

How management practices shape innovation outcomes: a configurational analysis of centralisation, environmental dynamism and dual innovation in an emerging market

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Abstract

Purpose – This study aims to examine how exploratory and exploitative innovation interact with the management practice of centralisation and environmental dynamism to shape firm performance in an emerging market. It responds to limitations of universal direct-effect and contingency models by adopting a configurationally informed perspective to capture the interdependent effects of structure, managerial routines and environmental conditions.

Design/methodology/approach – A configuration-based theoretical model was developed and tested using survey data from 127 managerial respondents across Sri Lankan firms. The survey instrument was pre-tested and pilot-tested before administration. Hierarchical linear regression was used to assess direct effects and hypothesised two-way and three-way interaction effects among innovation types, centralisation and environmental dynamism.

Findings – Both exploratory and exploitative innovation exhibit strong and statistically significant negative direct effects on firm performance. Contrary to expectations, centralisation, conceptualised as a management practice, does not significantly moderate the innovation–performance relationship, nor do higher-order interaction effects involving environmental dynamism receive empirical support. The findings indicate that innovation-related performance risks dominate structural and contextual contingency effects in the examined emerging-market context.

Research limitations/implications – Findings highlight the value of configurational theorising in innovation research by clarifying the empirical boundaries of contingency and configurational arguments in emerging markets. Rather than demonstrating stable interaction effects, the study shows that innovation–performance relationships may be driven primarily by direct cost and risk dynamics. Future research should examine additional organisational practices, such as culture, learning orientation and market orientation, using longitudinal and comparative designs to better understand the interdependent mechanisms shaping innovation outcomes across emerging economies.



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Originality/value – This study advances scholarship by reframing centralisation as a core management practice rather than a structural attribute and by empirically demonstrating the limits of its conditioning role in innovation performance outcomes. It provides rare empirical evidence from a South Asian emerging market, offering a contextually grounded understanding of how managerial routines relate to, rather than systematically condition, exploratory and exploitative innovation performance under conditions of institutional volatility and resource constraint.

Keywords Exploratory innovation, Exploitative innovation, Management practices, Firm performance, Centralisation, Environmental dynamism, Sri Lanka

Paper type Research paper

1. Introduction

Concurrently pursuing exploratory innovation and exploitative innovation is deemed essential for the survival and prosperity of organisations (You *et al.*, 2023). However, the performance implications of this dual approach remain contested. While some scholars argue that exploratory activities generate new knowledge and opportunities that enhance performance (He and Wong, 2004), others highlight their resource-intensive nature, which may lead to innovation traps, escalating costs and diminishing returns (Chen *et al.*, 2019; Gupta *et al.*, 2006; Wang and Li, 2008). Furthermore, Jansen *et al.* (2006) suggested that dynamic environments are conducive to exploratory innovation, while competitive environments align better with exploitative innovations. Empirical findings also remain inconsistent, with studies reporting linear (e.g. Prajogo and McDermott, 2014), contingency-based (e.g. Jansen *et al.*, 2006; Raisch and Birkinshaw, 2008) and null effects (Bierly and Daly, 2007). These mixed results suggest that the relationship between innovation and performance depends on how organisations enact management practices and configure internal mechanisms in response to environmental conditions. Recent work further cautions that under conditions of uncertainty, no single organisational or strategic configuration reliably guarantees superior performance, as innovation payoffs may remain fragile even when theoretically appropriate structures are adopted (Chen *et al.*, 2025). In emerging-market contexts characterised by resource scarcity, institutional volatility and intense competitive pressures, this fragility is likely to be amplified, such that both exploratory and exploitative innovation may impose short-term performance penalties as firms struggle to absorb innovation costs, translate efficiency gains into margins or sustain differentiation (Bérard and Fréchet, 2020; Gupta *et al.*, 2006; Wang and Li, 2008). Accordingly, this study questions:

- Q1. How does the interplay between exploratory and exploitative innovation, centralisation and environmental dynamism influence firm performance?

Configurations involving organisational design, decision-making authority and environmental factors shape distinct arrangements that influence performance (Bodolica and Spraggon, 2021; Chirico and Bau', 2014; Cosh *et al.*, 2012; Yang *et al.*, 2015). The simultaneous pursuit of exploratory and exploitative innovation therefore requires appropriate adjustments to organisational structure and decision-making arrangements (Bodolica and Spraggon, 2021; Marín-Idárraga *et al.*, 2022). Among these organisational choices, recent work increasingly recognises centralisation as a core management practice rather than a purely structural parameter (Ozen and Ozturk-Kose, 2024; Pryor *et al.*, 2024). Management practices refer to the systems through which firms allocate authority, monitor performance and coordinate activities (Bloom and Van Reenen, 2007). Centralisation, defined as the concentration of decision-making authority at senior levels (Jansen *et al.*, 2006; Pryor *et al.*, 2024), shapes

information flows, responsiveness, autonomy and the way innovation influences performance (Ozen and Ozturk-Kose, 2024; Pryor *et al.*, 2024). The effects of centralisation are also likely to differ across contexts. Firms in developing economies tend to operate with more centralised structures and face more binding resource constraints (Bloom *et al.*, 2010; Yang *et al.*, 2015), suggesting that centralisation may serve different functions compared to developed economies. In such settings, centralisation may support exploitative innovation and shape the risks associated with exploratory innovation. Given that centralised organisational forms are more common in emerging markets (Yang *et al.*, 2015), examining the interplay between centralisation, innovation and environmental dynamism becomes particularly relevant.

However, much of the existing research examining organisational characteristics and environmental conditions on this relationship relies on direct-effect (e.g. Pertusa-Ortega and Molina-Azorín, 2018; Prajogo and McDermott, 2014) or contingency-based models (e.g. Andrade *et al.*, 2020; Chen and Liu, 2020; Parida *et al.*, 2016; Yuan *et al.*, 2021). These approaches provide limited insight into the inherent tensions associated with simultaneously pursuing exploratory and exploitative innovation and tend to overlook how organisational design elements jointly shape outcomes. To address this gap, based on a configurational approach (Harms *et al.*, 2009), this study uses 127 managerial responses gathered from a survey of managers in Sri Lankan companies to better explain these interdependencies. In this context, Sri Lanka is examined as a contextually grounded illustrative case of an emerging economy, where tightly constrained organisational and institutional conditions accentuate the performance consequences of innovation and allow closer examination of how management practices shape outcomes.

The present study makes several contributions. Firstly, it provides evidence that in a resource-constrained emerging-economy context, both exploratory and exploitative innovation can entail short-term performance penalties, extending prior debates on whether dual innovation enhances or undermines firm performance (e.g. Gupta *et al.*, 2006; Wang and Li, 2008). Secondly, it contributes to the management practice literature by showing that centralisation, conceptualised as a decision-making practice, does not systematically condition the innovation–performance relationship, thereby qualifying contingency-based expectations that formal decision authority reliably amplifies or mitigates innovation returns (Bérard and Fréchet, 2020; Hossain *et al.*, 2024). Thirdly, it highlights the limits of assuming that environmental dynamism activates higher-order complementarities between innovation modes and decision-making practices in emerging markets, where performance outcomes may be shaped by execution constraints that are not readily addressed through formal structural design (He *et al.*, 2025). Together, these findings reposition centralisation not only as an organisational design choice but as a management practice whose performance relevance may be contingent, empirically fragile and sensitive to the execution realities of emerging-market firms. What follows is a succinct review of the literature underpinning the hypotheses, followed by the methodological approach, results and implications for research and practice.

