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Effects of dynamic capabilities of owner-managers and employees on SME performance: the mediating role of business model innovation

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ABSTRACT

This empirical study investigates the relationship among Dynamic Capabilities (DCs), the quality and financial aspects of firm performance in small- and medium-sized enterprises (SMEs), and the mediating role of Business Model Innovation (BMI) in a developing country context. Following a pilot study of structured interviews with owners/managers, we conducted a questionnaire study on 160 Turkish SMEs. We tested the hypotheses using partial least squares structural equation modelling (PLS-SEM). Factor analysis findings confirm the multilayer character of our DCs construct. Owner-manager DCs are positively associated with financial performance, while employee-level DCs are positively associated with quality performance. BMI partially mediates the relationship between Owner-manager DCs and financial performance, and fully mediates the Owner-manager DCs-quality performance relationship. In contrast, BMI fully mediates the relationship between Employee-level DCs and financial performance, and partially mediates the Employee-level DCs-quality performance relationship. The study provides practical insights for SMEs operating in developing economies on how to translate their organisational capabilities to improved performance. It also extends the literature on the antecedents of BMI by examining a DCs framework enriched with organisational layers.

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Business model innovation; dynamic capabilities; firm performance

1. Introduction

Dynamic Capabilities (DCs) theory posits that a firm's ability to sense, seize and reconfigure resources allows organisations to adapt their ways of doing business in response to rapidly changing environments. These change-oriented and continuously evolving capabilities belong anonymously to the whole organisation as embedded within the procedures and routines (Madsen 2010; Teece, Pisano, and Shuen 1997).

Empirical studies on the natur

outcomes in SMEs from a developing country, addressing the following research questions:

- Can DCs in SMEs be validly categorised across organisational layers, namely owner/managerial DCs and employee-level DCs?
- Which DCs are more strongly associated with performance in terms of quality and financial aspects?

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- What is the role of BMI in the relations of DCs to firm performance?

2. Theoretical background and literature review

2.1. DCs and BMI

DCs involve continuously renovating the way of doing business to create and sustain superior market value thanks to the capabilities of sensing the opportunities and threats emerging out of market dynamics and adapting successfully to changing conditions (Teece 2007). Specifically, SMEs, compared to larger firms in developed countries, face challenges such as limited finance, supply/labor shortages, inadequate infrastructure, trade restrictions, technological advancements and market turbulence (Ndiege, Mwaura, and Christopher 2023; Tshwete 2020). Developing countries' SMEs must rethink how they create, deliver and capture value by focusing on revitalising their existing BMs to enhance both quality and financial performance to survive.

BM as a conceptual tool helps SMEs understand the components of market value that they offer and facilitates the formulation of a successful competitive strategy (Osterwalder, Pigneur, and Tucci 2005). Hence, it concentrates on value creation via various capabilities and resources, value proposition/delivery in customer solutions and value capture in cost structures and revenue models (Osterwalder and Pigneur 2010). Literature on the BMI drivers distinguishes between external (e.g. competition, technology, stakeholder demands) and internal (e.g. DCs, knowledge, strategy) factors (Selezneva, Veselova, and Anand 2023).

2.2. DCs at individual layers

The DCs framework conceptualises organisational capabilities as embedded in processes and rules, minimising the need for continuous managerial intervention via pre-applied decisions (Basile and Faraci 2015). Indeed, these anonymous capabilities derive from individual capabilities of founders, managers and experts. The appearance of the human perspective in DC literature is very limited (Corrêa et al. 2019). In these limited appearances, individual subjects are generally managers or entrepreneurs who shape the organisation. More specifically, earlier studies have not yet empirically categorised DCs at various layers (i.e. employees, managers, owners, etc.) to investigate their relation to BMI and performance (Ogrenci and Alpkan 2023).

Managerial DCs are innate and learnt abilities consisting of attention, interpretation, comprehension, sense making, networking, reconfiguring, entrepreneurial alertness and ad-hoc problem-solving capabilities (Corrêa et al. 2019; Saul and Gebauer 2018). They lead their firm to purposeful creation, extension and modification of the organisational routines (Teece, Pisano, and Shuen 1997). Managerial DCs work best in organisational transformation and strategic change (Ambrosini and Altintas 2019), and they make the real difference among firms facing comparable external conditions (Adner and Helfat 2003).

Teece (2018) emphasises exploring employee-level DCs as downward extensions of individual capabilities. Non-managerial staff and teams significantly contribute to solving problems within volatile and ambiguous environments (Sprafke, Externbrink, and Wilkens 2015).

2.3. DCs, BMI and performance

Managerial-level DCs translate sensing and seizing behaviours into financial performance through strategic resource orchestration and renewal. Teece (2018) conceptualises DCs as 'workable management systems', enabling managers to sense market shifts, seize opportunities and reconfigure assets to sustain competitiveness. Empirical evidence confirms this direct link: opportunity sensing and adaptive resource allocation enhance SMEs' financial outcomes (Mwajambia and

Kising'u 2022), while managerial DCs drive profitability through strategic investment and innovation alignment (Durán, Aguado, and Perdomo-Ortiz 2023).

