP, and OP could simultaneously explain FSP to the extent of 71 % ( $R^2 = 0.71$ ) which is the predictive power of the proposed theoretical model.

6. Discussion

The present study has found that client firms have always valued the ability of vendors to successfully implement EVRM, strengthening the B2B integrative relationship between the client firm and its vendors (Ahimbisibwe et al., 2017). The present study has documented several challenges faced by client firms and prescribed how such challenges could be addressed. Several studies have investigated and analysed the EVRM capabilities of vendors, but they seem to have denied the importance of the client firms' capabilities (Wang and Wang, 2019). The present study has discussed the performance of client firms in the context of EVRM activities and found that their capabilities are critical. With regard to the client firm, the present study has added several unique insights to the extant literature by providing substantial inputs to the other related research contexts like global software development and new work on supply and demand (Sainathan and Groenevelt, 2019). The present study has demonstrated that rapid technological change has led to client firms encountering an increasingly volatile and dynamic environment in which they need to possess dynamic capabilities for responding effectively to changing markets, including sensing, seizing, and transforming abilities (Tecece, 2014). The present study has demonstrated that since the information technology-related tasks (EVRM activities) are by nature highly inter-firm dependent, client firms need to be able to acquire and integrate distributed knowledge by reconfiguring their dynamic abilities to ensure success in their B2B

relationship management with their vendors.

The present study has shown that ED has a considerable impact on the relationships between EVC and the three dynamic capabilities. This has been supported by another study, by Wamba et al. (2019). The effects of the moderator ED on the three relationships H1a, H1b, and H1c were found to be significant through multi group analysis (MGA). The analysis of these effects through graphical representation is shown in Fig. 3.

In the three graphs, continuous line and dotted line show the effects of Strong ED and of Weak ED respectively. The continuous lines are more inclined than the dotted lines on the EVC axes. This shows that, with increased EVC, the rate of decrease of SEC, SIC, and TRC is greater for the effects of Strong ED on the three linkages than for the effects of Weak ED. In all the graphs, the magnitudes of the gradients of all the continuous lines are more than those of the dotted lines.

6.1. Theoretical implications

The theoretical contributions of this study can be conceptualised in various ways. This study provides empirical support for the notion that a firm's dynamic EVRM capability is not a universal 'one size fits all' phenomenon. It demonstrates empirically that the benefits derived from a firm's dynamic capabilities vary according to the specific issue on which the ability has been deployed. This study has illuminated the need for the client firm to use its dynamic capability in order to help it extract maximum value from its vendor firms. Its findings help to define the boundaries of DCV: an important contribution to the successful use of any theory. It has also been shown that environmental dynamism (ED) plays a key role in moderating the relationships between EVRM capabilities with the three distinct dimensions of dynamic capabilities of the client firm. The present study has considered environmental dynamism

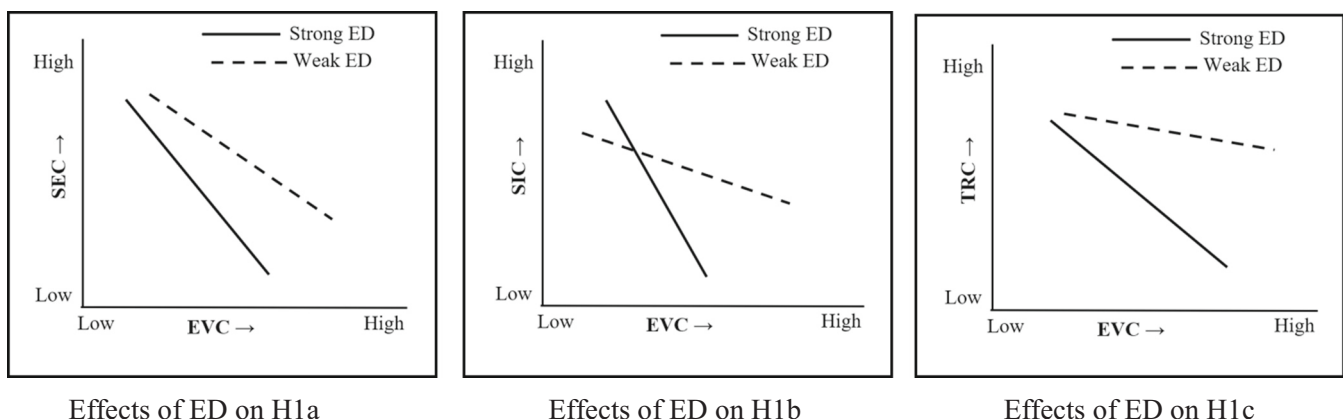


Fig. 3. Effects of ED on H1a, H1b, and H1c.