2. Theoretical background and hypotheses

Exploratory innovations aim at meeting the needs of emerging markets or new customers, while exploitative innovations try to satisfy the needs of incumbent customers or markets (Benner and Tushman, 2003). The execution of these innovations is more complex and contradictory, and firms must change their structural alignments accordingly (O'Reilly and Tushman, 2013). Exploratory innovation is supported by decentralised authority, organic communication and flexible processes in highly dynamic environments whereas exploitative innovation benefits from more centralised, formalised structures (Tushman and O'Reilly, 1996). These structural

differences underscore the need to understand how firms balance the competing demands associated with each innovation type.

In line with work on management practices (e.g. Bloom *et al.*, 2010; Kelliher and Reinl, 2009; Ozen and Ozturk-Kose, 2024), this study treats centralisation not merely as a structural attribute but as a core managerial practice that shapes coordination, information flows and decision rights, thereby conditioning how innovation translates into performance. For instance, concentrated decision authority and routinised procedures of an organisation (Chang and Hughes, 2012; Jansen *et al.*, 2006; Pryor *et al.*, 2024) can constrain idea variety and slow bottom-up knowledge flows (Cardinal, 2001; Chang and Hughes, 2012). As such, centralisation becomes a key mechanism through which firms translate innovation activities into performance outcomes.

Organisations must reconcile the tensions inherent in simultaneously pursuing exploratory and exploitative innovation (Bodolica and Spraggon, 2021; Raisch and Birkinshaw, 2008). This study proposes that the relationship between these innovation types and firm performance is conditioned by the degree of centralisation, and that this effect depends on the level of environmental dynamism. This is especially relevant in developing economies, where firms face tighter resource constraints, greater environmental volatility and weaker institutional support (Yang *et al.*, 2015). Prior work shows that innovation outcomes differ sharply across development contexts and that management practices often play a disproportionately strong role in shaping firm performance in emerging markets (Bloom *et al.*, 2010; Wang *et al.*, 2024).

In emerging markets, resource scarcity and limited organisational capabilities make centralisation particularly consequential (Bloom and Van Reenen, 2007; Kelliher and Reinl, 2009). Centralised decision-making can support effective resource allocation, mitigate the risks of exploratory innovation, coordinate diverse activities and maintain strategic focus (Argyres and Silverman, 2004; Cosh *et al.*, 2012; Yang *et al.*, 2015). Yet, the performance effects of exploratory and exploitative innovation remain inconsistent, with studies reporting positive, negative and null relationships (Lavie *et al.*, 2010). Much of this inconsistency stems from a reliance on direct-effect (e.g. Pertusa-Ortega and Molina-Azorín, 2018) and contingency models (e.g. Andrade *et al.*, 2020; Chen and Liu, 2020; Yuan *et al.*, 2021; Zhang *et al.*, 2021) that do not capture the multi-dimensional interplay among innovation types, organisational practices and environmental conditions.

Accordingly, this study adopts a configurational perspective, proposing and testing a model that incorporates exploratory innovation and exploitative innovation (strategy), centralisation (management practice) and environmental dynamism (environment) (Figure 1). Consistent with prior research, we treat exploratory and exploitative innovation as discrete but simultaneously executable choices (e.g. He and Wong, 2004; Jansen *et al.*, 2006). These innovation modes generate inherent trade-offs as they compete for limited organisational resources (Lavie *et al.*, 2010), making a configurational approach theoretically appropriate.

2.1 Exploratory and exploitative innovation and firm performance (H1 and H2)

Emerging markets are characterised by intense competition, high demand volatility and institutional unpredictability (Huang, 2023; Malodia *et al.*, 2020), pushing firms to search for new growth avenues through exploratory innovation. However, such environments lack the stable infrastructure, predictable regulation and reliable consumer behaviour required for exploratory initiatives to gain traction, particularly in the short term (Huang *et al.*, 2025). Moreover, exploration competes for scarce resources and requires flexible, decentralised structures that are often absent in constrained contexts (Bérard and Fréchet, 2020). As a result, exploratory projects often face long learning cycles, high market-education costs and

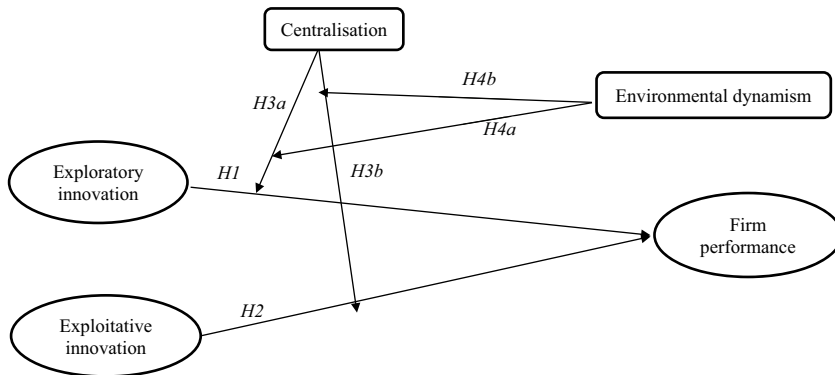


Figure 1. The proposed conceptual model

Note(s): The conceptual model is tested using separate empirical models for exploratory and exploitative innovation to ensure estimation stability and avoid overfitting

Source: Authors' own work

difficulty mobilising complementary resources, increasing the likelihood of stalled diffusion, cost overruns and performance declines in the short term (Cardinal, 2001; Sheremata, 2000).

By contrast, exploitative innovation is often argued to fit more naturally with the constraints of emerging markets. Price sensitivity, accessibility challenges and heterogeneous local preferences favour incremental, cost-efficient adaptations that leverage existing capabilities and knowledge bases (Jansen *et al.*, 2006; Malodia *et al.*, 2020). Exploitative initiatives also help firms cope with structural resource scarcity by improving operational efficiency, reducing waste and reallocating scarce resources towards immediate revenue-generating activities (Mueller *et al.*, 2013), while aligning with established routines and disciplined execution commonly observed in resource-constrained firms (Bérard and Fréchet, 2020). Yet, because they reinforce established routines, an excessive and prolonged focus on exploitation may create inertia and erode long-term adaptability (Sheremata, 2000). Therefore, it is hypothesised that:

- H1. Exploratory innovations are negatively related to firm performance in emerging market environments.
- H2. Exploitative innovations are positively related to firm performance in emerging market environments.

2.2 Exploratory and exploitative innovation and firm performance: moderation effect of centralisation (H3a and H3b)

The idiosyncratic and localised consumption patterns in emerging markets lead to diverse and heavily fragmented consumer populations (Dawar and Chattopadhyay, 2002), requiring firms to engage in exploratory innovation. Centralisation, as a core management practice, helps emerging market firms maintain clear strategic focus and improve coordination between departments in pursuing dual innovations (Yang *et al.*, 2015). In particular, higher centralisation enables firms to react quickly to the needs of current customers and assists in speeding up exploitative innovation by increasing information-processing efficiency

(Gopalakrishnan and Damanpour, 1994; Yang *et al.*, 2015) and facilitating the coordination of individual actions (Zhang and Sun, 2023).