At the operational level, employee-driven DCs affect quality performance through process improvement, flexibility and learning routines. Li (2022) and Wang and Ahmed (2007) demonstrated that frontline sensing and reconfiguring capabilities enhance service quality by enabling adaptive workflows, supporting Salvato and Vassolo's (2018) argument that lower-level routines form the microfoundations of DCs. Prior literature theorised BMI as a mechanism through which employee-driven improvements are scaled and managerial DC reconfigure routines, structures and processes, thereby enhancing quality and innovation outcomes (Clauss 2017; Foss and Saebi 2017; Teece 2018).

3. Hypotheses development

This study explores the associations between owner-manager and employee-level DCs and performance in SMEs. Meta-analyses (e.g. Helfat and Peteraf 2014) report consistent positive links between DCs and performance, often measured via self-reported financial indicators such as sales growth, ROI or operating margin (Bouwman, Nikou, and de Reuver 2019; Tavassoli and Bengtsson 2018). In SMEs, managerial decisions influence financial outcomes primarily through strategic resource allocation, whereas employees affect performance through operational execution. Therefore, we propose a positive relationship between DCs at both the owner/manager and employee levels and financial performance as follows:

H1a: Employee-level DCs are positively associated with firm financial performance.

H1b: Owner-manager-level DCs are positively associated with firm financial performance.

DCs enhance quality performance by enabling continuous improvement in processes and products in response to evolving customer needs and technological change (Arend and Bromiley 2009). Seizing and reconfiguring drive improvement, while sensing and reconfiguring support quality consistency (Su and Linderman 2016). Quality management stems from managerial and employee capabilities such as agility, learning and innovation culture (Liao, Fei, and Chen 2007). Especially in SMEs, employee-level DCs shape frontline routines allowing quality performance to improve even before formal quality systems emerge. Accordingly, we propose positive relationships between managerial and employee-level DCs and firm quality performance. At the frontline, sensing and reconfiguring are enacted through continuous interaction with processes and customers. Employees detect deviations and emerging needs and respond through small, routine-level adjustments such as adapting task sequences or service routines. These micro-adjustments enhance process reliability, responsiveness and consistency, directly supporting quality performance.

H2a: Higher employee-level DCs are positively associated with firm quality performance.

H2b: Higher owner-manager-level DCs are positively associated with firm quality performance.

Although theory suggests primary linkages (managerial DCs – financial performance; employee DCs – quality performance), cross-layer paths were also specified to allow the data to reveal potential alternative or indirect relations without imposing strict a priori constraints.

While many studies support a positive link between BMI and firm performance (Heij, Volberda, and Van den Bosch 2014; Zott and Amit 2008), others report mixed findings (Halecker, Bickmann, and Hölzle 2014). Furthermore, the literature highlights DCs' critical role in enabling BMI (Sarwar, Gao, and Khan 2024). Exploring BMI's mediating role may clarify how DCs drive performance, especially in dynamic contexts. Differentiating DCs across organisational layers can extend theoretical understanding. Through BMI, firms may cut costs, boost efficiency, innovate revenue models and gain competitive advantage. Thus, we hypothesise that BMI mediates the DC–performance link:

H3a: BMI is associated with the relationship between employee-level DCs and firm's financial performance.

H3b: BMI is associated with the relationship between owner-manager-level DCs and firm's financial performance.

BMI can improve the quality of products or services by rethinking the value proposition with a more customer-centric approach. Firms that engage in BMI often prioritise improving customer experience by offering more personalised, accessible and value-enhancing solutions, which in turn improves product and service quality and supports sustainable performance development. Accordingly, we hypothesise that BMI mediates the relationship between DCs and quality performance:

H4a: BMI acts as an intervening mechanism linking employee-level DCs and firm's quality performance.

H4b: acts as an intervening mechanism linking owner-manager-level DCs and firm's quality performance.

Our hypothesised model depicting the paths between Employee-level and Owner/manager-level DCs and firm performance via BMI is shown Figure 1.

