



Unleashing the power of innovation: how innovation capacity and product and process objectives drive competitive performance

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ABSTRACT

Research on innovation typically emphasizes resources and capabilities while overlooking the core role of innovation capacity. We investigate how firms' innovation capacity translates into innovation and competitive performance, and whether product and process objectives shape these links. Using survey data from 238 indigenous Turkish firms and multinational subsidiaries and estimating a structural-equation model, we find that (1) innovation capacity strongly and positively predicts innovation performance; (2) innovation performance, in turn, enhances competitive performance; and (3) innovation performance partially mediates the effect of innovation capacity on competitive performance. To identify boundary conditions, we test whether strategic objectives condition these relationships. Product objectives, i.e., expanding product range, entering new markets, and increasing market share, significantly strengthen the link between innovation capacity and innovation performance, whereas process objectives aimed at efficiency gains do not materially alter that relationship. Robustness checks, including confirmatory factor analysis, slope and Johnson–Neyman probes of moderation, and bias-corrected bootstrapping of indirect effects, support these conclusions. This study foregrounds innovation capacity by modeling both mediation and moderation and clarifies when and how firms convert innovation investments into market-relevant outcomes in an emerging-economy context. Managerially, the results advise building and deliberately steering innovation capacity, aligning it with explicit product-oriented goals, and tracking innovation outputs as the conduit to superior competitive performance. Conceptually, the findings integrate dynamic capabilities and goal-setting perspectives, highlight objective-driven boundary conditions, and invite further longitudinal work on capacity–performance time lags and cross-national generalizability.

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Introduction

Since Schumpeter's seminal work (1934), the significance of continuous innovation in driving economic development and ensuring a firm's long-term success has been widely acknowledged (Lee, 2024; Rosenbusch et al., 2011). Innovation is a linchpin of sustainable competitive advantage, bestowing innovating companies with unparalleled profitability compared to their non-innovating counterparts (Lee, 2024). In fact, within the vast business literature, few concepts have achieved such consensus, being unequivocally hailed as the lifeblood of organisational survival and prosperity (Rubera & Kirca, 2012).

However, despite the ample scholarly attention and empirical studies examining the impact of innovation on performance, conflicting findings have emerged. Prior research has largely emphasised resource-based views (Barney, 1991) and capability-based frameworks (Damanpour & Gopalakrishnan, 2001; Teece et al., 1997) in explaining innovation outcomes. While some studies have confirmed a positive correlation innovation and performance (e.g., Damanpour & Gopalakrishnan, 2001), others have reported negative or inconclusive effects (e.g., Mengüç & Auh, 2006). Tidd (2001, p. 169) points out that 'conceptually, it is not difficult to identify the contribution innovation can make to competitiveness. However, it is more difficult to establish a strong empirical relationship between innovation and performance'. Past research has rarely unpacked the direct role of innovation capacity as a core construct driving both innovation performance and, ultimately, competitive performance. As a result, the construct of innovation capacity remains under-theorised and empirically underexplored, particularly in dynamic and resource-constrained contexts such as emerging markets. There is a pressing need to explore innovation capacity, innovation performance, and competitive performance anchored within the boundaries of firm objectives.

To this end, it is essential to examine product and process objectives that shape and guide innovation activities within firms to understand better how innovation capacity translates into performance outcomes. Nonetheless, the literature on product and process innovation objectives has traditionally examined their individual effects on firm outcomes (e.g., Gunday et al., 2011; Leiponen & Helfat, 2010). Few studies have investigated their role as strategic boundary conditions that influence how a firm's innovation capacity is converted into measurable innovation performance. This represents a notable gap: while firms commonly align innovation investments with strategic objectives, there is a lack of empirical clarity on whether and how these objectives actually moderate the innovation capacity – performance relationship. This gap is particularly significant because firms strategically set product and process objectives to align their innovation activities with market demands and operational efficiencies. Theoretically, these objectives serve as key levers that shape the firm's innovation trajectory, influencing how resources and capabilities translate into measurable performance outcomes (Teece et al., 1997). From a practical standpoint, firms often face trade-offs between product and process innovation, where prioritisation decisions can affect the speed, cost, and competitive advantage gained through innovation efforts (Gunday et al., 2011). As such, examining product and process objectives as moderating variables is essential to understanding how firms optimise innovation capacity to achieve superior innovation performance.

Our primary purpose is to analyse the relationships between innovation capacity, innovation performance, and competitive performance under the boundary conditions of the firm's process and product objectives. We ask the following research questions: 1) *'What is the link between innovation capacity, innovation performance, and competitive performance?'* 2) *'How do product and process objectives moderate the relationship between innovation capacity and innovation performance?'* In responding to these questions, we test our hypotheses using a sample of 238 firms, comprising Turkish indigenous firms and subsidiaries of multinational companies based in Turkey.

We site our investigation of innovation in the context of firms operating in the emerging market of Turkey. One aspect of globalisation has been an influx of multinational enterprises from developed countries into developing and emerging markets. This has compelled them to be more competitive and, in the process, has fuelled innovation (Wadho & Chaudhry, 2018). This provides the rationale for our investigation of innovation in the Turkish context. Atalay et al. (2013) note that Turkey is a promising country, although not a leader, in terms of innovation participation. Turkey ranked 37th in the overall *Global Innovation Index 2024* (WIPO (World Intellectual Property Organization) [WIPO], 2025). However, there has been limited prior examination of innovation in the Turkish context (e.g., Atalay et al., 2013; Gunday et al., 2011), further motivating the study.

With this research, we make two notable contributions. First, this study acknowledges the complexity of innovation capacity and aims to investigate the relationships associated with innovation, including the direct link between innovation performance and competitive performance. While considerable scholarly attention has been devoted to resources and capabilities and their impact on innovation performance (Leiponen & Helfat, 2010; Wadho & Chaudhry, 2018), there has been less focus on the underlying innovation capacity required to pursue innovation performance (Tidd & Thuriaux-Alemán, 2016). Innovation capacity grounded in creating an overall vision for innovation, strongly backed by appropriate strategies, structures, and culture, is vital for achieving innovation performance (Khosravi et al., 2019).

Second, this study offers a more nuanced understanding of the effects of innovation capacity on innovation performance by accounting for the moderating role of product and process objectives. Our study, therefore, highlights the boundary conditions that impact the innovation capacity-innovation performance link and brings forth the role of such objectives in achieving innovation performance. This provides meaningful insights into the possible patterns of product and process objectives that strengthen the innovation-performance link.

Theoretical background

Innovation and innovation objectives

The definition of innovation adopted in this study is based on the Oslo Manual, which defines innovation as the 'implementation of a new or a significantly improved product (good or service), process, a new marketing technique or a new organizational method in business practices, workplace organization or external relations' (OECD & Eurostat

[OECD], 2005, p. 46). Accordingly, this study examines five principal domains of innovation: product, process, strategy, structure, and management techniques, each representing areas newly adopted within the firm's operations.

The relationship between organisational innovativeness and firm performance has been widely studied, with strong evidence supporting a positive link between innovation and competitive advantage (Rubera & Kirca, 2012). For instance, Subramanian and Nilakanta (1996) report that organisational factors drive organisational innovativeness, which in turn influences competitive performance. Similarly, firm innovativeness is seen as a mechanism to create new markets for ideas and technologies (Nobakht et al., 2021). However, this relationship is not linear or straightforward; instead, it is complex and multidimensional, requiring innovation to be measured across multiple dimensions (Subramanian & Nilakanta, 1996).

To sustain long-term competitive performance, firms continuously develop new products and enhance their production systems, administration, and managerial processes (Damanpour et al., 2009). The traditional economic rationale behind this innovation-performance link is that innovation grants firms a temporary monopoly, allowing them to achieve above-normal profits (Schumpeter, 1934). However, this advantage is often short-lived, as competitors either imitate innovation or introduce alternative innovations. Consequently, firms must continuously engage in product innovation to maintain market power and turn temporary advantages into sustained performance gains (Miao et al., 2024). This means that innovation serves as a strategic tool to mitigate market competition and adapt to shifting consumption patterns (Sharma & Lacey, 2004).