However, the mechanisms through which centralisation interacts with the two innovation types differ. Exploratory innovation requires autonomy, open communication and decentralised search processes, which are often constrained under centralised structures. Thus, although centralisation provides risk-mitigation routines that help emerging-market firms assess uncertainty and allocate resources strategically (Argyres and Silverman, 2004; Cardinal, 2001; Sheremata, 2000), excessive centralisation may still restrict the diversity of ideas and slow experimentation, weakening the performance benefits of exploratory innovation.

Conversely, exploitative innovation relies on routinised processes, efficiency improvements and alignment with existing knowledge, conditions that centralisation reinforces. As a management practice, centralisation promotes standardisation, reduces variance in decision-making and ensures tighter alignment between incremental improvements and existing market requirements, which is theorised to support the effectiveness of exploitative innovation (Cosh *et al.*, 2012; Yang *et al.*, 2015). Given these mechanisms, centralisation is expected to moderate the effects of exploratory and exploitative innovation on performance in emerging markets. Therefore, it is hypothesised that:

- H3a. The relationship between exploratory innovation and firm performance will be moderated by centralisation such that high exploratory innovation is more strongly related to firm performance when the centralisation is low rather than high in emerging market context.
- H3b. The relationship between exploitative innovation and firm performance will be moderated by centralisation such that high exploitative innovation is more strongly related to firm performance when the centralisation is high rather than low in emerging market context.

2.3 Exploratory and exploitative innovation and firm performance: moderated moderation effect of environmental dynamism (H4a and H4b)

Environmental dynamism refers to the rate and unpredictability of change in a firm's external environment (Dess and Beard, 1984), characterised by rapid technological shifts, volatile customer preferences and fluctuations in input and product markets (Wijbenga and Van Witteloostuijn, 2007). Emerging markets often exhibit highly unstable political, legal and market conditions, requiring firms to respond swiftly to opportunities and threats while operating under severe managerial and resource constraints (Visser and Scheepers, 2021). In such contexts, existing products and services quickly lose relevance as customer needs shift, intensifying competition and shortening product life cycles (Zahra and Bogner, 2000).

Dynamic environments typically reward decentralised decision-making because experimentation, rapid iteration and local flexibility enable firms to adapt quickly (Yu *et al.*, 2019). However, uncertainty simultaneously constrains firms' ability to identify opportunities, evaluate alternatives and align innovation with strategic objectives (Schilke, 2014). This creates a need for coordinated decision-making, strong information-processing routines and rapid resource mobilisation (Eisenhardt and Martin, 2000). In emerging markets, where institutional voids and resource constraints limit adaptive capacity, centralisation as a management practice can provide the necessary discipline, coordination and risk-management routines to support innovation activities (Argyres and Silverman, 2004; Sheremata, 2000; Yang *et al.*, 2015). Accordingly, environmental dynamism is expected to condition the moderating

role of centralisation on the innovation-performance relationship, strengthening or weakening its influence depending on the innovation type:

- H4a.* There is a three-way interaction among exploratory innovation, centralisation and environmental dynamism in predicting firm performance such that in the context of high environmental dynamism, the negative relationship between exploratory innovation and firm performance will be stronger when centralisation is low as opposed to high in emerging market context.
- H4b.* There is a three-way interaction among exploitative innovation, centralisation and environmental dynamism in predicting firm performance such that in the context of high environmental dynamism, the positive relationship between exploitative innovation and firm performance will be stronger when centralisation is high as opposed to low in emerging market context.

3. Methodology

3.1 Sample

Using the registration database of the Institute of Management of Sri Lanka (IMSL) and Sri Lanka Institute of Marketing (SLIM) as the sampling frame of the study, managers of Sri Lankan companies registered in this database were invited for the study. IMSL and SLIM are the premier professional bodies in Sri Lanka in respective disciplines that are incorporated by acts of parliament. This study bases its empirical approach on strategic management literature that highlights the need for the perspective of individuals rather than from that of the whole organisation (Luoma, 2005) and innovation literature emphasising the importance of management respondents' capacity to provide a holistic view of the operational level of the organisation and the overall strategic direction set by senior executives (To *et al.*, 2019). Accordingly, the sampling frame is intentionally defined at the level of managerial professionals rather than firms, as the study examines innovation and centralisation through the lens of managerial decision-making and strategic discretion. Hypotheses were tested by using survey data from 127 managerial-level employees (e.g. marketing managers, production managers, HR managers and financial managers) in Sri Lankan companies registered in the above databases, representing a cross-section of professionally affiliated managerial roles across functional areas.

3.2 Data collection instrument

Built on the Qualtrics survey platform (Mehlhorn *et al.*, 2015), the survey included two screening questions and items measuring the perception of environmental dynamism, exploratory innovation and exploitative innovation activities and centralisation of the firms. Screening questions ensured the participation of managerial-level employees genuinely from Sri Lankan corporates, not from other organisations (e.g. Lepoutre *et al.*, 2013). The first screening question asked, "what type of an organisation are you working for?" with options of "non-governmental organisation, government department, public limited company, and private limited company". The second screening question asked about the management level of responding employee's position: "at what level of management do you operate in this organisation?" with options of "C-Suite (i.e. CEO, CFO, COO, etc.), top/senior management, middle management, operations management, supervisory position and non-managerial".

Procedural approaches to reduce the common method bias of single respondent data (Podsakoff *et al.*, 2003) included the use of an ethics Participant Information Sheet following

Human Research Ethics Committee guidelines and approval (SUHREC20191291-3273) to clarify the study purpose (Jordan and Troth, 2020); measuring study variables using existing scales; maintaining respondents' anonymity and confidentiality to lower evaluation apprehension; stripping the ambiguous and irrelevant terms in measurement items through a pre-test; and providing additional explanations for any vague terms (Jordan and Troth, 2020; Podsakoff *et al.*, 2003). Data integrity was assured by being cautious about the length of the survey; avoiding the use of extensive recall questions; placing settings to avoid multiple enrolments of respondents; increasing the variety of question formats; and providing respondents with clear instructions (Joinson, 1998).

3.2.1 Pre-test. Five managerial-level employees from Sri Lankan firms who were studying for a Master of Business Administration degree at a state University were involved in the pre-test of the survey (de Vaus, 1995). They were asked to comment on any issues in filling out the survey, inconsistencies in terminology and the relevancy and usability of the survey items. Feedback mainly included ambiguous wording, inconsistent use of terms and technical issues related to filling out the survey. To ensure the reliability, measurement and construct validity of the measurement items (Malhotra and Grover, 1998), the authors jointly went through the whole survey, discussed the feedback and refined the survey items.