as an important moderator which could influence the relationships between sensing, seizing, and transformational capabilities with their predictor EVRM capability (EVC). The present study has been able to successfully explain how to address the uncertain nature of environmental dynamism, the firms' sensing, seizing, and transformational capabilities being the dynamic capabilities could help for successfully utilizing EVRM abilities (Teece, 2014). This is claimed as a unique theoretical contribution of the present study. Consideration of ED as a moderating variable enabled us to address the key research questions. This study has extended DCV theory by conceiving of EVRM capability having three sub-capabilities: sensing, seizing, and transforming capabilities. No other studies are known to have investigated how EVRM capability duly moderated by the impacts of environmental dynamism could improve firm sustainability performance by developing the sensing, seizing, and transforming capabilities as well as by improving financial, operational, and environmental performance of the firms.

To date, no other study has investigated how the EVC of customer companies involved in B2B relationship management processes with their supplier companies could improve their financial, environmental, and operational performance, potentially impacting directly on the sustainability of customer companies. The present study investigated all these issues and analysed the moderating effects of ED on the relationships of the three capabilities with their common predictor EVC. This too is a unique theoretical contribution of the present study. Wang and Wang (2019) investigated and analysed the impacts of vendors' ability on outsourcing performance in relation to information technology. The present study has extended this work to investigate how client firms' EVRM capability could impact their own sustainability. This adds considerable value to the literature. A study of Cleary and McLarney (2019) investigated how effective vendor management strategy could successfully derive organizational benefits. The concept of this study has been extended in the present study by investigating how EVRM capabilities could eventually impact sustainability performance of the firms by developing some intermediate contextual factors. This concept has added value to the body of relationship management literature.

### 6.2. Implications for practice

The findings of the present study suggest important guidelines for managers and leaders of client firms involved in making decisions on investments aimed at developing their EVRM capability. Before investing in developing EVRM capability, these managers need to estimate their requirements in dealing with the vendor firms. They also need to sense the external dynamic changes of the business environments and internal changes of the resources of the firms if they are to develop appropriately the features and functionalities of EVRM and to assess whether they can seize all the potential opportunities when dealing with the vendor firms. They should assess their firms' ability to establish cordial relationship with the vendors by reconfiguring both their intangible assets (exchange of skills and knowledge between the client firms and vendor firms) and their tangible assets (usage of infrastructural facilities). The present study has also demonstrated that EVRM-enabled dynamic capability helps client firms achieve their sustainable performance through optimization of environmental dynamism. Thus, it can be inferred that investments in EVRM capability can help client firms to achieve their sustainable performance goals even in the face of the dynamism of the challenging external environment. The present study has shown that the sensing, seizing, and transforming abilities of the firms could impact on their financial, environmental, and operational performance. This implies that managers must deploy patience and foresight when deciding how best to build the capabilities of their firm and how to explore the options for improving their sustainable performance. The present study has demonstrated through interdisciplinary study that both the financial and the operational performance of the client firm derive profits from their B2B activities with vendor firms. But at the same time the client firms need to fulfil their

social and environmental commitments as a part of their corporate social responsibilities. This means investing in developing green products and services along with the vendor firms. The client firms also need to persuade their vendor firms to take their environmental commitments seriously and, whenever required, they need to train the vendor firms' employees and managers so that they too can participate and contribute to the innovation and development of more environment-friendly products and services. Since the EVRM capabilities are the new competencies of the firms, it is essential that the employees of all hierarchy should be aware how best potentials of EVRM abilities could be extracted to benefit the firms. For this, the leaderships of the firms should arrange to impart proper training and readiness to the employees as to how to best utilize the EVRM abilities even under the influence of environmental dynamism.

### 6.3. Limitations and scope for future research

The study has several limitations. First, its findings depend on cross-sectional data, in which the causalities between the relationships of the constructs may be weak, giving rise to endogeneity defects. To eliminate these defects, future researchers might valuably conduct longitudinal studies. Second, the results presented here rely on the inputs of the respondents based in India, which introduces an external validity issue. In order to provide a generalisable result, future researchers should collect data from respondents evenly dispersed around the globe. Third, the DCV theory used in this study suffers from the defects of context-insensitivity as noted by Ling-Yee (2007) and cannot identify the conditions in which the abilities of the client firms would be most valuable (Schilke, 2014). Future researchers might usefully explore the optimum conditions under which EVRM-enabled DC could produce firms' best sustainable performance. Fourth, while the present study has investigated and analysed several dynamic capabilities of client firms, it did not explore EVRM capability from the perspective of the vendor firms. Future research should perhaps investigate EVRM capability from the perspectives of both client and vendor firms: this would provide more clarity around the successful usage of EVRM capability. Fifth, the present study has not discussed the rival model issue which should be considered as a limitation of this study. By comparing the proposed theoretical model with the rival model, superiority of the proposed theoretical model could have been tested. Future researchers may consider this point. Finally, the explanative power of the model is 71 %. Future researchers should consider whether including other boundary conditions and constructs could enhance the explanatory power of the proposed theoretical model.