At its core, firms innovate to either adapt to environmental changes or proactively shape the competitive landscape, thereby improving their effectiveness and market position (Damanpour & Gopalakrishnan, 2001). As Damanpour et al. (2009, p. 650) argue: 'the adoption of innovation is a means for organizational adaptation and change to facilitate achieving the firm's performance goals, especially under the conditions of intense competition, rapidly changing market, scarce resources, and customer and public demand for higher quality and better products and services'. Thus, innovation not only improves performance but also serves as a safeguard against external pressures by enabling firms to develop new products and services and enhance their capabilities for competitive advantage (Damanpour et al., 2009).

The role of innovation in competitive performance has been explained through two theoretical arguments. The first perspective highlights the first-mover advantage: firms that innovate early are more likely to capitalise on market opportunities and sustain superior performance over time (Damanpour & Gopalakrishnan, 2001). The second denotes performance gap theory: when firms experience a gap between actual and potential performance, they are motivated to innovate to bridge this gap and improve outcomes (Zaltman et al., 1973), which stems from a desire to achieve greater performance. Earlier research often assumed a direct positive relationship between innovation and performance. However, extant research emphasises the complexities of innovation capacity, which involves decision-making, investment in innovation activities, and overall innovation expenditure, and how these factors ultimately drive improved performance (Boly et al., 2014; Hashi & Stojcic, 2013).

The role of product and process objectives is critical in innovation strategy. Building on prior research, this study examines how product and process innovation objectives

contribute to converting innovation capacity into competitive performance. Research consistently distinguishes between product innovation and process innovation (Ahmad et al., 2022; Leiponen & Helfat, 2010; Yang et al., 2021). While other types of innovation exist, these two are the most strategically significant (Leiponen & Helfat, 2010; Wadho & Chaudhry, 2018). As Yang et al. (2021, p. 1) explain: ‘Product and process innovations are the internal requirements of enterprise survival and development, the objective needs of market competition, and the inevitable results of technological progress’.

Additionally, product and process innovations play a crucial role in green innovation, ensuring that innovation outcomes align with environmental and societal concerns (Ahmad et al., 2022). When firms define their innovation strategy, they often set specific innovation objectives (cf. Pihlajamaa, 2023). Among these, product and process objectives emerge as the most central, as they shape the firm’s approach to market competitiveness.

Product and process objectives represent two fundamental dimensions of a firm’s strategic innovation goals (Wadho & Chaudhry, 2018). In fact, alongside marketing objectives, they are often more critical to long-term success than short-term profit objectives (Maciariello, 2009).

Product and process objectives are strategically important. Innovation objectives address the fundamental question: *What business should the firm be in?* In turn, product objectives focus on developing new products or improving existing ones. Process objectives aim to enhance efficiency, reduce labour costs, or improve operational flexibility (Leiponen & Helfat, 2010). Together, these objectives provide a roadmap for firms to create new markets and sustain competitive advantages (Maciariello, 2009).

Product and process innovations often complement each other. Firms rarely focus on just one type of innovation; instead, they often pursue multiple product and process objectives simultaneously to maximise synergies (Martinez-Ros & Labeaga, 2009). Product innovations are typically customer-driven and focused on market expansion. Process innovations are primarily efficiency-driven, targeting internal cost savings and productivity gains (Damanpour & Gopalakrishnan, 2001).

Importantly, different innovation types impact different dimensions of performance (Subramanian & Nilakanta, 1996). Process innovations can enhance efficiency, improve productivity, and reduce costs. Product innovations can increase market share, boost revenue, and enhance brand differentiation (Lee et al., 2019). Given these dynamics, this study focuses on product and process objectives within firms’ innovation strategies, emphasising their role in driving sustained competitive performance.

Innovation capacity and innovation performance

Firms need to identify the most appropriate innovation capacity that matches their industrial and organisational context and facilitates developing, managing, and sustaining innovation (Tidd & Thuriaux-Alemán, 2016). The central tenet of innovation capacity is a constant focus on continuous development, which fuels innovation in firms (Mol & Birkinshaw, 2009). This intentional plan directs the firm towards a broad commitment to more and faster innovations. Innovation capacity drives the firm’s strategy and functional integration to achieve strategic objectives. In this sense,

innovation capacity concerns the deliberate planning and managed use of the firm's skills and resources. Innovation capacity is also inextricably intertwined with absorptive capacity, as both are underpinned by leveraging knowledge as a long-term strategy (Kim et al., 2016). Thus, innovation capacity could cater to driving innovations in firms.

Innovation capacity facilitates the combination of inimitable, rare, non-substitutable, and valuable resources and capabilities, which guides action towards innovation performance. Thus, it becomes the source of sustainable competitive advantage for a firm. This also indicates that no one resource or skill will result in a sustained competitive advantage. Instead, a firm must constantly combine and recombine its core competencies to produce innovative performance to secure success (Eisenhardt & Martin, 2000).

Firms formulate product and process objectives that serve as strategic intent, guiding resource allocation and employee focus. This intentional alignment fosters the development of competencies by translating objectives into structured innovation activities and learning. We view innovation performance as a composite construct that manifests as new or improved products, processes, strategies, management techniques, structure, and marketing. The most obvious are new or modified products. Process innovations, which lead to process efficiencies, are also very important and can directly affect a firm's profitability. Thus, the conceptual model proposes that firms with better product and process-based innovation objectives can better channel their innovation capacity and innovation performance to increased competitive performance.

Innovation performance and competitive performance

Innovation facilitates organisational adaptation by introducing new capabilities and routines in response to environmental shifts. It enables firms to reconfigure existing resources and respond proactively to change drivers such as market demands and technological evolution. This is especially true when the firm faces powerful competition, turbulent and uncertain markets, resource scarcity, and consumer demand for improved products (Damanpour et al., 2009). Innovations can enhance different performance dimensions; those most often examined in the literature are innovative performance, market performance, production performance, and financial performance (Gunday et al., 2011).

Clearly, the decision to innovate is crucial for firms, given the time and resources required to undertake innovation. However, the empirical evidence indicates that the effect of innovation on competitive performance differs between innovative firms, such that establishing a simple link between innovation and competitive performance is difficult (Tidd, 2001). Gunday et al. (2011, p. 663), for instance, caution that 'the observed direct effects of innovations on competitive performance are relatively small, and the benefits from innovations are more likely indirect'. Nevertheless, they conclude that innovative firms appear less vulnerable to cyclical sectoral and environmental pressures than non-innovative firms. Also, Jin et al. (2004) conclude that empirical findings consistently show that firms that innovate are better positioned than firms that do not. This suggests that innovating firms should perform better than those that do not. So, despite the unclear empirical evidence, it is usual to regard innovation as a critical factor affecting competitive performance. Consequently, comprehending the association

between innovation and competitive performance continues to be important for researchers, policymakers, and practitioners.

Following this discussion of the underlying concepts of the theoretical model, we now turn to the development of the study's hypotheses.

Hypotheses development

Firms, especially in knowledge-intensive and high-tech sectors, deploy their innovation capacity to achieve the desired innovation performance, and strategies aimed at managing and fuelling innovations make innovation an integral part of these firms, i.e., a core business value that is vital for their growth (Tidd, 2001). Many firms, such as Apple, Google, and 3 M, known for their high innovation, nurture talent and celebrate the success of their innovations, promoting employees who champion innovation and rewarding them for their efforts (Lash, 2012). Innovation thrives in firms with a culture that supports psychological safety (Lash, 2012; Terziovski, 2010), which is a key dimension of innovation capacity. A culture that tolerates failure and encourages experimentation strengthens the firm's ability to generate and implement novel ideas. Employees can experiment with new ideas, often taking calculated risks and achieving greater innovation capacity in their pursuit of innovative outcomes. According to the dynamic capabilities theory (Teece et al., 1997), firms must develop, integrate, and reconfigure internal and external competences to address rapidly changing environments. Innovation capacity represents a core dynamic capability that allows firms to sense opportunities, seize them through new product and process development, and transform organisational routines to align with innovation objectives. Firms with higher innovation capacity are thus more adept at developing, implementing, and scaling novel ideas, leading to superior innovation performance (Dumay et al., 2013).

Companies that maintain a strong focus on innovative capacity also allocate substantial budgets to formal innovation-oriented programmes and measure innovation-related metrics and processes. These characteristics typically develop through intentional training and development programmes aimed at enhancing creative thinking and problem-solving skills. It is essential to continuously assess the investments, strategies, and policies related to innovation (Dumay et al., 2013). This evaluation helps determine whether the company is on the right path or if it needs to change direction while ensuring the thoughtful use of such investments. Many companies also adopt practices to foster the formation of cross-functional teams that drive innovation through collaboration (Bessant et al., 2005). A diversity of ideas, perspectives, and skills has positively influenced innovation performance, particularly as many successful innovations stem from collaborative efforts. Therefore, we posit:

H1: Innovation capacity is positively associated with innovation performance.