3.2.2 Main survey. Following the consent and approval from IMSL and SLIM to disseminate the survey among the managers of Sri Lankan companies who are registered members of those two institutions, the authors shared the survey link with IMSL and SLIM. Subsequently, to assure the strict confidentiality and anonymity of the respondents, IMSL and SLIM dispatched the survey link in an email to their registered members on behalf of the research team. Three hundred and eight respondents had accessed the survey, and out of them, 102 either were non-managerial employees or from non-corporates and hence, screened out. Another 79 responses had missing data for more than 30% of the data points and were hence treated as incompletes since this "person-level" missingness restricted the application of unbiased missing data treatments available under systematic missingness such as maximum likelihood (ML) and multiple imputations (MI) (Newman, 2014). Therefore, only 127 responses were usable for further analysis of the study. The demographic profile of these respondents and affiliated firms is as follows: 70% of the respondents are male; 68% of the respondents hold a masters' degree; 32% of the respondents serve in general management-related areas, while another 27% work in marketing and sales-related positions; 45% of the firms are limited liability firms; 58% are service-oriented firms and the average firm age is 16.24 years.

To test for non-response bias, early (i.e. received before the reminder, $n = 21$) and late (i.e. received after the reminder, $n = 106$) respondent groups were compared using the independent sample *t*-test in terms of all the study variables following previous studies (Lin and Wu, 2014; O'Regan and Ghobadian, 2006). The statistically insignificant tests for all the study variables except for firm performance which was marginally significant ($t = 2.56$, $p < 0.10$; Levene's test for equal variance, $F = 2.78$, $p < 0.10$) confirmed the absence of a serious threat of non-response bias in the data (Armstrong and Overton, 1977). Consistent with prior survey research, this comparison is interpreted as a diagnostic indicator rather than a definitive test of non-response bias.

3.3 Measures

To ensure the measurement and construct validity and reliability (Malhotra and Grover, 1998), following survey research methods (de Vaus, 1995), multiple item measures from existing scales were used to measure the study variables. Items measuring exploitative innovation and exploratory innovation were sourced from Jansen *et al.* (2006). Responses

were provided on a seven-point Likert scale ranging from 1 = “strongly disagree” to 7 = “strongly agree,” indicating the respondent’s subjective perception of the practice related to study variables in the affiliated firm. Performance was measured using items from [Vorhies and Morgan \(2005\)](#) where respondents rated their perception of four financial performance indicators relative to their major competitors ([Table 1](#)). Environmental dynamism was measured by adapting the items from [Miller and Dröge \(1986\)](#). Cronbach’s alpha test ([Malhotra and Grover, 1998](#)) indicated strong reliability levels for exploratory in ($\alpha = 0.88$) and exploitative innovation ($\alpha = 0.86$); centralisation ($\alpha = 0.87$); financial performance ($\alpha = 0.95$); and environmental dynamism ($\alpha = 0.72$). Items *EPLORA1* – “our unit/branch/department/company accepts demands that go beyond existing products and services” and *EXPLO11* – “we frequently refine the provision of existing products and services” were removed from the analysis due to being lower than 0.4 in its individual item correlation ([Hinkin, 2005](#)). Harman’s single factor test ([Podsakoff et al., 2012](#)) with only 28% of the variance explained by the first factor indicated the absence of a dominant single-factor structure, consistent with the procedural remedies implemented to mitigate common method bias ([Hinkin, 2005](#)).

In addition to reliability assessment, discriminant validity was evaluated at the measurement level through exploratory factor analysis (EFA), examining factor separability, cross-loadings and the emergence of theoretically consistent factor structures. Following [Hair \(2010\)](#) and [Hinkin \(2005\)](#), discriminant validity was inferred from items loading strongly on their intended constructs with minimal cross-loadings on alternative factors. Multicollinearity diagnostics were used subsequently to assess estimation stability rather than construct distinctiveness.

3.4 Exploratory factor analysis

The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was 0.74 ([Kaiser, 1970](#)) with statistically significant Bartlett’s test of sphericity [Chi-square = 2746.22, $df = 351$ at $p = 0.00$] ([Bartlett, 1950](#)). Communalities of the items are all at or above 0.60 indicating strong factorability of items and suitability of including them in subsequent analyses ([Kim and Mueller, 1978](#)). Factors were extracted using the principal component analysis with 4 kappa in the Promax rotation technique ([Kim and Mueller, 1978](#)). A seven-factor solution was generated explaining a total variance of 74.78% ([Hinkin, 2005](#)). Item *EXPLOA2* reported a low factor loading (<0.4) while items *EXPLOI3* and *EXPLOI6* had negative factor loadings subsequently leading to the removal from the analysis ([Hair, 2010](#)). The repeated EFA generated a seven-factor solution with a strong factorability of data confirmed by all criteria applied previously. The KMO measure of sampling adequacy was 0.72 ([Kaiser, 1970](#)), Bartlett’s test of sphericity was statistically significant (chi-square = 2289.99, $df = 276$, $p = 0.00$) and the solution explained 76.68% of the variance ([Hinkin, 2005](#)). Environmental dynamism items loaded with three clear sub-constructs: *ENV1*, *ENV2* and *ENV6* loaded on one component, *ENV5* and *ENV4* loaded on one component and *ENV3* loaded on another component. Analysis repeated after removing *ENV3*, *ENV4* and *ENV5*. The final EFA extracted the expected five-factor solution where the KMO measure of sampling adequacy was 0.74 ([Kaiser, 1970](#)), and Bartlett’s test of sphericity was statistically significant (Chi-square = 2102.19, $df = 210$, $p = 0.00$). The final pattern matrix is presented in [Table 1](#). The extracted factor structure demonstrates empirical separation between exploratory innovation, exploitative innovation, centralisation, environmental dynamism and firm performance, consistent with their theoretical conceptualisation. Items exhibited strong primary loadings on their intended constructs and limited cross-loadings, supporting discriminant validity at the measurement level ([Hair, 2010](#); [Hinkin, 2005](#)). Although

Table 1. Factor loadings of measurement items

Items		Component				
		1	2	3	4	5
EXPORA3	We experiment with new products and services in our local market	-0.476	0.157	0.830	-0.277	-0.202
EXPORA4	We commercialise products and services that are completely new to our company	-0.413	0.118	0.894	-0.324	-0.308
EXPORA5	We frequently use new opportunities in new markets	-0.543	0.251	0.872	-0.577	-0.193
EXPORA6	Our unit/branch/department/company regularly uses new distribution channels	-0.530	0.237	0.794	-0.427	-0.108
EXPORA7	We regularly search for and approach new clients in new markets	-0.240	0.192	0.724	-0.601	0.035
EXPLOIT2	We regularly implement small adaptations to existing products and services	0.313	-0.076	-0.483	0.831	0.201
EXPLOIT4	We improve our provision's efficiency of products and services	0.349	-0.168	-0.423	0.827	0.053
EXPLOIT5	We increase economies of scales in existing markets	0.504	-0.169	-0.471	0.720	0.217
EXPLOIT7	Lowering the costs of internal processes is an important objective	0.150	0.059	-0.167	0.712	0.150
<i>The performance of your business over the past year relative to your major competitors</i>						
FINP1	Business profitability	0.937	-0.110	-0.449	0.358	0.231
FINP2	Return on investment (ROI)	0.959	-0.158	-0.451	0.345	0.145
FINP3	Return on sales (ROS)	0.931	-0.134	-0.488	0.304	0.222
FINP4	Reaching financial goals	0.880	-0.202	-0.563	0.407	0.279
<i>In your major industry in Sri Lanka</i>						
ENV11	The speed of technological change is very high	0.275	-0.251	-0.302	0.303	0.828
ENV12	Consumer demographics are changing fast	0.054	0.044	-0.110	0.156	0.897
ENV16	Industry-wide spending on advertising has been increasing	0.359	0.002	-0.201	0.036	0.753
CEND1	There can be little action taken here until a supervisor approves a decision	-0.275	0.793	0.116	-0.163	-0.119
CEND2	A person who wants to make his/her own decisions would be quickly discouraged	-0.112	0.803	0.135	-0.134	0.020
CEND3	We have to obtain permission from top management even for decisions related to small matters	-0.146	0.863	0.194	-0.175	0.012
CEND4	Workers of functional departments always need to obtain permission from their functional managers (marketing/finance etc) before taking any actions related to organisational matters	0.044	0.825	0.248	0.116	-0.018
CEND5	Most decisions people make here have to have their immediate boss's/supervisor's approval	-0.061	0.775	0.153	0.030	-0.093
Note(s): Extraction method: Principal component analysis. Rotation method: Promax with Kaiser normalisation. Rotation converged in five iterations. Key: EXPORA: exploratory innovation, EXPLOI: exploitative innovation, FINP: financial firm performance, ENV: environmental dynamism; CEND: centralisation						
Source(s): Authors' own work						