4. Methodology

4.1. Questionnaire formation and data collection

We obtained both the BMI scale and the Employee/Owner-manager DC questions from Ogrenci and Alpkan (2023), which based the former on Clauss (2017) and developed the latter following Kump et al.'s (2019). The firm performance scale was adapted from Gunday et al. (2011). The scales were translated into Turkish using a multi-stage procedure to ensure conceptual equivalence, identifying established academic terms for DC dimensions. Following the protocol of Sousa and Rojjanasrirat (2011) and Brislin (1970), two authors translated and back-translated the items, while a third author independently reviewed the final version for conceptual consistency. This process ensured that the terminology reflected the language familiar to Turkish SME managers. A pilot test with 12 managers confirmed the face validity and clarity of the items. All scales were measured with a

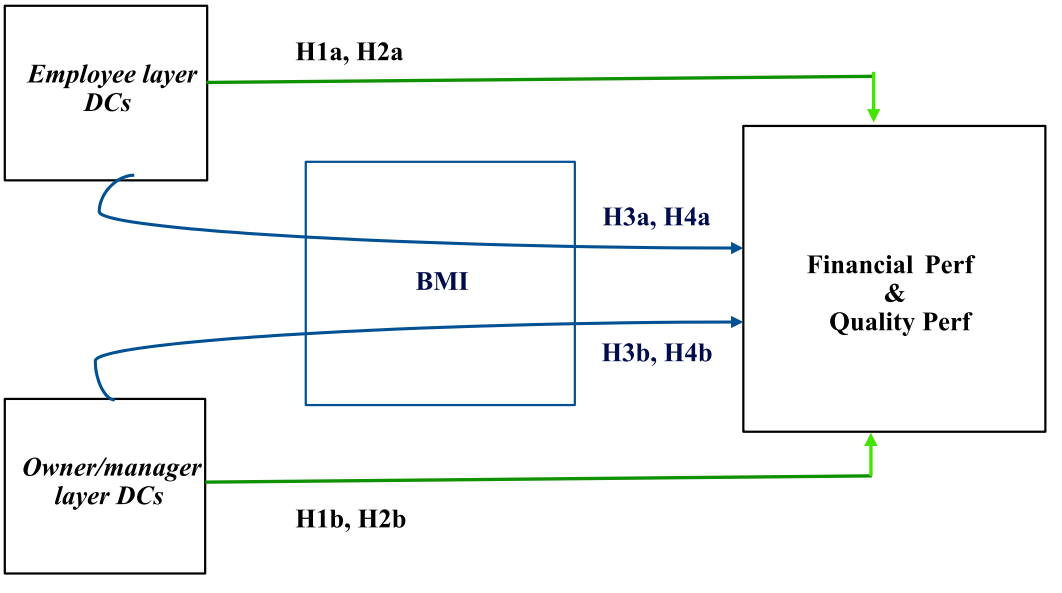


Figure 1. Hypothesised model of relations.

5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Procedural steps were applied to reduce Common Method Bias (CMB), including assuring respondent anonymity, using validated scales and separating constructs across questionnaire sections.

Our sample consists of owner-managers of Turkish SMEs affiliated with technology parks and R&D related associations. Employee DCs are operationalised as observable sensing, seizing and reconfiguring routines. In SMEs, owners/managers are well positioned to synthesise these employee-driven behaviours, consistent with the microfoundations of DC (Helfat and Martin 2015; Teece 2007). The use of owners/managers as single respondents is methodologically appropriate because they act as strategic observers who coordinate organisational routines. As key informants with the necessary prior knowledge and pattern recognition, managers provide a valid assessment of employee-level DCs (Bogner and Thomas 1992; Short et al. 2009).

The sectoral and firm-size distribution of the sample is presented in Table 1 for descriptive transparency. Sectoral control is omitted as the sample's shared R&D affiliation (e.g. technopark residency) and exposure to high technological turbulence ensure a homogeneous environment. These shared institutional and regulatory demands minimise cross-industry variance within the PLS-SEM model. We obtained 160 complete responses, as all survey items were mandatory. To check for outliers, we assessed skewness and kurtosis values, which fell within acceptable thresholds of ±2 for skewness and ±7 for kurtosis (Byrne 2010), indicating normality (skewness: −0.134 to −0.002; kurtosis: −0.218–2.77).

4.2. Model formation and data analysis

BMI was measured under 3 sub-dimensions with 30 items, and DC was measured under 6 sub-dimensions with 24 items as second-order reflective-formative models. The DCs construct was transformed into two first-order constructs following results of exploratory factor analysis. Finally, the firm performance construct was measured under 2 sub-dimensions with 9 items (Appendix 1).

We followed the analysis procedure in Hair and colleagues (2017, 2018). We chose PLS-SEM to test our hypotheses due to its advantages in analysing complex second-order latent constructs in complex models, especially with a small sample size and high number of constructs and indicators, as well as its ability to handle reflective and formative indicators (Lowry and Gaskin 2014). Moreover, PLS is more appropriate when it is necessary to use latent variable scores in subsequent exploratory and confirmatory research (Clauss et al. 2019; Hair et al. 2017).

Analyses were performed in the following three steps:

- Validating the first-order measurement model,
- Validating the second-order measurement model,
- Testing the structural equation model (hypothesis testing).

Table 1. Sector and firm-size distribution of the sample.

Category	*n*
Sector	
Technology	85
Manufacturing	28
Service	22
Finance	10
Other	15
Number of employees	
<10	25
10–50	59
51–100	20
101–500	37
>500	19

4.2.1. Validating the first-order measurement model

To validate the first-order measurement model, DC (six sub-dimensions) and BMI (three sub-dimensions) are modelled as first-order reflective latent constructs.