## 7. Conclusion

The present study has been able to highlight how by using EVRM tool, it has been possible by the firms to establish an intimate connection between buyers and suppliers since the tool helps to deepen the buyers-suppliers relationship helpful for development of trust between them to successfully achieve the common goal. It benefits both the suppliers and buyers in different contexts. The study has contributed how, with the advent of ICT, the firms have been able to adopt EVRM for successfully managing the relationships between different vendors of the firms. Limited interdisciplinary studies are available whereby properly using a range of performance matrices supplemented by the firms' dynamic capabilities, the firms could explore the relationship between the firms' dynamic abilities and their sustainability performance. In such context, this study has been able to derive valued contributions to enrich the vendor relationship management literature. The present study has provided a successful framework with high explanative power that could help to improve sustainability performance of a firm by developing EVRM capabilities. In this context, the retrospection of this study is claimed to be a novel contribution to the body of relationship management literature.

## CRediT authorship contribution statement

Conceptualization, Investigation, Statistical Analysis, Data Collection, Methodology, Validation, Formal Analysis, Writing – Original Draft, Writing – Review and Editing, Funding, Supervision.

**Sheshadri Chatterjee** (Conceptualization, Writing - Original Draft and Editing).

**Ranjan Chaudhuri** (Conceptualization, Supervision, Writing - Original Draft, Reviewing and Editing).

**Ajay Kumar** (Conceptualization, Supervision, Proofreading, Editing and Revision).

**Alba Yela Aránega** (Editing and Revision).

**Baidyanath Biswas** (Proofreading, Editing and Revision).

## Data availability

Data will be made available on request.