Innovation is essential for a firm's long-term success, as it maintains a competitive advantage in the industry. Several studies have linked innovation to competitive performance (Mengüç & Auh, 2006; Song & Swink, 2009). New methods of organising work routines, processes, and procedures – such as agile project management, cross-functional teams, and flexible workflows – along with new management systems can create unique

capabilities that, in turn, generate a long-term competitive advantage for the firm. Innovations aimed at enhancing strategies, techniques, and structures can help firms achieve their objectives and are a critical success factor for 21st-century businesses (Feigenbaum & Feigenbaum, 2005). Thus, these innovations are crucial for competitive performance and sustaining competitive advantage (Mol & Birkinshaw, 2009). Drawing from the resource-based view (Barney, 1991), innovation performance can be considered a valuable, rare, inimitable, and non-substitutable resource. Innovations, especially those embodied in products, services, processes, or marketing strategies, allow firms to differentiate themselves from their competitors. When firms succeed in their innovation efforts, these outcomes become strategic assets that enhance their competitive positioning and performance.

Innovations in marketing—i.e., the implementation of new marketing methods, including novel pricing strategies, digital customer engagement techniques, and data-driven personalisation, all aimed at increasing market responsiveness and value creation—can aid the commercialisation of new products, stemming from an enhanced understanding of customer requirements and behaviours. This enables firms to develop better ideas and effectively utilise marketing campaigns and advertising to enhance customer performance (Srinivasan et al., 2009). Conversely, product innovations lead to new or modified products that could attract more customers, increasing customer satisfaction and further enhancing the firm's market position and sales (Song & Swink, 2009). Additionally, process innovations can yield reductions in cost and time, which may translate into improvements in product quality and productivity, ultimately benefiting customers and leading to improved market performance (Benner & Tushman, 2003). Therefore, this study focuses on innovation performance related to new products, processes, management techniques and strategies, structures, and marketing. Since these various forms of innovation complement each other (Martinez-Ros & Labeaga, 2009), their joint adoption can synergistically impact competitive performance. This integrative conceptualisation of innovation (Terziowski, 2010) offers a more comprehensive understanding of its influence on competitive performance. Overall, innovation enhances competitive performance by enabling differentiation, efficiency gains, and customer-centric value propositions. These innovation outcomes help firms outperform their rivals through superior adaptability and market relevance. Hence, we expect:

H2: Innovation performance is positively associated with competitive performance.

Moderating effects of product and process objectives on the relationship between innovation capacity and innovation performance

Firms set objectives they aim to achieve through innovation. These objectives provide firms with a clear direction and goals towards which their innovation activities are directed. Product objectives reflect a firm's preference for introducing newer products in new markets to increase its market share (Wadho & Chaudhry, 2018). The aim here is to develop new products and services that offer superior value, enticing customers and generating greater returns on investment. In contrast, firms focusing on process objectives tend to seek new ways to organise and combine inputs to enhance production or

service operations while reducing costs related to labour, materials, and energy consumption. They are more inclined to explore new operational pathways since these objectives emphasise efficiency, flexibility, and continuous improvement. This focus encourages experimentation with innovative methods and workflow redesign. Thus, while pursuing process objectives, the emphasis leans more towards achieving efficiency or productivity gains (Benner & Tushman, 2003; Evangelista & Vezzani, 2010).

Product and process objectives enable firms to engage more with innovation (Wadho & Chaudhry, 2018). Some firms emphasise multiple objectives symmetrically—i.e., with equal strategic emphasis on these objectives and alignment between them, which allows for integrative innovation – while others prioritise either product or process objectives. Firms with such objectives are more likely to generate better products, services, strategies, business processes, and operations (Wadho & Chaudhry, 2018). Adopting product objectives gives firms a clearer focus on newer and improved products that cater to different markets. This is likely to be translated into more innovative products and the accompanying business processes, structures, and strategies. Similarly, emphasising process objectives allows firms to explore productivity or efficiency gains through more streamlined and superior processes (Evangelista & Vezzani, 2010).

Implementing product and process objectives is likely to foster innovations in top-tier production methods and techniques, as well as in business functions, routines, and rules that are often quite different from and superior to those of competitors (Hashi & Stojcic, 2013). For instance, recent research has demonstrated that R&D expenditure driven by product and process objectives significantly impacts innovation performance (Yıldız et al., 2021). Thus, firms with a stronger emphasis on product and/or process objectives can better translate innovation capacity into enhanced innovation performance. We assert that product and process objectives influence how innovation capacity is directed. When such objectives are explicit and well-integrated, they focus organisational attention and guide innovation efforts, thereby reinforcing the connection between capacity and performance. Goal-setting theory (Locke & Latham, 2002) posits that specific and challenging goals lead to higher performance than vague or easy goals. Product and process objectives provide specific innovation-related goals, thereby focusing effort, increasing persistence, and motivating the deployment of innovation capacity. This focus is essential for translating abstract capabilities into tangible innovation results.

Product objectives clarify innovation targets, while process objectives improve execution strategies, both serving as amplifiers of innovation outcomes. This is because achieving these objectives is a priority for these firms. With product and process objectives solidly in place and effectively implemented, firms can attain a greater innovation advantage through superior products or services, along with enhanced production processes, strategies, and techniques (Castillo-Vergara & García-Pérez de Lema, 2021; Tripathi & Kalia, 2022). This also allows firms to translate innovation capacity into favourable innovation performance. A greater focus on product and process objectives enables firms to innovate with higher-quality products and services, often more quickly and at lower costs, which in turn fosters a more advantageous competitive position in the market (Yang & Tu, 2020). Conversely, firms with less emphasis on these objectives may struggle to convert their innovation

capacity into improved innovation performance, as they lack a sustained commitment to achieving these goals. This leads to the following hypotheses:

H3a: Product objectives positively moderate the effect of innovation capacity on innovation performance.

H3b: Process objectives positively moderate the effect of innovation capacity on innovation performance.

Mediating role of innovation performance in the relationship between innovation capacity and competitive performance

We previously discussed the effect of innovation capacity on innovation performance (H1) and the effect of innovation performance on competitive performance (H2). Building on these arguments, we also suggest that innovation performance can link innovation capacity and competitive performance and convey the effect of innovation capability on competitive performance.¹

Innovation capacity can enable firms to achieve greater innovation performance, and in turn, innovation performance can help translate innovation capacity into competitive performance. This is because capacity alone does not generate a competitive advantage unless it results in successful innovation outcomes. Innovation performance represents the realisation of potential and is necessary to translate internal capabilities into tangible market impact. In this vein, as the leap between innovation capacity and competitive performance may be big and influenced by many boundary conditions (e.g., product and process objectives as discussed above), innovation performance can bridge innovation capacity and competitive performance. Having greater innovation capacity could be the first step towards achieving greater. However, driving and reinforcing innovation capacity through innovation performance outcomes are critical to taking innovation capacity further and linking it to competitive performance (Lash, 2012). These include rewarding and celebrating achievements linked to innovation, governing and managing the associated programmes and initiatives, and leveraging innovation outputs towards achieving greater competitive advantage in the focal markets in which the firm operates (Bessant et al., 2005; Dumay et al., 2013; Terziovski, 2010). This could eventually translate to better profitability, sales, and market share for the firms relying on their innovation capacity. Thus, we expect:

H4: Innovation performance mediates the effect of innovation capacity on competitive performance.

Firm-level contextual variables

To strengthen the empirical rigour of the hypothesised relationships, several theoretically relevant firm-level control variables are introduced. These variables capture contextual heterogeneity that may independently influence innovation behaviours and performance

outcomes, thus allowing for a more precise estimation of the core effects proposed in the conceptual model.

Ownership type

The ownership structure of firms, specifically, whether they are domestic enterprises or subsidiaries of multinational enterprises (MNEs), has long been considered a relevant contextual factor in innovation studies. MNE subsidiaries may benefit from access to global technological assets, managerial know-how, and cross-border learning, potentially enhancing their innovation capacity and performance outcomes relative to locally owned firms. However, empirical evidence on this relationship remains inconclusive in emerging markets, with some studies reporting minimal differences in innovation intensity between foreign and domestic firms (Hashi & Stojcic, 2013). In light of these mixed findings, we control for ownership type to account for any unobserved heterogeneity stemming from this structural distinction.