The satisfactory model has been reached through the trimming procedure (Hair et al. 2018). To ensure discriminant validity and scale parsimony, eight items (BMIVCAP1–2, BMIVCRE7–9, BMIVPRO2,3,8) were removed due to significant cross-loadings (>0.50 on unintended constructs) and low factor loadings (<0.70), a refinement that resolved conceptual overlaps and strengthened the remaining factor structure without altering the core meaning of the constructs. In the initial measurement model, the Seizing and Reconfiguring dimensions of Owner-Manager DCs exhibited insufficient discriminant validity (HTMT = 0.94), indicating a high degree of conceptual overlap (Gaskin, Godfrey, and Vance 2018). In SMEs, seizing opportunities and reconfiguring resources often occur as integrated actions rather than sequential phases, as owner-managers typically conceptualise and implement strategic shifts simultaneously. This reflects the firm's centralised structure, where opportunity exploitation and resource reallocation are acting together rather than as distinct stages. To reflect this managerial convergence, these dimensions were merged. This consolidation significantly improved the model's integrity, resulting in a robust HTMT value of 0.65 against Owner-ManagerSensing (Appendix 1). It retains a distinct dimension as it represents the external scanning and identification phase, which remains conceptually and operationally separate from the internal execution routines of seizing and reconfiguration, thereby ensuring both empirical clarity and alignment with the operational reality of small-firm leadership (Zahra, Sapienza, and Davidsson 2006).

The satisfactory model items have high factor loading to their respective constructs with high *t*-statistics ($p < 0.005$). Measurement model's latent constructs reliabilities have been assessed using Rho_A(rA) and Cronbach's alpha (α) with a threshold at 0.70 (Bagozzi and Yi 1988; Cronbach 1951; Fornell and Larcker 1981; Henseler, Ringle, and Sinkovics 2009). All three reliability indicators are well above 0.70 and below 0.95 for all latent constructs. Additionally, convergent validity assessment for latent constructs through Average-Variance-Extracted (AVE) gives values above the threshold of 0.50 (Table 2).

Discriminant validity of the revised measurement model was further assessed using the HTMT criterion, with all values falling below the recommended threshold, thereby confirming satisfactory discriminant validity among the constructs (Table 3; Kline 2011; Henseler, Ringle, and Sarstedt 2015).

Performance assessments based on owner-managers' evaluations provide a more consistent representation of firms' operational outcomes given the limited availability of reliable public financial data for Turkish SMEs and the prevalence of tax-driven accounting practices. Consistent with prior research, owner-managers are able to assess overall performance beyond fragmented accounting figures and to benchmark their firms relative to competitors (Dess and Robinson 1984; Rauch et al. 2009).

4.2.2. Validating the second-order measurement model

BMI, Owners' DCs and Employees' DCs are modelled as second-order reflective-formative constructs using a two-stage approach (Sarstedt et al. 2019). As we ensured the first-order model validity and reliability, we generated latent variable scores for each first-order construct to serve as indicators for the higher-order constructs.

BMI is a second-order construct, and it has three sub-dimensions (Value Creation, Value Proposition and Value Capture). Owner-Managers' DCs and Employees' DCs are also formative second-order constructs. Employee DCs dimension is formed by three sub-dimensions: Employee DCs-Sensing, Employee DCs-Seizing and Employee DCs-Reconfiguring. Owner-Managers' DCs dimension is formed by two sub-dimensions of Owner-Managers' DCs-Sensing and Owner-Managers' DCs-Seizing-Reconfiguring (Table 4).

Table 2. Construct reliability and convergent validity test results for the first-order measurement model.

Latent constructs	Rho_A	Cronbach's alpha	AVE
BMI-Value-Capture	0.801	0.803	0.631
BMI-Value-Creation	0.908	0.911	0.577
BMI-Value-Proposal	0.892	0.895	0.537
Employees'-DCs-Reconfiguring	0.786	0.812	0.611
Employees'-DCs-Seizing	0.876	0.877	0.730
Employees'-DCs-Sensing	0.876	0.876	0.729
Owner-Managers'-DCs-Seizing-Reconfiguring	0.857	0.864	0.504
Owner-Managers'-DCs-Sensing	0.803	0.807	0.629
Financial-Performance	0.868	0.874	0.659
Quality-Performance	0.800	0.807	0.624

Table 3. HeteroTrait-MonoTrait ratio (HTMT)-matrix test results for the first-order measurement model.