## References

- Afuah, A., 2001. Dynamic boundaries of the firm: are firms better off being vertically integrated in the face of a technological change? *Acad. Manag. J.* 44 (6), 1211–1228.
- Aguinis, H., 2011. Organizational responsibility: doing good and doing well. In: *APA Handbook of Industrial and Organizational Psychology*, 3(1), pp. 855–879.
- Ahimbisibwe, A., Daellenbach, U., Cavana, R.Y., 2017. Empirical comparison of traditional plan-based and agile methodologies critical success factors for outsourced software development projects from vendors' perspective. *J. Enterp. Inf. Manag.* 30 (3), 400–453.
- Alexander, A., Kumar, M., Walker, H., 2018. A decision theory perspective on complexity in performance measurement and management. *Int. J. Oper. Prod. Manag.* 38 (11), 2214–2244.
- Al-Omouh, K.S., Simón-Moya, V., Sendra-García, J., 2020. The impact of social capital and collaborative knowledge creation on e-business proactiveness and organizational agility in responding to the COVID-19 crisis. *J. Innov. Knowl.* 5 (4), 279–288.
- Araz, C., Ozkarahan, I., 2007. Supplier evaluation and management system for strategic sourcing based on a new multicriteria sorting procedure. *Int. J. Prod. Econ.* 106 (2), 585–606.
- Basile, G., Chaudhuri, R., Vrontis, D., 2021. Digital transformation and entrepreneurship process in SMEs of India: a moderating role of adoption of AI-CRM capability and strategic planning. *J. Strateg. Manag.* 15 (3), 416–433.
- Becker, W., Dietz, J., 2004. R&D cooperation and innovation activities of firms—evidence from the German manufacturing industry. *Res. Policy* 33 (2), 209–223.
- Bhattacharjee, K.K., Tsai, C.W., Agrawal, A.K., 2021. Impact of peer influence and government support for successful adoption of technology for vocational education: a quantitative study using PLS-SEM technique. *J. Qual. Quant.* 55 (3), 2041–2064.
- Borhan, H., Naina Mohamed, R., Azmi, N., 2014. The impact of financial ratios on the financial performance of a chemical company: the case of LyondellBasell Industries. *World J. Enterp. Manag. Sustain. Dev.* 10 (2), 154–160.
- Bullen, C.V., LeFave, R., Selig, G.J., 2017. Client–vendor relationship management in global sourcing. In: *Global Sourcing of Services. Strategies, Issues And Challenges*, pp. 301–333. [https://doi.org/10.1142/9789813109315\\_0008](https://doi.org/10.1142/9789813109315_0008).
- Byrne, B.M., 2010. *Structural Equation Modeling with AMOS Basic Concepts, Applications, and Programming*. Routledge publication, USA. ISBN 9780367230715.
- Chang, W., Ellinger, A.E., Kim, K., Franke, G.R., 2016. Supply chain integration and firm financial performance: a meta-analysis of positional advantage mediation and moderating factors. *Eur. Manag. J.* 34 (3), 282–295.
- Chatterjee, S., 2015. Security and privacy issues in E-Commerce: a proposed guidelines to mitigate the risk. In: *IEEE International Advance Computing Conference (IACC)*, pp. 393–396. <https://doi.org/10.1109/IADCC.2015.7154737>.
- Chatterjee, S., 2018. Internet of things and social platforms: an empirical analysis from Indian consumer behavioral perspective. *J. Behav. Inf. Technol.* 39 (2), 133–149.
- Chatterjee, S., 2019a. Is data privacy a fundamental right in India? An analysis and recommendations from policy and legal perspective. *Int. J. Law Manag.* 61 (1), 170–190.
- Chatterjee, S., 2019b. Impact of AI regulation on intention to use robots: from citizens and government perspective. *Int. J. Intell. Unmanned Syst.* 8 (2), 97–114.
- Chatterjee, S., Rana, N.P., Dwivedi, Y.K., 2021. Assessing consumers' co-production and future participation on value co-creation and business benefit: an FPCB model perspective. *Inf. Syst. Front.* <https://doi.org/10.1007/s10796-021-10104-0>. In Press.
- Chaudhuri, R., 2013. Information-knowledge space: a transformation model for IT and other knowledge intensive organizations. *Glob. J. Manag. Bus. Res.* 13 (1), 42–52.
- Chen, D.Q., Preston, D.S., Swink, M., 2015. How the use of big data analytics affects value creation in supply chain management. *J. Manag. Inf. Syst.* 32 (4), 4–39.
- Ciasullo, M.V., Troisi, O., Grimaldi, M., Leone, D., 2020. Multi-level governance for sustainable innovation in smart communities: an ecosystems approach. *Int. Entrep. Manag. J.* 16 (4), 1167–1195.
- Cleary, S., McLarney, C., 2019. Organizational benefits of an effective vendor management strategy. *IUP J. Supply Chain Manag.* 16 (4), 110–117.
- Dakhli, A., 2021. The impact of corporate social responsibility on firm financial performance: does audit quality matter? *J. Appl. Acc. Res.* <https://doi.org/10.1108/JAAR-06-2021-0150>. In Press.
- Dasanayaka, S.W.S.B., Al Serhan, O., Glambosky, M., Gleason, K., 2020. The business-to-business relationship: examining Sri Lankan telecommunication operators and vendors. *J. Bus. Ind. Mark.* 35 (6), 1069–1087.
- Deb, M., Lomo-David, E., 2014. Evaluation of retail service quality using analytic hierarchy process. *Int. J. Retail Distrib. Manag.* 42 (6), 521–541.
- Dogan, G., 2004. Confidence interval estimation in system dynamics models: bootstrapping vs. likelihood ratio method. In: *Proceedings of 22nd System Dynamics Conference*, Keele College, Oxford, UK.