exploratory and exploitative innovation are theoretically related, their emergence as separate factors in the EFA indicates that respondents were able to meaningfully distinguish between these innovation modes. Consistent with prior methodological guidance, although variance inflation factors for all the variables are less than the generally accepted cut-off value of 5 (Hair *et al.*, 2021), these diagnostics were used to assess regression estimation stability rather than construct-level discriminant validity. Following Aiken *et al.* (1991), all variables were zero-centered to prevent any potential multicollinearity issues in subsequent analyses.

3.5 Control variables

Firm age (number of years in the operation since the firm's founding) and firm ownership were used as control variables in this study. Younger firms tend to become more organic and dynamic than older firms (Jansen *et al.*, 2006). Firm ownership was a categorical dummy variable with three groups: private limited companies, public limited companies and others (Chen *et al.*, 2019).

Given the study's theory-driven focus on incremental explanatory effects and interaction testing, hierarchical linear regression was used following established practice in strategic management and innovation research, with construct validity assessed prior to model estimation.

4. Results

Table 2 reports the descriptive statistics and zero-order correlations among the study variables.

As shown in Table 2, exploratory and exploitative innovation are highly correlated ($r = 0.96$), indicating potential concerns regarding empirical separability. Given this extreme overlap and the modest sample size ($N = 127$), a cautious and conservative analytic strategy was adopted. Specifically, to enhance statistical robustness and reduce multicollinearity-driven instability in higher-order interaction terms, the moderation models were simplified and estimated separately for each innovation type. This approach follows established recommendations for interaction testing under conditions of limited power and high construct overlap (Aiken *et al.*, 1991). Accordingly, two separate hierarchical regression analyses were conducted, each comprising four models with firm performance as the dependent variable. Table 3 presents the results for exploratory innovation and Table 4 reports the results for exploitative innovation.

Direct effects – In both analyses, the baseline models including only control variables explained approximately 2% of the variance in firm performance. For exploratory innovation (Table 3), Model 2 shows a substantial increase in explained variance ($\Delta R^2 = 0.298$,

Table 2. Mean, standard deviation and correlations of the variables

No.	Variable	Mean	SD	1	2	3	4	5
1	Firm age	30.97	26.08					
2	Exploratory innovation	3.26	1.34	0.140				
3	Exploitative innovation	5.08	1.08	0.088	0.960**			
4	Centralisation	4.28	1.12	0.316**	0.198*	0.193*		
5	Environmental dynamism	4.91	1.27	-0.071	-0.263**	-0.261**	-0.092	
6	Firm performance	4.76	1.09	-0.141	-0.561**	-0.545**	-0.146	0.280**

Note(s): **Correlation is significant at the 0.01 level (two-tailed); *Correlation is significant at the 0.05 level (two-tailed); Since firm ownership is a categorical variable, it is not included in this table

Source(s): Authors' own work

Table 3. Results of the hierarchical linear regression: exploratory innovation and firm performance relationship

Model	Control variables model β	Direct effect model β	Contingency model β	Configurational model β
<i>Dependent variable: Firm performance</i>				
Constant	5.07	6.44	6.42	6.39
<i>Control variables</i>				
Firm age	-0.15	-0.05	-0.06	-0.05
D1_ Private limited companies ^a	-0.09	-0.08	-0.08	-0.09
D2_Public limited companies ^b	-0.04	-0.08	-0.09	-0.11
<i>Independent variables</i>				
Exploratory innovation		-0.55***	-0.54***	-0.52***
Centralisation		-0.00	-0.00	-0.01
<i>Interactions</i>				
Exploratory innovation $\times$ centralisation			0.07	0.06
Exploratory innovation $\times$ dynamism			-0.03	-0.03
Centralisation $\times$ dynamism			0.06	0.08
Exploratory innovation $\times$ centralisation $\times$ environmental dynamism				0.07
R-square	0.026	0.323	0.332	0.335
Adjusted R-square	0.002	0.295	0.287	0.283
R-square change	0.026	0.298***	0.009	0.003
Note(s): *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$; Standardised β coefficients are reported; ^{a,b} Firm ownership was a categorical variable with three groups (i.e. private limited, public limited and others) and thus, two dummy variables were included in the model				
Source(s): Authors' own work				

$p < 0.001$). Exploratory innovation exhibits a negative and statistically significant direct effect on firm performance ($b = -0.55$, $p < 0.001$). This effect remains stable in magnitude and significance across Models 2–4, providing strong support for *H1*. For exploitative innovation (Table 4), Model 2 also yields a sizeable increase in explanatory power ($\Delta R^2 = 0.283$, $p < 0.001$). Exploitative innovation is likewise negatively related to firm performance ($b = -0.54$, $p < 0.001$). While this relationship is statistically significant, its direction contradicts the hypothesised positive association. Thus, *H2* is not supported, although the results indicate a robust negative direct effect. Bootstrap analyses with 5,000 resamples confirm the stability of these direct effects for both innovation types, with bias-corrected confidence intervals excluding zero.

Two-way interaction effects – The contingency models (Model 3) introduce the two-way interaction terms involving centralisation and innovation types. These models yield only marginal increases in explained variance ($\Delta R^2 = 0.009$ for exploratory innovation; $\Delta R^2 = 0.016$ for exploitative innovation) and none of the interaction coefficients reach statistical significance ($p > 0.10$). Specifically, the interaction between centralisation and exploratory innovation ($\beta = 0.07$, $p > 0.10$) and between centralisation and exploitative innovation ($b = 0.10$, $p > 0.10$) are not statistically significant. Accordingly, *H3a* and *H3b* are not supported.