	BMIV CAP	BMIV CRE	BMIV PRO	DCE Recon	DCE Seize	DCE Sens	DCO Seize-Recon	DCO Sens	Perf-Finance
BMIVCAP									
BMIVCRE	0.674								
BMIVPRO	0.801	0.749							
DCERecon	0.500	0.786	0.634						
DCESeize	0.591	0.630	0.612	0.845					
DCESense	0.485	0.456	0.546	0.694	0.781				
DCOSeize-Recon	0.439	0.768	0.651	0.704	0.501	0.329			
DCOSens	0.567	0.500	0.700	0.437	0.464	0.503	0.655		
Perf-Finance	0.456	0.440	0.479	0.310	0.284	0.299	0.283	0.419	
Perf-Quality	0.552	0.641	0.692	0.520	0.471	0.385	0.478	0.247	0.610

As for validating our structural model, we applied Consistent PLS-SEM Algorithm path analysis and investigated model fit indices for the estimated model. SRMR (0.042) is much smaller than 0.08, and NFI (0.940) is above the threshold, 0.9. Both values support our model (Figure 2).

To evaluate potential CMB, we performed Harman's single-factor test, where the largest factor accounted for 33.35% of the variance, below the threshold of 50% (Podsakoff et al. 2003; Podsakoff and Organ 1986). In addition, both outer VIF (1.36–3.33) and inner VIF (1.64–3.12) values remained below the guideline of 5 (Hair et al. 2018) and even under the conservative criterion of 3.3 used in the full collinearity assessment (Kock 2015). Collectively, these converging indicators demonstrate that CMB is unlikely to have materially affected the results. Moreover, the latent variable correlation matrix (Table 5) revealed only moderate and theoretically justified associations (e.g. $r = .66–.70$ between BMI and DC dimensions), far from the redundancy risk threshold ($r > .90$). Collectively, these converging indicators demonstrate that collinearity is not problematic and that CMB is unlikely to have materially affected the results.

5. Findings

In Turkish SMEs, the owner-manager often personally oversees both opportunity exploitation and structural change decisions (Ogrenci et al. 2023). This managerial centralisation may blur the practical distinction between seizing and reconfiguring capabilities, which are more separable in larger organisations. By contrast, sensing often remains distinct as it relies on front-end employees who have frequent customer contact and operate in specialised roles. In prior research across different contexts, theoretically distinct sub-dimensions have merged when empirical evidence indicated high correlations (Han and Abdul Rahman 2025). In the current study, we merged the seizing and reconfiguring dimensions for certain analyses while keeping the sensing dimension separate in reporting and interpretation. This decision is supported by the high HTMT values and cross-loadings

Table 4. Latent variables' loadings for the second-order measurement model.

Relations	Factor loading	*t*-statistics
BMI↔BMIVCAP	0.785	29.212**
BMI↔BMIVCRE	0.902	47.285**
BMI↔BMIVPRO	0.915	58.513**
DCEmpl↔DCERecon	0.861	36.914**
DCEmpl↔DCESeize	0.917	62.786**
DCEmpl↔DCESense	0.865	29.546**
DCOwner↔DCOSeize-Recon	0.939	82.956**
DCOwner↔DCOSense	0.803	18.509**

**Significant at the 0.001 level.

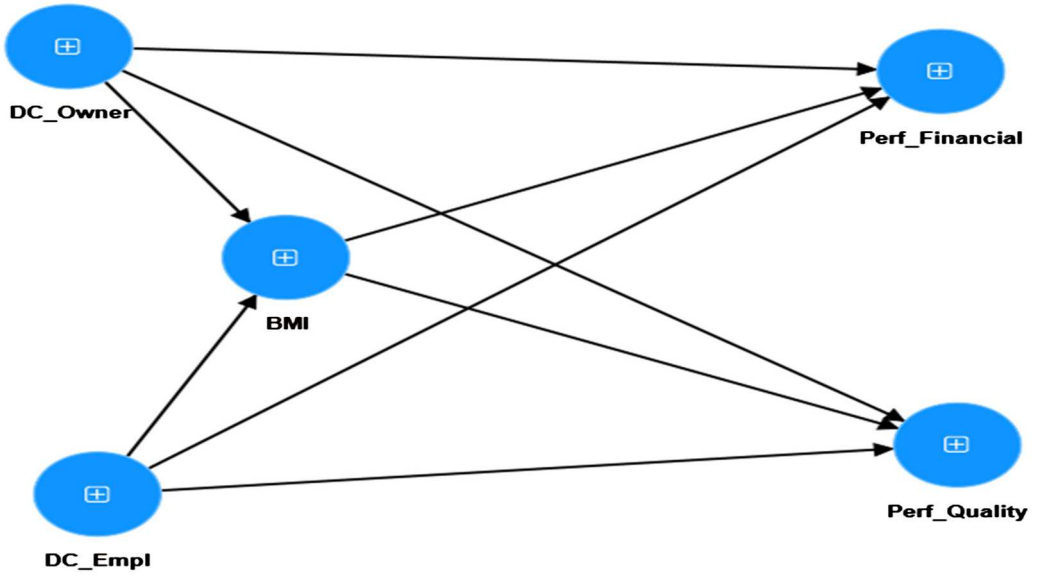


Figure 2. Path model for DCs-BMI-Performance relations.