- Dögl, C., Holtbrügge, D., 2014. Corporate environmental responsibility, employer reputation and employee commitment: an empirical study in developed and emerging economies. *Int. J. Hum. Resour. Manag.* 25 (12), 1739–1762.
- Eisenhardt, K.M., Martin, J.A., 2000. Dynamic capabilities: what are they? *Strateg. Manag. J.* 21 (10/11), 1105–1121.
- Faisal, M.N., Raza, S.A., 2016. IT outsourcing intent in academic institutions in GCC countries: an empirical investigation and multi-criteria decision model for vendor selection. *J. Enterp. Inf. Manag.* 29 (3), 432–453.
- Fatemi, A.M., Fooladi, L.J., 2013. Sustainable finance: a new paradigm. *Glob. Financ. J.* 24 (2), 101–113.
- Fornell, C., Larcker, D.F., 1981. Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* 18 (1), 39–50.
- Ghosh, S.K., Chatterjee, S., Chaudhuri, R., 2019. Adoption of ubiquitous customer relationship management (uCRM) in enterprise: leadership support and technological competence as moderators. *J. Relatsh. Mark.* 19 (2), 75–92.
- Ghosh, S.K., Chaudhuri, R., Vrontis, D., Thrassou, A., 2021. Adoption of artificial intelligence-integrated CRM systems in agile organizations in India. *Technol. Forecast. Soc. Chang.* 168 (1), 1–14.
- Guo, H., Su, Z., Ahlstrom, D., 2016. Business model innovation: the effects of exploratory orientation, opportunity recognition, and entrepreneurial bricolage in an emerging economy. *Asia Pac. J. Manag.* 33 (2), 533–549.
- Hair, J.F., Hollingsworth, C.L., Randolph, A.B., Chong, A.Y.L., 2017. An updated and expanded assessment of PLS-SEM in information systems research. *Ind. Manag. Data Syst.* 117 (3), 442–458.
- Hair Jr., J.F., Hult Jr., G.T.M., Ringle Jr., C., Sarstedt Jr., M., 2016. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage Publications, London.
- Hamidi, H., Moradi, S., 2017. Analysis of consideration of security parameters by vendors on trust and customer satisfaction in e-commerce. *J. Glob. Inf. Manag.* 25 (4), 32–45.
- Han, H.S., Lee, J.N., Chun, J.U., Seo, Y.W., 2013. Complementarity between client and vendor IT capabilities: an empirical investigation in IT outsourcing projects. *Decis. Support. Syst.* 55 (3), 777–791.
- Hensel, R., Visser, R., Overdiek, A., Sjoer, E., 2021. A small independent retailer's performance: influenced by innovative strategic decision-making skills? *J. Innov. Knowl.* 6 (4), 280–289.
- Hernández-Trasobares, A., Murillo-Luna, J.L., 2020. The effect of triple helix cooperation on business innovation: the case of Spain. *Technol. Forecast. Soc. Chang.* 161, 120296.
- Kar, A.K., 2018. Regulation and governance of the Internet of Things in India. *J. Digit. Policy Regul. Gov.* 20 (5), 399–412.
- Ketokivi, M.A., Schroeder, R.G., 2004. Perceptual measures of performance: fact or fiction? *J. Oper. Manag.* 22 (3), 247–264.
- Kim, S.M., Anand, G., Larson, E.C., Mahoney, J., 2019. Resource co-specialization in outsourcing of enterprise systems software: impact on exchange success and firm growth. *J. Sci. Technol. Policy Manag.* 10 (5), 1015–1046.
- Kim, Y., Seo, Y., 2021. The synergistic impact between internationalization and supply-and-demand interaction on firm performance: a study of environmental responsibility in social networking service. *Int. J. Contemp. Hosp. Manag.* <https://doi.org/10.1108/IJCHM-05-2021-0679>. In Press.
- Kline, R.B., 2005. *Principles and Practice of Structural Equation Modeling*. Guilford Press, New York.
- Kristoffersen, E., Mikalef, P., Blomsma, F., Li, J., 2021. Towards a business analytics capability for the circular economy. *Technol. Forecast. Soc. Chang.* 171, 120957.
- Lee, C.P., Shim, J.P., 2007. An exploratory study of radio frequency identification (RFID) adoption in the healthcare industry. *Eur. J. Inf. Syst.* 16 (6), 712–724.
- Leung, W.K.S., Chang, M.K., Cheung, M.L., Shi, S., 2022. Understanding consumers' post-consumption behaviors in C2C social commerce: the role of functional and relational customer orientation. *Internet Res.* 32 (4), 1131–1167.
- Levina, N., Ross, J.W., 2003. From the vendor's perspective: exploring the value proposition in information technology outsourcing. *MIS Q.* 27 (3), 331–364.
- Levinthal, D.A., 2000. Organizational capabilities in complex worlds. In: Dosi, G., Nelson, R.R., Winter, S.G. (Eds.), *The Nature and Dynamics of Organizational Capabilities*. Oxford University Press, New York, pp. 363–379.
- Li, S., Wang, K., Huo, B., Zhao, X., Cui, X., 2022. The impact of cross-functional coordination on customer coordination and operational performance: an information processing view. *Ind. Manag. Data Syst.* 122 (1), 167–193.
- Lichtenhaler, U., 2021. Explicating a sustainability-based view of sustainable competitive advantage. *J. Strateg. Manag.* <https://doi.org/10.1108/JMSA-06-2021-0126>. In Press.
- Lin, W.L., Ho, J.A., Sambasivan, M., Yip, N., Mohamed, A.B., 2021. Influence of green innovation strategy on brand value: the role of marketing capability and R&D intensity. *Technol. Forecast. Soc. Chang.* 171, 120946.
- Lindell, M.K., Whitney, D.J., 2001. Accounting for common method variance in cross-sectional research designs. *J. Appl. Psychol.* 86 (1), 114–121.