Firm size

Firm size is often viewed as a proxy for organisational slack, resource endowment, and formalisation of innovation processes. Larger firms may be better positioned to allocate dedicated budgets to R&D, absorb innovation-related risks, and institutionalise innovation routines. At the same time, smaller firms may exhibit greater flexibility, adaptability, and speed in deploying innovative initiatives. Given the ambiguity in empirical results, ranging from positive to negative or non-significant associations, we include firm size as a control variable to account for its potential confounding effect on innovation and performance (Hashi & Stojcic, 2013).

Industry type

Industry differences are particularly salient in innovation research, as industries vary significantly in their technological regimes, competitive dynamics, and innovation trajectories. Firms in high-technology industries often operate in environments characterised by rapid obsolescence, short innovation cycles, and intense R&D competition, all of which can heighten the salience of innovation capacity for performance outcomes. By contrast, firms in lower-technology sectors may rely less on innovation as a driver of competitiveness (Lee et al., 2019; Mizik & Jacobson, 2003). We therefore control for industry type using the OECD classification of technological intensity to ensure that our findings are not unduly shaped by sectoral idiosyncrasies.

Firm age

Organisational age may condition a firm's receptivity to innovation. Older firms often benefit from accumulated knowledge, established routines, and reputational legitimacy, yet they may also be constrained by structural inertia and a diminished propensity to pursue radical innovation. Younger firms, while typically more agile and entrepreneurial, may face limitations in terms of capabilities and resources. These divergent tendencies suggest that firm age may exert a nonlinear influence on both innovation-related behaviours and their performance implications (Rosenbusch et al., 2011). Hence, we incorporate firm age as a categorical control to account for this dimension of organisational maturity.

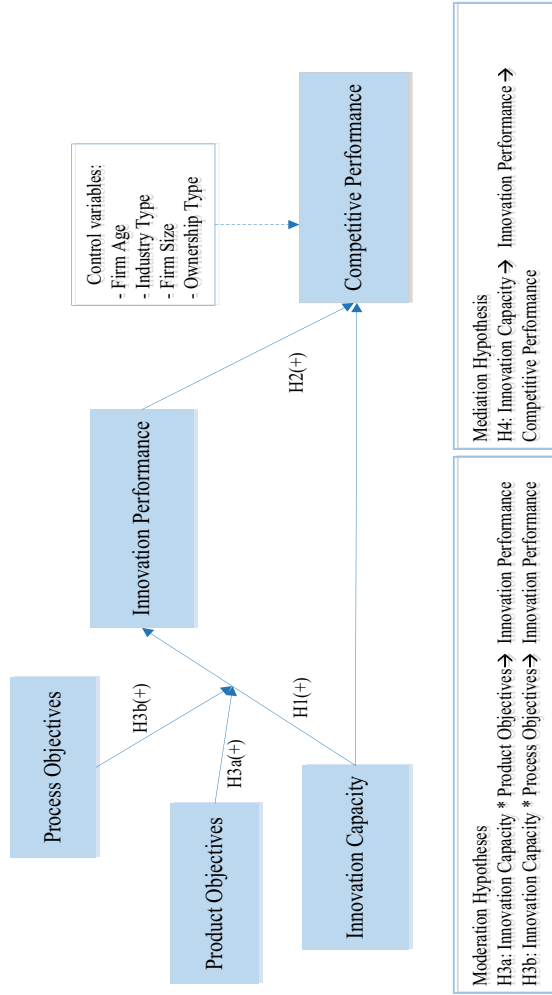


Figure 1. Conceptual model.

By controlling for these firm-level attributes, ownership type, size, industry sector, and age, we seek to more precisely isolate the effects proposed in our conceptual framework. These variables are not the focus of our theoretical model, but their inclusion reinforces the internal validity of our empirical tests. [Figure 1](#) presents the full structural model and the hypothesised relationships.

Research methods

Sample and procedure

A structured questionnaire was used to gather primary data from firms in Turkey. The key reasons for choosing Turkey as the survey setting are as follows. First, despite its sizeable economy, Turkey displays features like other emerging countries. Turkey is defined as a large, efficiency-driven emerging market on the path towards innovation-driven growth (Yıldız et al., 2021). Turkey's industrial, corporate, and institutional setting resembles other big emerging country markets, such as Brazil, Mexico, Indonesia, and Poland (Fainshmidt et al., 2016), which could enhance the generalisability of the findings. Second, strategically, Turkey aims to develop an innovation-related environment, transforming its economic structure by implementing mechanisms in education, social policies, and R&D expenditures (Yıldız et al., 2021), as well as through direct support for innovation activities of Turkish firms. This amplifies the relevance of the chosen context.

Firms were selected from the TOBB (The Union of Chambers and Commodity Exchanges of Turkey) database, which includes over 40,000 firms registered within 93 local chambers of commerce. To ensure the relevance of the sample to the research context, inclusion criteria were first applied. Eligible firms were those that were legally registered in Turkey, operated in sectors with demonstrable innovation activity (e.g., manufacturing, industrial production, and technology-intensive services), and possessed identifiable R&D or innovation functions. Firms lacking operational autonomy or a formal innovation/R&D structure were excluded. From this refined population, a random sample of 1000 firms were drawn up to constitute the study's sampling frame. After targeting general managers or senior executives in charge of innovation and R&D, 251 questionnaires were received, of which 13 were eliminated due to missing values or no solid R&D infrastructure, giving a 23.8% (238/1000) response rate, which is satisfactory given the topic and the type of respondents.

The questionnaire was developed through a multi-stage process. Initially, established measurement scales from the literature were identified and adapted to the Turkish business context. Following a translation and back-translation procedure to ensure linguistic and conceptual equivalence, a pilot version of the questionnaire was prepared. This draft was pretested with 12 executives from firms that met the sampling criteria but were not part of the final dataset. Participants were asked to assess item clarity, wording, and relevance. Based on their feedback, several revisions were made. These included rewording items for greater semantic clarity, simplifying technical terminology to align with respondent familiarity, and restructuring a few items to reduce potential ambiguity in scale interpretation. For instance, some innovation-related items were modified to reflect the terminology

Table 1. Characteristics of respondent firms.

Characteristics	N	%
<i>Ownership type</i>		
Domestic	138	58.0
MNE subsidiary	100	42.0
<i>Firm size (number of employees)</i>		
Less than 250	157	66.3
250 – 1000	46	19.4
More than 1000	34	14.3
<i>Industry type</i>		
Low-technology	86	36.2
Medium-technology	66	27.7
High-technology	86	36.1
<i>Firm age (years)</i>		
Less than 5	30	13.1
5 – 10	29	12.7
11 – 20	60	26.2
21 – 40	66	28.8
More than 40	44	19.2

commonly used in Turkish industry reports and firm documentation. After pre-testing, the final version of the questionnaire was formatted for clarity and ease of completion.

Table 1 summarises the characteristics of the sample firms. The sample comprises indigenous Turkish firms (58%) and MNEs (42%). Regarding firm size, 14.3% of the sample firms have more than 1000 employees, and 66.3% are characterised as small and medium-sized enterprises (SMEs) employing fewer than 250 workers. Regarding firm age, 48% of the firms have been operating for over 20 years, and 26% have been operating between 10 and 20 years.

Nonresponse bias was evaluated as follows. First, about 50% of the surveys were randomly selected for each of the early (65 questionnaires) and late respondent (55 questionnaires) groups (Armstrong & Overton, 1977). The test results indicated no significant variation in the responses between early and late respondents ($p > .1$) for the following measures: Innovation performance (t-value = .62, $p = .43$), innovation capacity (t-value = .37, $p = .69$), product objectives (t-value = 1.17, $p = .24$), process objectives (t-value = .95, $p = .32$) and competitive performance (t-value = 1.08, $p = .27$). Chi-square and t-tests were also used to compare a randomly selected group of 120 non-respondent firms with 238 respondent firms based on the key characteristics of the sample, with no significant differences revealed for any firm-level characteristics: ownership type (t-value = .76, $p = .37$), firm size ($\chi^2 = 2.33$, $p = .35$), industry ($\chi^2 = .95$, $p = .67$) and firm age ($\chi^2 = 1.93$, $p = .41$).