Three-way interaction effects – Model 4 introduces the three-way interaction terms involving innovation type, centralisation and environmental dynamism. These configurational models produce only negligible improvements in explained variance ($\Delta R^2 \approx 0.003$ for exploratory innovation; $\Delta R^2 \approx 0.000$ for exploitative innovation). Consistent with

Table 4. Results of the hierarchical linear regression: exploitative innovation and firm performance relationship

Model	Control variables model β	Direct effect model β	Contingency model β	Configurational model β
<i>Dependent variable: Firm performance</i>				
Constant	5.07	6.39	6.31	6.31
<i>Control variables</i>				
Firm age	-0.15	-0.10	-0.10	-0.10
D1_ Private limited companies ^a	-0.09	-0.07	-0.06	-0.06
D2_Public limited companies ^b	-0.04	-0.03	-0.04	-0.04
<i>Independent variables</i>				
Exploitative innovation		-0.54***	-0.50***	-0.50***
Centralisation		0.00	-0.01	-0.01
<i>Interactions</i>				
Centralisation $\times$ environmental dynamism			0.08	0.08
Exploitative innovation $\times$ centralisation			0.10	0.10
Exploitative innovation $\times$ dynamism			-0.06	-0.06
Exploitative innovation $\times$ centralisation $\times$ dynamism				-0.00
R-square	0.026	0.308	0.324	0.324
Adjusted R-square	0.002	0.279	0.278	0.272
R-square change	0.026	0.283***	0.016	0.000

Note(s): *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$; Standardised β coefficients are reported; ^{a,b}Firm ownership was a categorical variable with three groups (i.e. private limited, public limited and others) and thus, two dummy variables were included in the model

Source(s): Authors' own work

the two-way results, the three-way interaction terms are not statistically significant for either exploratory innovation ($b = 0.07$, $p > 0.10$) or exploitative innovation ($b = -0.003$, $p > 0.10$). Bootstrap confidence intervals for these higher-order terms include zero, indicating a lack of robust moderation effects. Thus, *H4a* and *H4b* are not supported.

Overall, the results show strong and consistent negative direct effects of both exploratory and exploitative innovation on firm performance, while neither centralisation nor environmental dynamism exerts a statistically robust moderating or configurational influence. To assess the robustness of the regression estimates given the modest sample size and the inclusion of higher-order interaction terms, all models were re-estimated using bias-corrected bootstrap confidence intervals based on 5,000 resamples. The bootstrap results confirm the stability of the main findings. Specifically, the negative direct effect of exploratory innovation on firm performance remains statistically significant (e.g. Model 4: $b = -0.424$, BCa 95% CI $[-0.615, -0.177]$), as does the direct effect of exploitative innovation (e.g. Model 4: $b = -0.433$, BCa 95% CI $[-0.645, -0.249]$), with confidence intervals excluding zero in all specifications. In contrast, the two-way interaction terms involving innovation and centralisation (e.g. exploratory $\times$ centralisation: $b = 0.053$, BCa 95% CI $[-0.217, 0.238]$; exploitative $\times$ centralisation: $b = 0.092$, BCa 95% CI $[-0.122, 0.242]$) and the three-way interaction terms incorporating environmental dynamism (e.g. exploratory $\times$ centralisation $\times$ dynamism: $b = 0.063$, BCa 95% CI $[-0.190, 0.354]$; exploitative $\times$ centralisation $\times$ dynamism: $b = -0.003$, BCa 95% CI $[-0.249, 0.396]$) remain non-significant, with confidence intervals spanning zero. These results indicate that the

absence of statistically significant moderation and configurational effects is not driven by estimation artefacts or distributional assumptions but reflects a substantive and robust pattern in the data.

5. Discussion

5.1 Overview of the findings

This study identifies how innovation outcomes unfold when exploratory and exploitative innovation are enacted under conditions of managerial centralisation and environmental dynamism in an emerging-market context. Three theoretically meaningful patterns emerge from the analysis. Firstly, both exploratory and exploitative innovation are associated with negative short-term performance outcomes, indicating that innovation activities, regardless of orientation, impose substantial cost and execution burdens on firms operating under resource-constrained conditions. Secondly, centralisation, when conceptualised as an enacted management practice rather than a structural attribute, does not condition the performance consequences of either innovation mode, suggesting that decision authority alone is insufficient to alter innovation payoffs. Thirdly, environmental dynamism fails to activate higher-order configurational effects involving innovation and decision-making practices, indicating that environmental volatility does not systematically reshape the innovation–performance relationship in this context. By reframing centralisation as a management practice rather than a static structural parameter, this study clarifies the empirical boundaries of contingency logic and advances a practice-oriented understanding of how managerial routines shape, yet do not necessarily stabilise, innovation performance in emerging economies.

5.2 Exploratory innovation and firm performance

Consistent with H_1 , exploratory innovation is negatively associated with firm performance in the examined emerging-market context. This finding indicates that, in emerging-market contexts, exploration tends to generate short-term performance penalties rather than immediate returns. This outcome is consistent with studies emphasising the short-term costs and risks associated with exploratory innovation (e.g. [Bérard and Fréchet, 2020](#); [Osiyevskyy et al., 2020](#); [Ramachandran and Badrinarayanan, 2016](#)) while qualifying research that highlights its longer-term or conditional performance benefits (e.g. [Huang et al., 2025](#); [Hughes, 2018](#); [Voss and Voss, 2013](#)). Whereas optimistic accounts focus on conditions under which exploratory initiatives eventually translate into substantive performance gains, the present findings capture the immediate performance consequences of exploration in contexts characterised by resource scarcity, institutional unpredictability and volatile demand conditions.

From a contextual perspective, emerging markets are characterised by fragmented demand, weakly institutionalised consumption patterns, limited technological infrastructure and uneven marketing capabilities ([Yang et al., 2025](#)). Under such conditions, exploratory innovation is theorised to entail high upfront investment, extended development cycles and uncertain demand formation, which collectively constrain firms' ability to realise short-term performance gains ([Anand et al., 2021](#); [Malodia et al., 2020](#); [Marín-Idárraga et al., 2022](#)). Particularly in SMEs, exploration is resource-intensive and structurally demanding and thus, increasing the likelihood of negative short-term performance effects ([Bérard and Fréchet, 2020](#)). Volatile competitive environments also compress the time available for learning, experimentation and market education, amplifying risk and reducing the probability that exploratory efforts translate into immediate economic returns ([Huang, 2023](#); [Malodia et al., 2020](#)). When pursued intensively under such constraints, exploratory innovation may

overstretch organisational resources (Gupta *et al.*, 2006) divert attention from core competencies and heighten the risk of innovation traps that erode rather than enhance firm performance (Wang and Li, 2008).

5.3 *Exploitative innovation and unexpected negative performance*

Contrary to H2, exploitative innovation is negatively associated with firm performance in the examined emerging-market context. This finding suggests that exploitative innovation may reinforce operational efficiency without enhancing competitiveness, thereby exerting downward pressure on firm performance in emerging-market environments. In emerging markets undergoing rapid economic transition, intensified competition and increasingly heterogeneous consumer demands reduce the effectiveness of efficiency-based strategies grounded in existing technologies and established markets. A strong focus on refining existing approaches and technologies can foster organisational aversion to change, limiting firms' ability to identify new technological and market opportunities. As a result, the exploitation of current strategic assets may trap firms in saturated markets, constraining differentiation and undermining sustainable competitive advantage. This interpretation aligns with recent work on "perfecting" or exploitation-oriented innovation, which shows that although such innovation enhances legitimacy and alignment with dominant institutional logics, it often lacks the disruptive capacity required for sustained competitive differentiation (Huang *et al.*, 2025). Moreover, alignment with existing structures may reinforce routinisation and limit adaptability, particularly under conditions of resource constraint (Bérard and Fréchet, 2020), thereby intensifying price-based competition and constraining margin expansion in emerging markets. Accordingly, this finding aligns with prior evidence reporting weak or negative performance effects of exploitative innovation (e.g. Ramachandran and Badrinarayanan, 2016; Zhang *et al.*, 2017), while qualifying studies that report positive effects under more resource-abundant or stable conditions (Hughes, 2018; Voss and Voss, 2013).