- Lindgreen, A., Di Benedetto, C.A., Brodie, R.J., van der Borgh, M., 2020. How to undertake great cross-disciplinary research. *Ind. Mark. Manag.* 90, A1–A5.
- Ling-Yee, L., 2007. Marketing resources and performance of exhibitor firms in trade shows: a contingent resource perspective. *Ind. Mark. Manag.* 36 (3), 360–370.
- MacKenzie, S.B., Podsakoff, P.M., Podsakoff, N.P., 2011. Construct measurement and validation procedures in MIS and behavioral research: integrating new and existing techniques. *MIS Q.* 35 (2), 293–334.
- Majumder, A., Guchhait, R., Sarkar, B., 2017. Manufacturing quality improvement and setup cost reduction in a vendor-buyer supply chain model. *Eur. J. Ind. Eng.* 11 (5), 588–612.
- Malyy, M., Tekic, Z., Podlatchikova, T., 2021. The value of big data for analyzing growth dynamics of technology-based new ventures. *Technol. Forecast. Soc. Chang.* 169, 120794.
- Markovic, S., Jaakkola, E., Lindgreen, A., Di Benedetto, C.A., 2021. Introducing interdisciplinary research in industrial marketing management. *Ind. Mark. Manag.* 93, A1–A3.
- Matschoss, K., Repo, P., 2020. Forward-looking network analysis of ongoing sustainability transitions. *Technol. Forecast. Soc. Chang.* 161, 120288.
- Michaelidou, N., Siamagka, N.T., Christodoulides, G., 2011. Usage, barriers and measurement of social media marketing: an exploratory investigation of small and medium B2B brands. *Ind. Mark. Manag.* 40 (7), 1153–1159.
- Mikalef, P., Pateli, A., 2017. Information technology-enabled dynamic capabilities and their indirect effect on competitive performance: findings from PLS-SEM and fsQCA. *J. Bus. Res.* 70, 1–16.
- Mishra, A., Maheswarappa, S.S., Maity, M., Samu, S., 2018. Adolescent's eWOM intentions: an investigation into the roles of peers, the Internet and gender. *J. Bus. Res.* 86, 394–405.
- Narayanan, S., Jayaraman, V., Luo, Y., Swaminathan, J.M., 2011. The antecedents of process integration in business process outsourcing and its effect on firm performance. *J. Oper. Manag.* 29 (1/2), 3–16.
- Nedjah, N., de Macedo Mourelle, L., dos Santos, R.A., dos Santos, L.T.B., 2022. Sustainable maintenance of power transformers using computational intelligence. *Sustain. Technol. Entrep.* 1 (1), 100001.
- Neely, A., 2007. *Business Performance Measurement: Unifying Theory and Integrating Practice*. Cambridge University Press, Cambridge.
- Nguyen, B., 2021. Value co-creation and social media at bottom of pyramid (BOP). *Bottom Line* 34 (2), 101–123.
- Nguyen, B., Ghosh, S.K., Bhattacharjee, K.K., Chaudhuri, S., 2020. Adoption of artificial intelligence integrated CRM system: an empirical study of Indian organizations. *Bottom Line* 33 (4), 359–375.
- Nirino, N., Miglietta, N., Salvi, A., 2019. The impact of corporate social responsibility on firms' financial performance, evidence from the food and beverage industry. *Br. Food J.* 122 (1), 1–13.
- Palvia, P.C., King, R.C., Xia, W., Palvia, S.C.J., 2010. Capability, quality, and performance of offshore IS vendors: a theoretical framework and empirical investigation. *Decis. Sci. (41)* (2), 231–270.
- Payan, J.M., Hair, J., Svensson, G., Andersson, S., Awuah, G., 2016. Modeling antecedents in trust-commitment vendor relationships. In: *Rediscovering the Essentiality of Marketing*. Springer, p. 321. [https://doi.org/10.1007/978-3-319-29877-1\\_65](https://doi.org/10.1007/978-3-319-29877-1_65).
- Pezeshkan, A., Fainshmidt, S., Nair, A., Frazier, M.L., Markowski, E., 2016. An empirical assessment of the dynamic capabilities–performance relationship. *J. Bus. Res.* 69 (8), 2950–2956.
- Piccolo, R., Chaudhuri, R., Vrontis, D., Piccolo, R., 2021. Enterprise social network for knowledge sharing in MNCs: examining the role of knowledge contributors and knowledge seekers for cross-country collaboration. *J. Int. Manag.* 27 (1), 1–12.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., Podsakoff, N.P., 2003. Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88 (5), 879–893.