Measures

The constructs used in this study (both endogenous and exogenous variables) were measured using 5-point Likert scales, all of which were adapted from the literature.

Competitive performance was measured by seven items focusing on various dimensions of competitive performance ($\alpha = .92$). There has been much debate about

measuring competitive performance. However, it is recognised that competitive performance is a multidimensional concept, with no single measure entirely accounting for all aspects of performance (Wolff & Pett, 2006). Consequently, researchers have adopted multiple competitive performance measures (Subramanian & Nilakanta, 1996), encapsulating objective and subjective indicators (Harris, 2001). Given the difficulty of obtaining financial data from private companies and with no publicly available objective data, we adopted subjective measures to assess competitive performance over the preceding three years. The respondents indicated the extent to which they were satisfied with their firm's performance on the following measures: growth in profits, sales, market share, ROA (return on total assets), ROS (return on total sales), the ratio of total sales to total assets, and overall performance in relation to competitors. This procedure has been used in several seminal studies (e.g., Kim & Gong, 2009; Pearce et al., 1987). Subjective competitive performance measures have been indicated to correlate strongly with objective measures (Geringer & Hebert, 1991; Powell, 1992).

Innovation performance comprises six items ($\alpha = .82$) adapted from Battisti and Stoneman (2010) based on the UK Innovation Survey. One item was deleted following the validity and reliability tests.

Innovation capacity comprises twelve items derived from questionnaires designed by innovation consultants for firms to self-evaluate their innovation capacity. The authors adopted these items based on the work of Rao and Weintraub (2013) and Lash (2012). Seven items from this scale were retained following the validity and reliability tests ($\alpha = .87$).

Product objectives for innovation were adapted from the measures employed by Wadho and Chaudhry (2018), which consisted of three items ($\alpha = .68$).

Process objectives for innovation were adapted from Wadho and Chaudhry (2018) and included four items ($\alpha = .78$), out of which three were retained.

Control variables

To ensure analytic rigour and to control for heterogeneity across firms, we included four firm-level control variables, each operationalised according to established measurement practices.

Ownership type was coded as a binary categorical variable, where 0 denotes an indigenous Turkish firm and 1 indicates a subsidiary of an MNE. This variable captures structural distinctions in governance, resource access, and international embeddedness that may influence innovation behaviour.

Firm size was operationalised as an ordinal variable reflecting the total number of employees, categorised into three levels: (1) fewer than 250 employees, representing SMEs; (2) between 250 and 1,000 employees, representing medium-to-large firms; and (3) more than 1,000 employees, representing large enterprises. This classification aligns with conventional firm size thresholds used in innovation studies and policy frameworks.

Industry type was measured using an ordinal scale comprising three categories based on the OECD's taxonomy of technological intensity (Galindo-Rueda & Verger, 2016). Firms were classified as operating in: (1) low-technology industries (e.g., textiles and food processing), (2) medium-technology industries (e.g., automotive and chemicals), or (3)

high-technology industries (e.g., electronics and pharmaceuticals). This variable accounts for industry differences in innovation orientation and R&D intensity.

Firm age was included as an ordinal variable reflecting organisational maturity, coded into five categories: (1) less than 5 years, (2) 5–10 years, (3) 11–20 years, (4) 21–40 years, and (5) more than 40 years. This classification captures potential nonlinearities in the influence of firm age on innovation-related capabilities and strategic behaviour.

Common method bias

This study considered the potential for common method bias (CMB), which could arise from the common rater effect and the same measurement time effect (Podsakoff et al., 2003). Several procedural precautions were implemented to mitigate CMB, including using established scales, counterbalancing question order, and ensuring respondent anonymity.

To assess CMB in a single-method research design, we employed Harman's single-factor test, a commonly adopted approach (Podsakoff et al., 2003; Podsakoff & Organ, 1986). This test involves subjecting all factors in the study to exploratory factor analysis. CMB is considered present when a single factor emerges from unrotated factor solutions or when the first factor explains a substantial portion of the variance in the variables (Podsakoff & Organ, 1986, p. 536). To complement this analysis and provide a more rigorous assessment, we also utilised the single-factor test operationalised through confirmatory factor analysis (CFA), as suggested by Malhotra et al. (2006). In this approach, all items were constrained to load onto a single latent factor to examine whether the variance could be predominantly attributed to method effects. The CFA results revealed that the common method variance accounted for only 6.25% of the total variance ($.25^2 = .0625$), which is well below the recommended threshold of 50% (Podsakoff & Organ, 1986). These findings collectively indicate that CMB is unlikely to pose a significant threat to the validity of our results.

Analysis and results

Table 2 reports the descriptive statistics and bivariate correlations for all study variables. Data analysis was conducted using AMOS and SPSS software.

Table 2. Descriptive statistics.

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
Competitive performance	3.54	.78	<i>.788</i>								
Innovation performance	3.88	.77	<i>.408**</i>	<i>.704</i>							
Innovation capacity	3.67	.77	<i>.363**</i>	<i>.643**</i>	<i>.707</i>						
Product objectives	4.47	.61	<i>.107</i>	<i>.256**</i>	<i>.176*</i>	<i>.664</i>					
Process objectives	3.95	.93	<i>.035</i>	<i>.205**</i>	<i>.234**</i>	<i>.306**</i>	<i>.743</i>				
Ownership type	0.42	.495	<i>.165*</i>	<i>.287**</i>	<i>.263**</i>	<i>-.072</i>	<i>.020</i>	<i>1</i>			
Firm size	3.04	2.06	<i>.185**</i>	<i>.345**</i>	<i>.217**</i>	<i>-.052</i>	<i>.054</i>	<i>.681**</i>	<i>1</i>		
Industry type	2.00	.852	<i>.109</i>	<i>.070</i>	<i>.024</i>	<i>-.008</i>	<i>-.048</i>	<i>.140*</i>	<i>.164*</i>	<i>1</i>	
Firm age	3.32	1.324	<i>.044</i>	<i>.234**</i>	<i>.090</i>	<i>-.011</i>	<i>.021</i>	<i>.357**</i>	<i>.476**</i>	<i>.086</i>	<i>1</i>

Notes: $N = 238$.

SD = Standard deviation.

* $p < .05$; ** $p < .01$ (two-tailed), italicised diagonal values are square root of AVE.

CFA was performed on the five-factor measurement model, yielding an acceptable model fit ($\chi^2 = 516.53$; $df = 262$; $p < .01$; comparative fit index (CFI) = .916; Tucker Lewis Index (TLI) = .904; root mean square error of approximation (RMSEA) = .064). Reliability and validity statistics, presented in Table 3, indicate satisfactory internal consistency, with Cronbach's alpha and composite reliability (CR) values exceeding .70 for all constructs, except product objectives ($\alpha = .68$), which is deemed acceptable for scales with a limited number of items (Nunnally, 1978). Average variance

Table 3. Validity and reliability measures.

Items	Loading	Cronbach's alpha	Composite reliability	AVE
Competitive performance				
Growth of profits compared to competitors over the last 3 years.	.80*			
Growth of sales volume compared to competitors over the last 3 years.	.80*			
Growth of market share compared to competitors over the last 3 years.	.76*			
After-tax return on total assets compared to competitors over the last 3 years.	.80*			
After-tax return on total sales compared to competitors over the last 3 years.	.86*	.92	.92	.62
The ratio of total sales to total assets compared to competitors over the last 3 years.	.78*			
Your overall performance/success compared to competitors over the last 3 years.	.73*			
Innovation performance				
In the past five years, our firm has regularly introduced product/service innovations.	.63*			
In the past five years, our firm has implemented a new or significantly changed corporate strategy.	.74*			
In the past five years, our firm has implemented new advanced management techniques.	.81*	.82	.83	.50
In the past five years, our firm has introduced major changes to the organisational structure (e.g., the introduction of cross-functional teams, the outsourcing of major business functions).	.64*			
In the past five years, our firm has introduced major changes to marketing.	.68*			
Innovation capacity				
Overall, champions of innovation are supported well within our firm.	.60*			
Our firm is successful in developing new products and getting them to market.	.66*			
Our firm has a budget for innovation.	.78*			
Our firm has formal programs for innovation.	.71*	.87	.87	.50
Our firm has quantified goals for innovation and its impact on future performance.	.75*			
Our employees see innovation to be an important part of their day-to-day jobs.	.74*			
Innovation is celebrated and rewarded in our firm.	.69*			
Product objectives				
Expanding product range is an important innovation objective for your firm.	.50*			
Entering new markets is an important innovation objective for your firm.	.80*	.68	.70	.44
Increasing market share is an important innovation objective for your firm.	.66*			
Process objectives				
Reducing labour costs is an important innovation objective for your firm.	.69*			
Reducing the use of materials is an important innovation objective for your firm.	.78*	.78	.79	.55
Reducing the use of energy is an important innovation objective for your firm.	.75*			

Notes: $N = 238$.