Table 5. Latent factor means, standard deviations and correlations with confidence intervals.

Variables	M	SD	BMI	DCEmp	DCOwn	Perf_Fin	Perf_Quality
BMI	3.84	0.63					
DCEmp	3.59	0.74	0.66** [.56; .74]				
DCOwn	4.48	0.60	0.70** [.61; .77]	0.54** [.41; .64]			
Perf_Fin	4.03	0.61	0.46** [.33;.57]	0.29** [.14; .43]	0.32** [.17; .45]		
Perf_Quality	3.56	0.72	0.62** [.51; .70]	0.43** [.29; .55]	0.36** [.22; .49]	0.51** [.38; .61]	

Values in square brackets indicate the 95% confidence interval. * $p < 0.05$. ** $p < 0.01$.

observed in our data, and it is theoretically justified given the SME context, where seizing and reconfiguring activities tend to converge and are carried out simultaneously by managers.

Findings showed that all indirect associations between DC dimensions and performance dimensions through BMI are statistically significant; therefore, H3a,b and H4a,b are supported. Also, BMI has significant direct associations with all performances. Whereas the total associations of DC dimensions and performance dimensions are found to be non-significant in some cases (Table 5). Second-order dimensions of Employees' DCs and Owner-Managers' DCs were identified, and their

Table 6. Hypotheses test results.

Relations	*b* values (original means)	*t*-statistics	*p*-values	Hypotheses
DCEmpl→Perf-Finance	0.171	1.562	0.118	H1a Unsupported
DCOwner→Perf-Finance	0.234	2.674	0.008	***H1b Supported***
DCEmpl→Perf-Quality	0.325	2.601	0.009	***H2a Supported***
DCOwner→Perf-Quality	0.202	1.610	0.108	H2b Unsupported
DCEmpl→BMI→Perf-Finance	0.269	2.977	0.003	***H3a Supported***
DCOwner→BMI→Perf-Finance	0.315	3.280	0.001	***H3b Supported***
DCEmpl→BMI→Perf-Quality	0.389	3.107	0.002	***H4a Supported***
DCOwner→BMI→Perf-Quality	0.455	3.665	0.000	***H4b Supported***

associations with performance dimensions were examined through the mediation of BMI. BMI shows strong associations with all performance dimensions. Owner-Managers' DCs are positively associated with financial performance (H1b), while their total association with quality performance is not significant (H2b). In contrast, Employees' DCs are positively associated with quality performance (H2a), whereas their total association with financial performance is not significant. As a result, second-order Employees' DCs and Owner-Managers' DCs dimensions were identified, and their association with all Performance factors was examined in the mediation of BMI. BMI shows a strong association with all performance factors. Owner-Managers' DCs are positively associated with financial performance (H1b), whereas their total association with quality performance is not significant (H2b). Employees' DCs are positively associated with quality performance (H2a), whereas their total association with financial performance is not significant (H1a) (Table 6).

The findings underscore the central role of BMI in firm performance. The results indicate that owner-managers' DCs are positively associated with the firm's financial performance, even when no new BMs are introduced; however, owner-managers' DCs are not associated with quality performance unless BMI or employee-level engagement is reflected. Adjusted R^2 (67.8%) suggests that Owner-Managers' and Employees' DCs explain a substantial proportion of the variance in BMI. Furthermore, the firm's quality performance is explained at 45.9% and financial performance is explained at 23.3% by the association of DCs and BMI.

Effect sizes were further analysed using the indirect-to-total effect ratio. This confirms BMI as the primary strategic engine; for instance, its mediation ($\beta = 0.455$, $p < 0.001$) accounts for the dominant share of the total effect in the Owner-Managers'DC-Quality relationship. Even where direct paths (e.g. H1a, H2b) are non-significant, the robust BMI-mediated paths demonstrate that BMI is the essential mechanism for translating capabilities into tangible performance.

6. Discussions

Results show that both DC types are significantly associated with performance: owner/managerial DCs are positively associated with financial performance, while employee-level DCs are associated with quality performance. Findings also confirm BMI's central mediating role between DCs and performance.

6.1. Theoretical implications

This empirical study uniquely contributes to individual DCs literature by extending their categorisation and examining their association with performance in SMEs. While Katkalo, Pitelis, and Teece (2010) and Sprafke, Externbrink, and Wilkens (2015) called for greater human perspective in individual DCs research, previous studies focused primarily on developing owner/managerial DC lists. Addressing this gap, we explicitly analyse DCs of both owner-managers and employees. Studying SMEs provides a suitable context to distinguish and operationalise DCs that are often indistinct across organisational layers. Our findings show that owner/managerial DCs are associated with financial performance, while employee-level DCs relate to quality performance. The study also

reinforces BMI's central role in connecting individual capabilities to organisational performance (Alsaadi, Alpkan, and Yildiz 2025; Ferreras-Méndez et al. 2021).