- Prajogo, D.I., Ahmed, P.K., 2006. Relationships between innovation stimulus, innovation capacity, and innovation performance. *R&D Manag.* 36 (5), 499–515.
- Rajaiean, M.M., Cater-Steel, A., Lane, M., 2017. A systematic literature review and critical assessment of model-driven decision support for IT outsourcing. *Decis. Support. Syst.* 102 (10), 42–56.
- Rana, N.P., Chatterjee, S., Dwivedi, Y.K., Akter, S., 2021. Understanding dark side of artificial intelligence (AI) integrated business analytics: assessing firm's operational inefficiency and competitiveness. *Eur. J. Inf. Syst.* 31 (3), 364–387.
- Rashid, N.R.N.A., Rahman, N.I.A., Khalid, S.A., 2014. Environmental corporate social responsibility (ECSR) as a strategic marketing initiative. *Procedia Soc. Behav. Sci.* 130 (5), 499–508.
- Rasool, Z., Xue, J., Awesi, J., Abbas, S.A., Farooq, Z., 2021. Impact of client vendor communication on client satisfaction in information system-based projects. *Int. J. Manag. Proj. Bus.* <https://doi.org/10.1108/IJMPB-10-2020-0305>. In Press.
- Sainathan, A., Groenevelt, H., 2019. Vendor managed inventory contracts-coordinating the supply chain while looking from the vendor's perspective. *Eur. J. Oper. Res.* 272 (1), 249–260.
- Schilke, O., 2014. On the contingent value of dynamic capabilities for competitive advantage: the nonlinear moderating effect of environmental dynamism. *Strateg. Manag. J.* 35 (2), 179–203.
- Schreyögg, G., Kliesch-Eberl, M., 2007. How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization. *Strateg. Manag. J.* 28 (9), 913–933.
- Segars, A.H., Grover, V., 1993. Re-examining perceived ease of use and usefulness: a confirmatory factor analysis. *MIS Q.* 17 (4), 517–525.
- Sharma, R.R., Chadee, D., Roxas, B., 2016. Effects of knowledge management on client-vendor relationship quality: the mediating role of global mindset. *J. Knowl. Manag.* 20 (6), 1268–1281.
- Sharma, S., Mukherjee, S., Kumar, A., Dillon, W.R., 2005. A simulation study to investigate the use of cutoff values for assessing model fit in covariance structure models. *J. Bus. Res.* 58 (7), 935–943.
- Sheshadri, C., Rana, N.P., Dwivedi, Y.K., 2020. Social media as a tool of knowledge sharing in academia: an empirical study using valence, instrumentality and expectancy (VIE) approach. *J. Knowl. Manag.* 24 (10), 2531–2552.
- Singhal, S., Anand, A., Singh, O., 2020. Studying dynamic market size-based adoption modeling & product diffusion under stochastic environment. *Technol. Forecast. Soc. Chang.* 161, 120285.
- Skare, M., Soriano, D.R., 2021. How globalization is changing digital technology adoption: an international perspective. *J. Innov. Knowl.* 6 (4), 222–233.
- Steiger, J.H., 2007. Understanding the limitations of global fit assessment in structural equation modeling. *J. Personal. Individ. Differ.* 42 (5), 893–898.
- Su, N., Levina, N., Ross, J.W., 2016. The long-tail strategy for IT outsourcing. *MIT Sloan Manag. Rev.* 57 (2), 81–89.
- Tamilmani, K., Rana, N.P., Sharma, A., 2021. The effect of AI-based CRM on organization performance and competitive advantage: an empirical analysis in the B2B context. *Ind. Mark. Manag.* 97 (8), 205–219.
- Teece, D.J., 2012. Dynamic capabilities: routines versus entrepreneurial action. *J. Manag. Stud.* 49 (8), 1395–1401.
- Teece, D.J., 2014. The foundations of enterprise performance: dynamic and ordinary capabilities in an (economic) theory of firms. *Acad. Manag. Perspect.* 28 (4), 328–352.
- Teece, D.J., 2007. Explicating dynamic capabilities: the nature and micro foundations of (sustainable) enterprise performance. *Strateg. Manag. J.* 28 (13), 1319–1350.
- Teece, D.J., 2017. Towards a capability theory of (innovating) firms: implications for management and policy. *Camb. J. Econ.* 41, 693–720.