* $p < .01$ (two-tailed).

extracted (AVE) values surpassed the .50 threshold for most constructs. Although the AVE for product objectives was .44, the corresponding CR exceeded .60, satisfying the conditions for convergent validity (Fornell & Larcker, 1981). Discriminant validity was established using the Fornell-Larcker criterion, confirming construct independence.

Hypothesis testing

Structural equation modelling (SEM) results indicated acceptable overall model fit ($\chi^2 = 251.22$; $df = 268$; $p < .01$; CFI = .916; NFI = .868). H1 was supported, demonstrating a significant positive relationship between innovation capacity and innovation performance ($\beta = .614$; $p < .001$). H2 was also supported, indicating a significant positive association between innovation performance and competitive performance ($\beta = .269$; $p < .001$).

Moderating effect of product objectives (H3a)

H3a proposed that product objectives moderate the relationship between innovation capacity and innovation performance. Results showed a significant interaction effect ($\beta = .095$; $p < .05$), supporting H3a.

Figure 2 presents the results of the slope analysis, showing that innovation capacity maintains a consistently positive effect on innovation performance, regardless of the level of product objectives. The strength of this relationship increased under high levels of product orientation (+1 SD), with a steeper slope indicating enhanced effect magnitude. When product objectives were low (−1 SD), the relationship remained positive but weaker. These results indicate that firms emphasising product-related

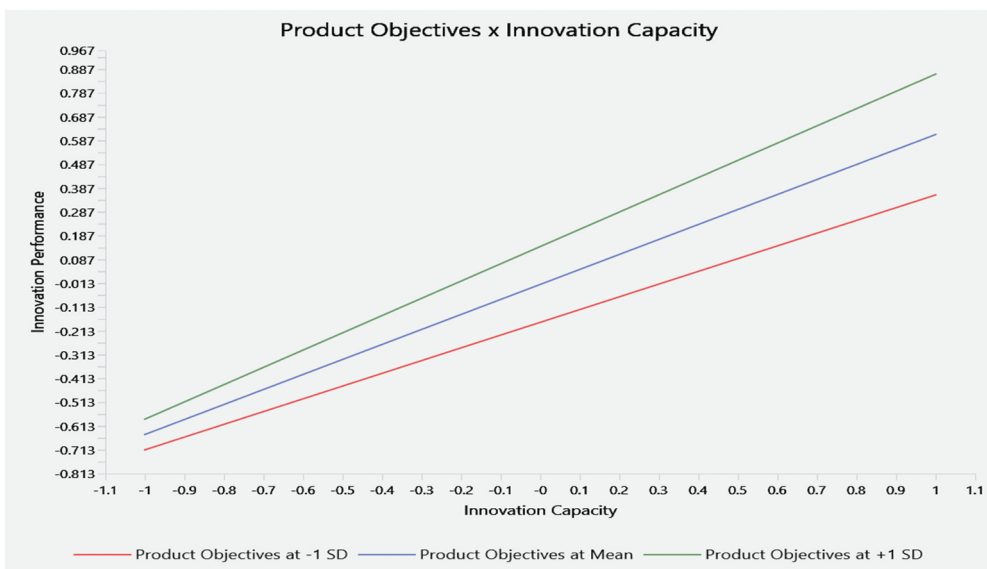


Figure 2. Moderating effect of product objectives on the relationship between innovation capacity and innovation performance using slope analysis.

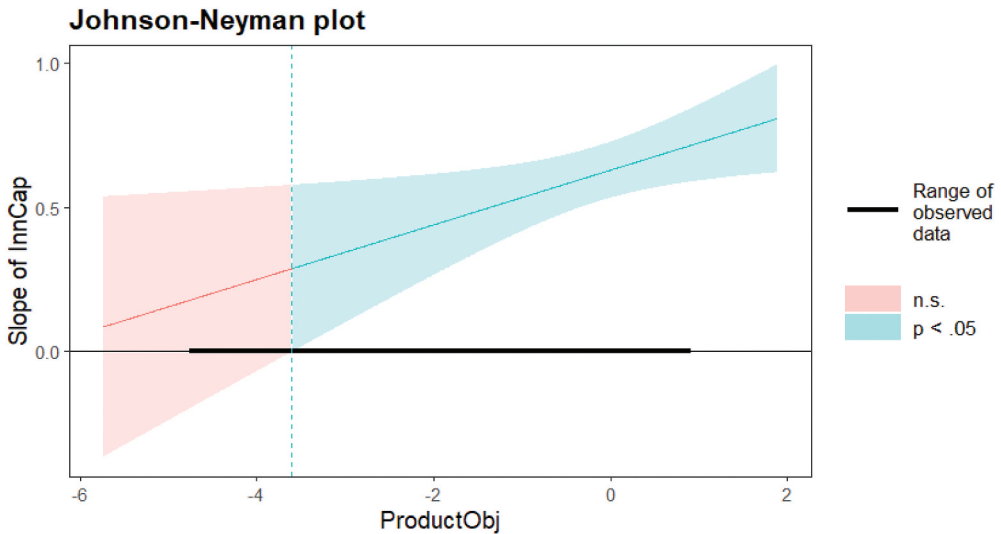


Figure 3. Moderating effect of product objectives using J-N method.

innovation goals are more effective in translating capacity into performance outcomes.

In addition, the Johnson-Neyman (J-N) technique was employed to identify the specific values of product objectives at which the effect of innovation capacity on innovation performance becomes statistically significant (Johnson & Neyman, 1936). The interaction term between innovation capacity and product objectives was found to be statistically significant ($\beta = .095$; $p < .05$), indicating that the effect of innovation capacity on innovation performance is conditional on the values of product objectives. The J-N analysis indicates that the effect of innovation capacity on innovation performance becomes statistically significant when product objectives exceed approximately -3.60 . Therefore, the results in Figure 3, suggest that the contribution of innovation capacity to innovation performance is significant when product-oriented objectives are stronger, providing support for H3a. In the graphical output, the significant region is shaded in blue.

Moderating effect of process objectives (H3b)

Hypothesis H3b posited that process objectives moderate the relationship between innovation capacity and innovation performance. The interaction term was not statistically significant ($\beta = -.021$; $p > .05$), indicating a lack of support for H3b.

As shown in Figure 4, the slope analysis reveals that the relationship between innovation capacity and innovation performance remains both positive and relatively stable across differing levels of process objectives. The nearly parallel slopes suggest that process objectives do not significantly alter the strength of this relationship.

To further explore the conditional effects, the J-N technique was again employed. Figure 5 shows that the relationship between innovation capacity and innovation

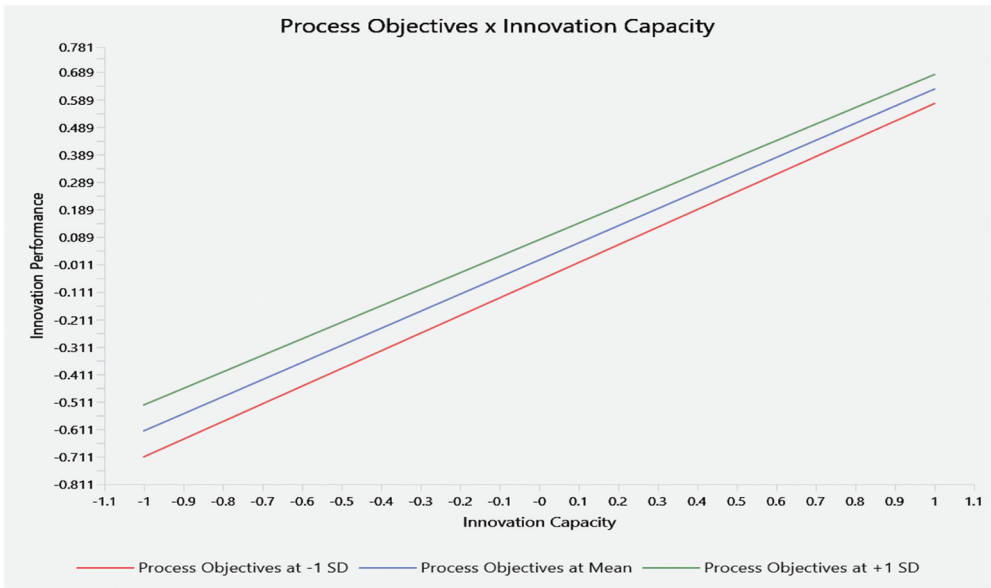


Figure 4. Moderating effect of process objectives on the relationship between innovation capacity and innovation performance using slope analysis.