The differential effects of DCs across actor levels can be explained by the distinct mechanisms through which they operate, as emphasised in the microfoundations of the DC literature. Owner-manager DCs function via strategic resource orchestration, where sensing and seizing guide capital allocation, investments and strategic pivots, linking them to financial performance. Because these decisions directly shape cost structures and revenue models, part of their impact on financial performance occurs independently of BMI, explaining the partial mediation. The full mediation of the owner-manager DCs – quality association indicates that owner-managers do not directly shape daily process execution, which is the immediate source of quality outcomes, but BMI functions as the mechanism translating strategic intent into changes in value creation and delivery processes that shape quality outcomes (Helfat and Martin 2015; Teece 2018).

In contrast, employee-level DCs act as operational microfoundations embedded in daily routines, where the primary mechanism is routine refinement and adaptation, which affect process reliability and service consistency rather than financial metrics directly. Localised sensing and reconfiguring improve process reliability, reduce errors and enhance service consistency, relating them to higher quality performance (Felin et al. 2015; Salvato and Vassolo 2018) but not directly to financial performance. From an RBV perspective, creating firm-level value requires a mechanism to combine and use local improvements across the organisation (Barney 1991). The full mediation of employee DCs – financial performance reflects BMI as the mechanism scaling bottom-up quality improvements into firm-wide value, linking strategic and operational DCs to indirect performance outcomes (Clauss 2017; Foss and Saebi 2017). In the Turkish SME context, theoretical routines often manifest as informal agility. For example, a shop-floor worker might identify a production bottleneck (sensing) and suggest a solution via informal digital channels (seizing), allowing the team to bypass formal hierarchy and adjust the workflow (reconfiguring). This illustrates how employee-level actions drive fast adaptation, bridging the gap between abstract statistical results and tangible strategic routines.

6.2. Practical implications

We recommend that SMEs begin innovation efforts, including BM renovation, by discovering and improving individual DCs. Specifically, owner-manager DCs are associated with financial performance while employees' DCs relate to quality performance. However, in both paths, BMI plays a central mediating role in the observed associations. Effect size analysis confirms that BMI explains over 60% of the performance impact. This indicates that capability investments yield tangible results primarily when they are strategically channelled into BM reconfiguration. Therefore, investments in capability building and active participation of all individuals, at various positions (e.g. entrepreneurs, intrapreneurs, mid-level managers, employees, etc.), are likely to support SMEs engaging in BMI. Entrepreneurs need to track capability development periodically and consult all members on BM renovation. SMEs might then transform the dynamic potential, hidden and dispersed within their human capital, into higher organisational performance outcomes.

6.3. Limitations and future research

We acknowledge that our study is not free from certain limitations and biases. Although the sample of 160 Turkish SMEs offers valuable insights into developing economy contexts, the generalizability of the findings could be enhanced by expanding the sectoral distribution and extending the analysis across different developing countries, as industry- and country-specific dynamics may influence the observed relationships. Despite its established validity in the SME literature, relying on single-informant subjective assessments remains a limitation, as it may introduce perceptual bias. The cross-sectional nature of the data prevents definitive causal claims. Future research could enhance these findings by employing longitudinal designs and, where institutional transparency allows,

triangulating self-reported data with objective financial indicators or multi-informant perspectives to provide a more granular view of performance. Furthermore, our respondents are exclusively owners and top managers. This limitation may somehow constrain the representativeness of our findings and limit our ability to capture diverse perspectives within the organisation. Our study focuses on the three DC dimensions, considering that additional dimensions could better explain their interactions. Again, to enrich our results and save time, we studied only those SMEs that engage in BMI; but meanwhile it might introduce some limitations in generalising our findings.

We propose newer research designs to discover individual DCs among organisational layers (top management, middle management, functional departments) and their effects in both SMEs and corporates.

Author contributions

CRediT: **Seher Ogrenci:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Writing – original draft; **Lutfihak Alpkan:** Conceptualization, Formal analysis, Methodology, Supervision, Validation, Visualization, Writing – review & editing; **Bora Yıldız:** Conceptualization, Formal analysis, Methodology, Supervision, Validation, Visualization, Writing – review & editing.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Appendix 1. Items and scale validity and reliability of first-order BMI-DC-Perf constructs and factor loadings.