- Teece, D.J., Pisano, G., Shuen, A., 1997. Dynamic capabilities and strategic management. *Strateg. Manag. J.* 18 (7), 509–533.
- Teo, T.S., Liu, J., 2007. Consumer trust in e-commerce in the United States, Singapore and China. *Omega* 35 (1), 22–38.
- Thakur-Wernz, P., Wernz, C., 2020. Does R&D offshore outsourcing improve innovation in vendor firms from emerging economies? A study of biopharmaceutical industry in India. *Int. J. Emerg. Mark.* <https://doi.org/10.1108/IJOEM-03-2020-0308>. In Press.
- Thrassou, A., Chaudhuri, R., Vrontis, D., 2021. Antecedents and consequences of knowledge hiding: the moderating role of knowledge hidiers and knowledge seekers in organizations. *J. Bus. Res.* 128, 303–313.
- Thrassou, A., Chaudhuri, R., Vrontis, D., 2021. The influence of online customer reviews on customers' purchase intentions: a cross-cultural study from India and the UK. *Int. J. Organ. Anal.* <https://doi.org/10.1108/IJOA-02-2021-2627>. In Press.
- Vargo, S.L., Lusch, R.F., 2011. It's all B2B... and beyond: toward a systems perspective of the market. *Ind. Mark. Manag.* 40 (2), 181–187.
- Viswanathan, M., Rosa, J.A., Ruth, J.A., 2010. Exchanges in marketing systems: the case of subsistence consumer–merchants in Chennai, India. *J. Mark.* 74 (3), 1–17.
- Vrontis, A., Chatterjee, S., Chaudhuri, R., 2020. Does data-driven culture impact innovation and performance of a firm? An empirical examination. *Ann. Oper. Res.* <https://doi.org/10.1007/s10479-020-03887-z>. In Press.
- Vrontis, D., Chatterjee, S., Chaudhuri, R., 2021a. Does remote work flexibility enhance organization performance? Moderating role of organization policy and top management support. *J. Bus. Res.* 139, 1501–1512.
- Vrontis, D., Chatterjee, S., Chaudhuri, R., 2021b. Usage intention of social robots for domestic purpose: from security, privacy, and legal perspectives. *Inf. Syst. Front.* <https://doi.org/10.1007/s10796-021-10197-7>. In Press.
- Wamba, S.F., Gunasekaran, A., Akter, S., Dubey, R., 2019. The performance effects of big data analytics and supply chain ambidexterity: the moderating effect of environmental dynamism. *Int. J. Prod. Econ.* 222 (4), 107498.
- Wang, J.-J., Sasanipoor, N., Wang, M.-M., 2020. The influence of PRINCE2 standard on customer satisfaction in information technology outsourcing: an investigation of a mediated moderation model. *J. Enterp. Inf. Manag.* 33 (6), 1419–1442.
- Wang, M.-M., Wang, J.-J., 2019. How vendor capabilities impact IT outsourcing performance: an investigation of moderated mediation model. *J. Enterp. Inf. Manag.* 32 (2), 325–344.
- Whitaker, J., Mithas, S., Krishnan, M.S., 2010. Organizational learning and capabilities for onshore and offshore business process outsourcing. *J. Manag. Inf. Syst.* 27 (3), 11–42.
- Wilden, R., Gudergan, S.P., Nielsen, B.B., Lings, I., 2013. Dynamic capabilities and performance: strategy, structure and environment. *Long Range Plan.* 46 (1–2), 72–96.
- Winter, S.G., 2003. Understanding dynamic capabilities. *Strateg. Manag. J.* 24 (10), 991–995.
- Wu, L.Y., 2010. Applicability of the resource-based and dynamic-capability views under environmental volatility. *J. Bus. Res.* 63 (1), 27–31.
- Zavolokina, L., Dolata, M., Schwabe, G., 2016. FinTech – what's in a name?. In: *Thirty Seventh International Conference on Information Systems Project: FinTech. Association for Information Systems, Atlanta, GA.* <https://doi.org/10.5167/UZH-126806>.
- Zekos, G.I., 2003. MNEs, globalization and digital economy: legal and economic aspects. *Manag. Law* 45 (1/2), 1–296.
- Zhao, X., Huo, B., Selen, W., Yeung, J.H.Y., 2011. The impact of internal integration and relationship commitment on external integration. *J. Oper. Manag.* 29 (1/2), 17–32.

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