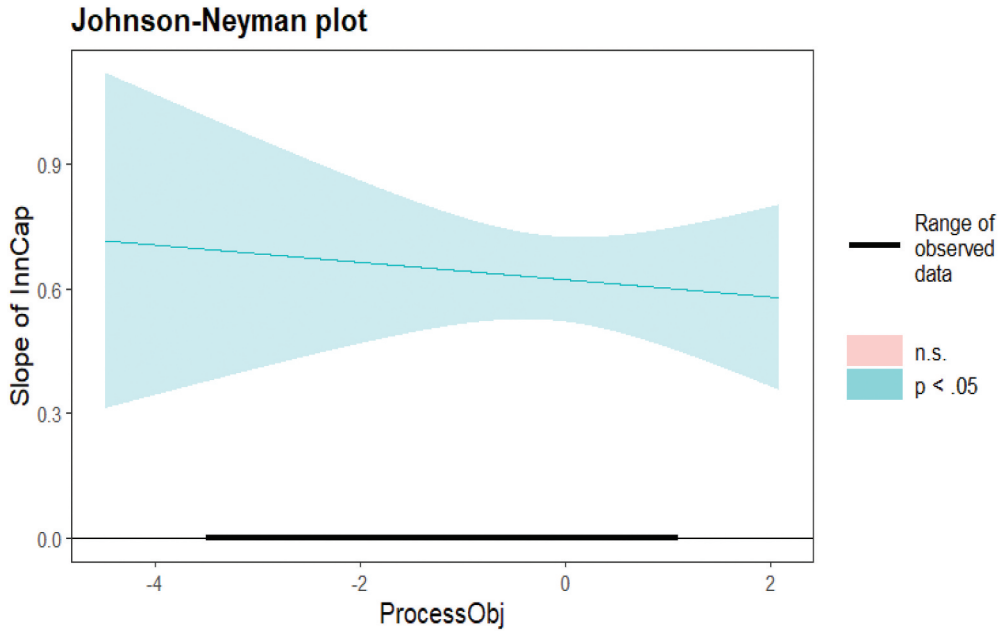


Figure 5. Moderating effect of process objectives using J-N method.

performance remains statistically significant across all observed levels of process objectives. Despite this, the absence of a significant interaction term indicates that process objectives do not meaningfully condition this relationship.

Mediating role of innovation performance (H4)

The mediating effect of innovation performance (H4) was assessed by examining both the direct and indirect relationships between innovation capacity and competitive performance. Mediation can be characterised as either partial or full. Partial mediation is indicated when both the direct and indirect effects are statistically significant, whereas full mediation arises when only the indirect effect is significant, with the direct effect becoming non-significant upon the inclusion of the mediator (Hair et al., 2014; Hayes, 2022).

As shown in Table 4, the total effect of innovation capacity on competitive performance was significant in the absence of the mediator ($\beta = .33$; $p < .01$), suggesting an initial direct pathway. Following the inclusion of innovation performance as a mediating construct, both the direct and indirect effects were computed. The indirect effect was

Table 4. Hypotheses testing results.

Hypotheses	Path coefficients total effect	Path coefficients direct effect	Path coefficients indirect effect (CI)	Level of support
Direct effect				
H1: Innovation capacity → Innovation performance		.614**		Supported
H2: Innovation performance → Competitive performance		.269**		Supported
Product objectives → Innovation performance		.159**		
Process objectives → Innovation performance		.074		
Moderation effect				
H3a: Product objectives * Innovation capacity → Innovation performance		.095*		Supported
H3b: Process objectives * Innovation capacity → Innovation performance		-.021		Not Supported
Mediation effect				
H4: Innovation capacity → Innovation performance → Competitive performance	.331**	.166**	.165** (.07, .256)	Supported
Conditional indirect effect of product objectives				
Innovation capacity → Innovation performance → Competitive performance				
Product objectives (Low)			.144** (.063, .235)	
Product objectives (Medium)			.170** (.078, .265)	
Product objectives (High)			.195** (.095, .309)	
Conditional indirect effect of process objectives				
Innovation capacity → Innovation performance → Competitive performance				
Process objectives (Low)			.177** (.074, .280)	
Process objectives (Medium)			.167** (.074, .266)	
Process objectives (High)			.161** (.069, .282)	
Control variables				
Ownership type → Competitive performance		.04		
Firm size → Competitive performance		.03		
Industry type → Competitive performance		.076		
Firm age → Competitive performance		-.048		

Notes: $N = 238$.

[†] $p < .1$; * $p < .05$; ** $p < .01$ (two-tailed).

Bootstrapping $N = 1000$, CI = Upper and lower limits of 95% confidence interval.

derived by multiplying the standardised path coefficients for the relationships between innovation capacity and innovation performance ($\beta = .614$), and between innovation performance and competitive performance ($\beta = .269$), yielding an indirect effect of .165. The Sobel test confirmed the significance of this mediating pathway (test statistic = 3.56; $p < .01$), indicating that innovation performance partially mediates the effect of innovation capacity on competitive performance (Baron & Kenny, 1986; Felipe et al., 2016).

Subsequently, the direct effect of innovation capacity on competitive performance, after controlling for the mediator, was reduced to $\beta = .166$ ($p < .01$), further supporting the presence of partial mediation. These results suggest that while innovation capacity has a direct impact on competitive performance, a substantial portion of this effect is transmitted through the firm's innovation performance.

To further validate the mediation effect, the bias-corrected bootstrapping procedure was employed, which is considered more robust than the Sobel test in small to moderate samples (Preacher & Hayes, 2004). Based on 1,000 bootstrap resamples, the 95% confidence interval for the indirect effect ranged from .07 to .257, not crossing zero, thereby confirming the significance of the mediating effect at conventional levels.

Additionally, conditional indirect effects were examined across varying levels of product objectives and process objectives. The results of the conditional mediation analysis reveal that product objectives significantly shape the strength of the indirect relationship between innovation capacity and competitive performance via innovation performance. Specifically, the indirect effect of innovation capacity on competitive performance increases progressively across low, medium, and high levels of product objectives: .144 (CI [.063, .235]), .170 (CI [.078, .265]), and .195 (CI [.095, .309]), respectively. Since none of the confidence intervals include zero, these effects are statistically significant at all levels of the product objectives.

In contrast, a modest decline in the magnitude of the indirect effect was observed as process orientation increased: .177 at low levels (CI [.074, .280]), .167 at medium levels (CI [.074, .266]), and .161 at high levels (CI [.069, .282]). Although the indirect effect remained statistically significant across all levels, evidenced by confidence intervals that exclude zero, the gradual reduction suggests that firms with a stronger focus on process objectives may experience a slightly diminished translation of innovation capacity into competitive performance via innovation performance.

Regarding the control variables included in the model (i.e., ownership type, firm size, industry classification, and firm age), none exhibited a statistically significant direct effect on competitive performance. This suggests that, in the context of this study, structural firm characteristics did not exert an independent influence on competitive outcomes once innovation capacity and innovation performance were accounted for. While these variables were theoretically justified and retained to control for potential background variance, the findings indicate that competitive performance appears to be more closely associated with innovation-related dynamics than with baseline organisational attributes.

Discussion and conclusions

Over a considerable period, the impact of innovation on competitive performance has sparked significant interest among researchers, practicing managers, and policymakers.

Building on Schumpeter's insights in 1934, the literature widely acknowledges the critical role of innovation in ensuring firm survival and prosperity. In today's dynamic business landscape, where existing products face shifts in consumer preferences, rapid technological advancements, shortened product life cycles, and intensified international competition, a firm's continuous ability to generate innovations is paramount for maintaining a competitive edge and enhancing performance (Atalay et al., 2013).