5.4 *The non-moderating role of centralisation as a management practice*

Contrary to H3a and H3b, centralisation as a management practice does not systematically buffer or amplify the short-term performance consequences of innovation in emerging-market firms. From an information-processing perspective, centralisation primarily structures decision authority rather than enhancing organisations' capacity to process uncertainty. Innovation activities in dynamic emerging-market environments require timely, diverse and distributed information to manage equivocality and execution risk (Winkler *et al.*, 2015), which centralised decision-making is ill-suited to provide. Consequently, while centralisation may shape how innovation decisions are made, it has limited ability to alter whether innovation efforts translate into short-term performance gains once they are undertaken. This finding is consistent with studies such as Bérard and Fréchet (2020) which demonstrated that structural attributes such as hierarchy and decentralisation primarily shape firms' engagement in exploratory and exploitative activities, rather than their performance consequences, particularly in SMEs constrained by limited slack resources. Moreover, recent evidence shows that even theoretically salient moderators, such as strategic flexibility, may fail to activate innovation payoffs under volatile and uncertain conditions (e.g. Hossain *et al.*, 2024). In this context, centralisation as a management practice appears to structure decision-making processes without reliably altering whether innovation activities translate into short-term performance gains.

5.5 Environmental dynamism and the limits of configurational effects

Contrary to *H4a* and *H4b*, environmental dynamism and centralisation do not jointly condition the performance implications of exploratory or exploitative innovation in the examined emerging-market context. This suggests that environmental turbulence does not activate higher-order configurational advantages under conditions of severe resource constraints and execution pressures. Importantly, this finding extends the two-way moderation results by showing that environmental dynamism, often theorised as enabling opportunity exploration and adaptive innovation, does not reinstate performance differentiation when centralisation is enacted as a managerial practice. In emerging markets, institutional voids and non-linear institutional change impose exogenously determined information-processing demands, confronting managers with persistently incomplete and ambiguous information. Under such conditions, environmental dynamism constrains strategic discretion, as firms must prioritise responsiveness and competitiveness regardless of internal decision structures or innovation mode. As a result, the joint presence of centralisation and environmental dynamism limits firms' ability to translate innovation-mode-specific activities into differentiated performance outcomes, causing higher-order configurational effects to dissipate.

In uncertain and resource-constrained environments, informal coordination and sense giving mechanisms, such as innovation narratives, may substitute for formal structures like centralised decision-making, reducing the likelihood that structural and environmental moderators generate observable interaction effects (Chen *et al.*, 2025). This pattern aligns with prior research showing that environmental dynamism often fails to operate as a direct moderator of innovation outcomes, instead exerting weaker, indirect effects through organisational processes such as innovation climate and coordination routines (Scheepers and Storm, 2019). Similarly, recent studies of emerging-market SMEs report that strategic and contextual moderators frequently fail to condition innovation-performance relationships in statistically detectable ways (e.g. Hossain *et al.*, 2024). Rather than functioning as clear boundary conditions, environmental dynamism and managerial practices appear to influence innovation outcomes indirectly through planning processes, coordination mechanisms and interpretive routines, reinforcing the limits of configurational logic in resource-constrained emerging-market settings (Seddaoui and Larabi, 2025).

While the foregoing discussion highlights the limits of structural and configurational explanations of innovation performance in this context, recent innovation and management scholarship has increasingly emphasised capability-based and micro-foundational explanations of innovation performance, including business analytics capabilities and digital skills (Abubakar *et al.*, 2025), learning-oriented Human Resource Management (HRM) systems (Galanti and Fantinelli, 2025; Parayitam *et al.*, 2025), knowledge-sharing processes (Jiang *et al.*, 2025) and leadership effectiveness and quality management practices (Koomson, 2025). These perspectives offer valuable insights into how firms accumulate resources, develop innovation readiness and build long-term adaptive capacity. However, the present study deliberately adopts a more practice-centric and constraint-focused lens. Rather than modelling capability development pathways, psychological micro-foundations or mediated growth processes, it examines how a core managerial practice, centralisation, conditions the immediate performance consequences of exploratory and exploitative innovation under resource-constrained conditions. In doing so, this study complements, rather than replaces, capability-based and learning-oriented explanations by highlighting the empirical limits of managerial structure and decision authority in offsetting innovation-related execution risks in emerging-market firms. This positioning reinforces a practice-based understanding of innovation outcomes by foregrounding management practices as empirically distinct drivers of firm

performance, especially under conditions of resource scarcity, financial constraint and institutional uncertainty.

6. Implications for theory

From a theoretical standpoint, these findings contribute to the management practice literature by clarifying the performance implications of centralisation as a management practice, rather than as a static structural attribute. While prior innovation research often assumes that decision centralisation functions as a contingent structural lever that conditions the effectiveness of different innovation modes, the present results suggest that such decision-making practices do not systematically moderate the performance effects of exploratory or exploitative innovation in emerging-market firms (Bérard and Fréchet, 2020; Hossain *et al.*, 2024; Scheepers and Storm, 2019).

This absence of moderation highlights an important boundary condition for management practice theories that emphasise alignment between innovation activities, decision authority and environmental conditions. Specifically, the findings suggest that formalised decision-making practices, such as centralisation, may be insufficient to offset the short-term performance risks associated with innovation when firms operate under resource constraints, institutional volatility and limited discretionary capacity (Bérard and Fréchet, 2020; Chen *et al.*, 2025; Huang *et al.*, 2025). Hence, extending prior research that has primarily examined how management practices shape the organisational antecedents of exploratory and exploitative innovation (e.g. Jansen *et al.*, 2006; Kollmann and Stockmann, 2010), the present findings demonstrate that practices influencing innovation processes do not necessarily condition whether innovation translates into superior firm performance.

Beyond moderation effects, the findings also refine theoretical assumptions regarding the performance implications of exploitative innovation. Although exploitative innovation is often associated with efficiency and alignment with existing organisational structures, prior research such as Bérard and Fréchet (2020) cautions that such alignment may reinforce routinisation and limit adaptability under resource constraints. This study extends this argument and demonstrates that exploitative innovation can be negatively related to firm performance, indicating that efficiency-oriented gains may be insufficient to offset competitive intensity and margin pressures in emerging-market contexts.

Taken together, these findings prompt a re-conceptualisation of centralisation within management practice theory. Rather than treating centralisation as a contingent lever whose primary role is to align innovation modes with environmental conditions, the results suggest that centralisation is better understood as a practice that shapes organisational action without guaranteeing performance effects. This challenges dominant contingency-based assumptions that formal decision authority can stabilise or amplify innovation returns under uncertainty. This interpretation is consistent with prior work showing that organisational structures influence how innovation is conducted rather than whether it generates performance benefits (Bérard and Fréchet, 2020), and with emerging evidence that management practices often fail to activate theorised advantages under binding constraints (He *et al.*, 2025; Hossain *et al.*, 2024).