Latent constructs/Items	Factor loading*	*t*-statistics**	*α*	Rho_A***	AVE
BMI VALUE CAPTURE			0.801	0.803	0.631
Examining and improving (BMIVCAP6)	0.840	25.351			
Reviewing pricing strategy (BMIVCAP4)	0.833	28.250			
Seeking solutions to save production costs (BMIVCAP5)	0.820	21.058			
Switched to a long-term revenue model (BMIVCAP3)	0.672	11.796			
BMI VALUE CREATION			0.908	0.911	0.577
Improve the workflow processes (BMIVCRE4)	0.829	26.990			
Improve the existing processes (BMIVCRE6)	0.797	19.988			
Evaluate the benefits of outsourcing (BMIVCRE11)	0.796	21.355			
Search for new collaborations (BMIVCRE10)	0.770	21.308			
Develop BMs with new collaborations (BMIVCRE12)	0.762	17.080			
Innovative production procedures and processes (BMIVCRE5)	0.753	18.651			
Employees have more up-to-date information/skills than our competitors' employees (BMIVCRE3)	0.733	17.253			
Search for the competencies to adapt to changing market (BMIVCRE1)	0.717	15.018			
Employees gained new knowledge. skills and competencies (BMIVCRE2)	0.668	11.639			
BMI VALUE PROPOSAL			0.892	0.895	0.537
Evaluating emerging market opportunities (BMIVPRO4)	0.777	20.708			
Considering underserved market segments (BMIVPRO5)	0.768	18.740			
Search for new customers/markets (BMIVPRO6)	0.768	24.334			
Strengthen customer relations (BMIVPRO12)	0.739	18.375			
Innovative/modern methods for customer retention (BMIVPRO11)	0.736	15.944			
New service offerings for customer retention (BMIVPRO10)	0.719	16.316			
New distribution channels (BMIVPRO7)	0.711	14.446			
Reviewing unmet customer needs (BMIVPRO1)	0.696	11.848			
Reviewing/Renewing distribution channels (BMIVPRO9)	0.675	11.898			

(*Continued*)

Continued.

Latent constructs/Items	Factor loading*	*t*-statistics**	*α*	Rho_A***	AVE
EMPLOYEE RECONFIGURATION DCs			0.786	0.812	0.611
In our company, there are routine practices that employees follow …					
to develop new skills to adapt (DCERecon4)	0.894	42.850			
to adapt to the current situation (DCERecon1)	0.799	25.746			
To get training and/or consultancy for employees to improve skills (DCERecon3)	0.717	12.676			
to share the new information with other employees of the company (DCERecon2)	0.701	12.250			
EMPLOYEE SEIZING DCs			0.876	0.877	0.730
In our company, there are routine practices that employees follow …					
to develop new products and/or services (DCESeiz2)	0.894	44.792			
to use new technological knowledge to improve business processes (DCESeiz1)	0.883	39.689			
to provide solutions for our customers (DCESeiz3)	0.829	18.220			
to make decisions about business processes (DCESeiz4)	0.808	23.893			
EMPLOYEE SENSING DCs			0.876	0.876	0.729
In our company, there are routine practices that employees follow …					
to identify the needs of the target customers (DCESens3)	0.873	39.759			
to gain knowledge observing competitors (DCESens2)	0.870	30.114			
to communicate with business partners (DCESens4)	0.840	29.311			
to access up-to-date information about the market (DCESens1)	0.832	28.180			
OWNER-MANAGER SEIZING-RECONFIGURATION DCs			0.857	0.864	0.504
Our company partners/senior managers …					
are quick to adapt to new working methods (DCORecon4)	0.797	21.453			
continuously lead change projects (DCORecon1)	0.783	21.074			
use newly acquired technological knowledge to improve business processes (DCOSeiz1)	0.763	20.151			
develop new products and/or services with newly acquired knowledge (DCOSeiz2)	0.741	19.078			
managers share the new knowledge with other employees of the company (DCORecon2)	0.679	13.210			
invest to provide solutions for our customers (DCOSeiz3)	0.646	11.133			
benefit from training and/or consultancy to improve skills (DCORecon3)	0.628	9.753			
make decisions about business processes quickly (DCOSeiz4)	0.618	10.396			
OWNER-MANAGER SENSING DCs			0.803	0.807	0.629
Our company partners/senior managers …					
communicate with various stakeholders in the market (DCOSens4)	0.833	33.098			
observe target customer to identify their needs (DCOSens3)	0.792	22.199			
have up-to-date information about the general market situation (DCOSens1)	0.777	18.322			
observe competitors to gain knowledge (DCOSens2)	0.768	12.679			
FINANCIAL PERFORMANCE			0.868	0.874	0.659
The overall profitability (Perf9)	0.873	31.784			
Cash flow (Perf12)	0.857	27.920			
Asset returns (profit / total assets)(Perf10)	0.852	22.728			
Sales profitability (Perf11)	0.776	13.336			
Market share (Perf2)	0.685	11.979			
QUALITY PERFORMANCE			0.800	0.807	0.624
The currency of business processes (Perf5)	0.827	24.110			
The currency and environmental compliance of management systems (Perf4)	0.782	19.514			
The quality of products and services (Perf6)	0.780	18.523			
Customer satisfaction (Perf3)	0.771	19.158			

*Items with low factor loadings were excluded from the scale.
**All *t*-values are significant at the 0.001 level.
***All rho_A, which is presented as an alternative to the *α* is above critical value 0.70 (Henseler, Ringle, and Sarstedt 2015).