Firms that actively engage in innovation activities are better positioned to improve their competitive performance and achieve success. It is widely accepted that innovation is a key driver for firms to thrive and excel in their industries. Despite this recognition, the intricate and multifaceted relationships between innovation capacity and competitive performance have not received adequate attention. Therefore, our research highlights the pressing need for a deeper understanding of the boundary conditions and mediating mechanisms that elucidate the link between innovation capacity and competitive performance.

Regarding the moderating effect of the two objectives firms use to drive innovation, product objectives positively moderate the effect of innovation capacity on innovation performance, whereas this interaction effect is not significant for process objectives. This suggests that product objectives, rather than process objectives, more effectively clarify the impacts of innovation capacity on innovation performance. Our findings highlight the possibility that innovation objectives linked to organisational processes, such as how a firm conducts its business and creates value, play a more crucial role in transforming innovation capacity into innovation performance than objectives related to specific products and services. This may be due to the comprehensive and activity-based nature of process objectives, which could influence how innovation capacity affects innovation performance.

Theoretical implications

Our study offers novel insights into the intricate network of relationships involving innovation capacity, product and process objectives, innovation performance, and competitive performance. Our study makes several critical contributions to innovation literature by uncovering and empirically validating a nuanced network of relationships between innovation capacity, strategic innovation objectives (product and process), innovation performance, and competitive performance. Specifically, we provide empirical evidence based on SEM from a sample of indigenous and foreign firms operating in Turkey, confirming that innovation capacity significantly enhances innovation performance, and that innovation performance, in turn, positively influences competitive performance. Furthermore, we find that product objectives positively moderate the relationship between innovation capacity and innovation performance, whereas process objectives do not exhibit a significant moderating effect. These findings contribute to the literature by empirically demonstrating the mechanisms (mediation via innovation performance) and contingencies (moderation by innovation objectives) through which innovation capacity affects firm outcomes. In doing so, our study responds to long-standing calls for research that goes beyond linear relationships (Piening &

Salge, 2015) to examine the interactive and indirect pathways underlying innovation-performance dynamics.

Our findings confirm a significant positive effect of innovation capacity on innovation performance. Furthermore, we observe a substantial positive effect of innovation performance on competitive performance. Evidently, superior competitive performance emanates from credible innovation performance, which, in turn, rests on the foundation of robust innovation capacity. This underscores the paramount importance of innovation capacity in driving competitive performance and should thus be at the heart of any firm's business strategy.

Unlike most studies that focus on specific types of innovation, such as product or process innovation, our study embraces a more holistic perspective of innovation, encompassing products, processes, strategies, techniques, structures, and marketing. This broader view is pertinent as previous research has discussed the complementary or synergistic effects of these diverse types of innovation (Battisti & Stoneman, 2010; Damanpour et al., 2009; Martinez-Ros & Labeaga, 2009). Firms often pursue multiple forms of innovation to achieve complementarity and synergy in their innovation endeavours.

Our findings highlight that how a firm implements and leverages its innovation capacity significantly influences innovation performance and, consequently, competitive performance. Merely generating novelty from innovation capacity may be necessary but insufficient for achieving performance success. The amalgamation of attributes, such as superior implementation to actualise innovation, support for innovation champions, and other firm characteristics encompassed within the innovation capacity concept, plays a decisive role. Attaining superior innovation capacity provides a competitive edge, particularly in turbulent and rapidly evolving business landscapes, an advantage that firms lacking in innovation capacity are unlikely to achieve. This aligns with the conclusion of Lee et al. (2019, p. 513), who demonstrate 'that focusing solely on a single type of innovation hinders the potential advantages resulting from the synergy effects of diverse innovation activities'. Lee et al. (2019) advocate a multifaceted approach towards various innovation activities to enhance innovation capabilities. Our findings emphasise the significance of an innovation capacity centred around a corporate culture that celebrates and rewards innovation champions, tracks and monitors innovative projects, allocates budgets, and fosters collaboration.

Practical implications

The ability to innovate is a core competency that empowers firms to attain competitive advantage (Jin et al., 2004). Gaining a deeper understanding of the precise nature of innovation performance will greatly assist managers in prioritising and developing the appropriate innovation capacity. Based on the findings of this study, it is evident that innovation capacity is a critical driver for innovation performance. This emphasises the importance of managers investing in innovation capacity. Relying solely on quickly achieving innovation performance might lead managers to overlook crucial organisational aspects necessary to fully reap innovation's benefits to the firm. Notably, innovation demands substantial resource inputs (Eisenhardt & Martin,

2000), and only a few organisations possess sufficient resource slack to withstand potential failures.

Hence, our research underscores the necessity for managers to diligently cultivate innovation capacity. This involves a strategic and structured approach encompassing several actionable practices. First, managers should foster a culture that encourages experimentation, tolerates failure, and supports idea generation by establishing clear innovation values and leadership support. Second, building cross-functional teams and investing in employee training can enhance the skills and diversity of thought necessary for innovative outcomes. Third, allocating dedicated resources – both financial and temporal – for innovation projects, along with mechanisms for tracking and evaluating innovation efforts, ensures alignment with broader organisational goals. Lastly, implementing knowledge-sharing systems and leveraging digital tools can help embed innovation processes into the daily operations of the firm. Firms can progressively build and sustain robust innovation capacity that supports long-term competitive performance by integrating these practices.

Nonetheless, managers should be mindful that the mere dedication of more resources to innovation capacity may not necessarily guarantee innovation performance. Therefore, managing innovation capacity thoughtfully is paramount to enhancing competitive performance. Overcommitting resources to innovation capacity without achieving corresponding innovation performance will result in wasted resources and potential underperformance for the firm (Rosenbusch et al., 2011).

Furthermore, managers should recognise that the emphasis on innovation capacity should be viewed as a dynamic evolutionary process, continually evolving to produce new performance-enhancing innovation outcomes. A flexible approach to innovation capacity will enable firms to adapt and respond effectively to changing market demands, ensuring sustainable competitive advantage in the long run. Such an approach provides a safe and nurturing space for employees to take risks, propose new ideas, and engage in experimentation.

Limitations and future research directions

Like all studies, this research has several limitations, which provide valuable directions for future research. While we acknowledge the presence of a time lag between innovation performance and competitive performance, it is possible that we may not have fully captured the extent of this time lag issue. Future research employing longitudinal data analysis would offer deeper insights into the nature of these time lags. Additionally, our study has primarily focused on inward-looking aspects and has not considered the influence of firm networks and the innovations arising from these relationships. Exploring the effect of network relationships on innovation, particularly in the context of emerging economies, could be a promising avenue for further investigation.

Moreover, the relationship between innovation and firm performance may be influenced or mediated by variables we have not investigated in this study, such as environmental turbulence, environmental dynamism, and competitiveness. Therefore, future research is needed to explore the nature of these effects on innovation and, consequently, competitive performance.

It is essential to recognise that this study was conducted within the context of Turkey. National culture can influence various aspects of innovation, including national differences in invention and innovation rates. Cultural distinctions can also impact innovation capacity, innovation inputs, and commercialisation, thereby potentially influencing the innovation-performance link (Rosenbusch et al., 2011). Therefore, empirical studies conducted in various country contexts, especially emerging markets, are crucial to further generalise and validate our findings.

Conclusions

In conclusion, this study highlights the pivotal role of innovation capacity as a foundational enabler of innovation performance and, ultimately, competitive performance. It provides a nuanced understanding of how innovation-driven strategies lead to firm-level outcomes by taking a holistic approach that incorporates various forms of innovation and investigates both mediating and moderating mechanisms. Our findings emphasise that merely possessing innovation capacity is insufficient – its effective deployment through strategic objectives, cultural support, and resource alignment is essential. For practitioners, this underscores the importance of deliberately developing and managing innovation capacity through structured initiatives and ongoing organisational learning. As firms navigate increasingly dynamic and competitive markets, those that embed innovation deeply and systematically within their operations will be best positioned to achieve sustained success.

Note

1. We do not propose moderation in the link between innovation performance and competitive performance because this relationship reflects the realised outcomes of previous strategic inputs, rather than their directional shaping. Once innovation performance is achieved, its contribution to competitive performance tends to be more direct and less conditional on internal strategic objectives. However, future research may explore whether post-innovation strategies (such as commercialisation intensity) moderate this link.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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