More broadly, this study advances management practice theory by shifting attention from configurational alignment towards the enactment of practices in everyday managerial work. In emerging-market contexts, the performance implications of innovation appear to depend less on how practices such as centralisation are formally combined with innovation strategies and more on how managerial routines shape attention, prioritisation and execution under conditions of scarcity and uncertainty. This perspective aligns with practice-based views that conceptualise management practices as patterns of action that structure behaviour, rather

than as design choices that mechanically translate into superior outcomes (Scheepers and Storm, 2019). It also resonates with research emphasising that the effectiveness of managerial practices hinges on firms' execution capacity and ability to mobilise resources, rather than on formal organisational arrangements alone (Chen *et al.*, 2025). By foregrounding centralisation as an enacted decision-making practice, this study extends management practice theory by clarifying when and why such practices constrain or enable innovation performance in emerging economies.

7. Implications for practice

The findings offer several important implications for managers operating in emerging-market contexts. Firstly, managers should not assume that formal decision-making structures, such as centralisation, can stabilise or improve the short-term performance outcomes of innovation activities. The results indicate that centralisation does not systematically mitigate the performance risks associated with either exploratory or exploitative innovation, even under conditions of lower environmental dynamism.

Secondly, the findings suggest that both exploratory and exploitative innovation may impose short-term performance pressures that cannot be offset through structural alignment alone. Especially, exploitative innovation, often perceived as lower risk and therefore prioritised under efficiency pressures, may still generate negative performance effects when firms face intense competition, margin pressure and limited organisational slack.

Accordingly, rather than relying on structural adjustments as corrective mechanisms, managers in emerging markets may need to focus more explicitly on innovation prioritisation, timing and disciplined resource allocation under short-term performance constraints. These results highlight the importance of recognising the limits of formal management practices in shaping innovation outcomes and of aligning innovation initiatives with firms' execution capacity under conditions of resource scarcity and uncertainty.

8. Conclusions, limitations and future research directions

This study examined how exploratory and exploitative innovation relate to firm performance in an emerging-market context, and whether these relationships are conditioned by centralisation as a management practice and environmental dynamism. Drawing on evidence from Sri Lankan firms, the findings show that innovation does not yield uniform performance benefits and that both exploratory and exploitative innovation may impose short-term performance pressures under conditions of resource constraint.

Contrary to dominant contingency-based assumptions, the results indicate that centralisation as a management practice and environmental dynamism do not systematically moderate the performance effects of innovation. Rather than functioning as boundary-setting levers, decision-making practices and environmental conditions appear to play a more limited role in shaping whether innovation translates into superior firm performance. These findings highlight the limits of practice–environment alignment as a mechanism for stabilising innovation returns in emerging markets and underscore the importance of recognising the constrained and non-linear nature of innovation–performance relationships in such settings.

Notwithstanding these contributions, the findings should be interpreted in light of several limitations. As with any other study, this investigation is not free from its limitations. Firstly, the cross-sectional design restricts the ability to draw causal inferences. A larger sample size and separation of data collection for independent and dependent variables – data collection at two different periods for predictors and outcome variables (e.g. one-year lag period) may better capture the potential variations of study variables. In addition, the modest sample size

limits statistical power, particularly for detecting higher-order interaction effects and may contribute to instability in complex model specifications. Secondly, firm performance in this study was measured using subjective perceptual financial measures. Future studies may consider other dimensions of firm performance such as customer satisfaction and market effectiveness (e.g. [Vorhies and Morgan, 2005](#)), as well as objective performance metrics, to provide a more comprehensive assessment.

Thirdly, although exploratory and exploitative innovation are conceptually distinct, the high empirical correlation between these constructs in the present sample reflects the practical interdependence of innovation activities in small and resource constrained firms. To address concerns regarding multicollinearity and estimation stability, particularly given the modest sample size, the study adopted a conservative modelling strategy by estimating separate regression models for exploratory and exploitative innovation rather than including both simultaneously in a single specification. This approach also reduces the risk of overfitting and inflated standard errors in interaction models with limited incremental explanatory power. While alternative analytical approaches such as Partial Least Squares Structural Equation Modelling (PLS-SEM) or configurational methods could offer additional insights, the chosen approach prioritised robustness, interpretability and alignment with the study's theoretical focus. Future research with larger samples could more fully model the joint dynamics of exploratory and exploitative innovation using designs that better accommodate construct overlap, thereby extending the present findings.

Building directly on these limitations and the study's empirical results, several avenues for future research emerge. The finding related to H_1 indicates that excessive exploratory efforts may overstretch organisational resources ([Gupta et al., 2006](#)) or divert firms from core competencies, reinforcing path dependency and heightening the risk of innovation traps ([Wang and Li, 2008](#)). Prior research further suggests that structural attributes may exert indirect or lagged effects on innovation outcomes that cross-sectional designs are unable to capture ([Bérard and Fréchet, 2020](#)). Accordingly, future research should adopt longitudinal research designs to examine whether the performance benefits of exploratory innovation materialise over time rather than in the short term.

Reflecting the non-significant moderation effects observed in this study, future research could examine whether structural moderators such as centralisation influence innovation–performance relationships only under specific enabling conditions, such as sufficient organisational slack, leadership capability or temporal separation of exploratory and exploitative activities, as suggested by research on SMEs ambidexterity (e.g. [Bérard and Fréchet, 2020](#); [Hossain et al., 2024](#)).

Similarly, following the non-significant three-way interaction effects, future research should re-examine whether environmental dynamism conditions innovation outcomes through pathways that are not well captured by multiplicative interaction terms in cross-sectional regression models. Building on prior work suggesting that environmental dynamism may operate as a mediator rather than a moderator, future studies could investigate how management practices shape innovation outcomes through intermediate mechanisms such as organisational routines, innovation climate or managerial cognition, particularly in emerging-market contexts ([Scheepers and Storm, 2019](#)). In line with recent research emphasising processual, configurational and indirect explanations of performance in emerging-market SMEs, future work may also move beyond moderation models to examine how managerial practices influence innovation outcomes in combination with other organisational conditions ([Seddaoui and Larabi, 2025](#)).

A further avenue for future research concerns the extension of empirical investigation to underexplored developing-economy contexts such as South Asia. While some evidence

suggests that firms in parts of South Asia are shifting towards more participatory and decentralised organisational arrangements (Khilji and Rao, 2013), the region remains institutionally heterogeneous (Khan *et al.*, 2020; Liu and Vrontis, 2017) and characterised by environmental conditions that heighten organisational tensions (Ochie *et al.*, 2022). Yet, few studies have examined how innovation types and management practices jointly shape firm performance in non-Western institutional settings (e.g. Liu and Vrontis, 2017; Teagarden *et al.*, 2018). Future research could therefore adopt comparative designs to assess whether the patterns observed in Sri Lanka generalise across other emerging-market contexts.

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Consent to participate

The online Qualtrics survey used implied consent, as approved by the ethics committee (SUHREC20191291-3273). Participants were informed of the study purpose and confidentiality and submission of the survey indicated their consent. No identifiable data were collected.

Generative AI use

Generative AI (ChatGPT) was used only for language refinement, including minor grammar corrections, phrasing adjustments and word-count reduction. All ideas, theoretical development, analyses, interpretations and conclusions presented in this manuscript are solely the authors' own. The authors reviewed and verified all AI-assisted edits.

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