

Boosting Innovation Performance through Business Analytics Capabilities under Different Levels of Turbulence: The Crucial Role of Market Agility

Hassan Alboqami

Marketing Department, Faculty of Business Administration, University of Tabuk, Tabuk, Saudi Arabia

Email: h.alboqami@ut.edu.sa

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Abstract

Considerable resources were invested by many businesses in developing business analytics capabilities to enhance their performance. Previous research revealed that business analytics capabilities can influence business performance in various methods. Our study seeks to examine the influence of business analytics capabilities on innovation performance through market agility. We also explore these relationships under different turbulent environment. Data were collected from 427 managers in the food industry in Saudi Arabia. Structural equation modelling was used to analyze the collected data. The findings indicated that business analytics capabilities have direct and indirect influence on innovation performance. Market agility partially mediates the link between business analytics capabilities and innovation performance. This relationship is stronger in high turbulent environment. Our study provides meaningful theoretical contributions to business analytics and market agility literature and practical implications for managers in the food sector.

Keywords

Business Analytics Capabilities, Market Agility, Innovation Performance, Turbulent Environment, Dynamic Capability Theory

1. Introduction

Business analytics (BA) is revolutionizing how companies gather and use information (Ashrafi et al., 2019). Their tremendous operational and strategic potential in fields as diverse as finance, insurance, retail, healthcare, and manufactur-

ing, has garnered growing interest from both academics and industry professionals (de Medeiros et al., 2021; Li et al., 2022a).

As defined by Wamba et al. (2015), business analytics (BA) is an all-encompassing method of managing, processing, and analyzing data that helps businesses foresee and swiftly react to shifts in market demand. Decision-making relies on accurate and complete information, and BA systems do just that by collecting, transforming, analyzing, and interpreting data (Santiago Rivera & Shanks, 2015). Both the professional press and academic research show a favorable correlation between BA and the performance of organizations, so much so that BA has been dubbed competitive differentiators (Awan et al., 2022; Naseer et al., 2021).

To fully understand how BA affects innovative performance, more study is needed (Cadden et al., 2022; Mrugalska & Ahmed, 2021). Previous works have demonstrated a favorable impact on performance (Sultana et al., 2022), explored the availability, quality, and usage of information (Barlette & Baillette, 2022), or highlighted the benefits deriving therefrom (Rialti et al., 2019), but they did not examine the causal pathway. Accordingly, while there is strong evidence that business analytics investments can provide value, the mechanism through which BA generated value requires further investigation (Zheng et al., 2022). Recent years have seen a number of initiatives to address this problem; Akter et al. (2016) developed a three-tier approach to examine the influence of big data analytics on company performance while also accounting for the moderating role of strategic alignment.

The theory of dynamical capabilities (DC) is used as a framework throughout this investigation. The ability to integrate, build, and reconfigure internal and external competences to adapt to quickly changing contexts is what “dynamic capabilities theory” (DC theory) is all about (Wang & Ahmed, 2007). Long-term competitive advantage is explained by this idea (Jafari-Sadeghi et al., 2022). It allows businesses to fine-tune their resource allocation and keep their edge in the market (Li et al., 2022b). To effectively adapt to market shifts (Hussain, & Malik, 2022) and manage the ever-increasing volatility of the market as a whole, it appears that BA is essential for identifying and analyzing previously hidden patterns in massive amounts of data, particularly helpful in tumultuous conditions (El Idrissi et al., 2022). As such, it serves as a major concept along the path from business analysis to innovation performance.

Academics have defined DC as a superior organisational skill that helps businesses create value (Ciampi et al., 2022). Agility in the market is often cited as a key dynamic capability that contributes to improved firm success (Kakhki et al., 2023). To be “agile” in today’s business climate means to be able to quickly adapt to changing market conditions by adjusting strategies, products, and processes in response to emerging opportunities (Zheng et al., 2022). Such a skill is essential for making it in today’s fast-paced world (Li et al., 2022b). To this purpose, our study seeks to shed light on the mysterious relationship between BA and the

success of new ideas. Therefore, the purpose of this paper is to investigate how BA skills can influence innovation performance via market agility. As a result, we'll be looking into the following study questions:

RQ1: How does BA influence innovation performance through market agility?

RQ2: How does the turbulent environment effect the relationship between market agility and innovation performance?

Following this outline is how the rest of the paper is organized. Here we will present a summary of the relevant literature. The next part of this paper deals with the theoretical underpinnings and the formation of hypotheses. The process of conducting research will be illustrated. The results and analysis of the data are discussed. Finally, we offer a summary and some suggestions for the future.

2. Literature Review and Hypotheses Development

2.1. Dynamic Capabilities Perspective (DCP)

Scholars have argued that the dynamic capabilities (DC), in response to criticism of the resource-based view (RBV), which often fails to provide explanation of how and in what context the resources can provide competitive advantage to a firm (Barreto, 2010; Khan et al., 2022; Teece et al., 2016). To adapt to new circumstances, a company needs the ability to integrate, build, and reconfigure internal and external skills to address rapidly changing contexts, as stated by Teece et al. (2016). According to Teece et al. (2016), a company's dynamic capabilities include its ability to "detect and shape opportunities," "seize opportunities," and maintain competitiveness by maximizing, merging, safeguarding, and reconfiguring its resources. Simple, experiential, unstable processes that rely on rapidly created new insights to enable combination, transformation, or renewal of resources and competencies into capabilities that are essential for uncertain markets characterize dynamic capabilities within the context of a highly uncertain environment (Liu et al., 2013). Based on these considerations, academics have viewed business analytics as a dynamic competence (Tallon, 2008) that stems from the organization's capacity to reorganize its firm-level resources. Thus, this study examines the link between business analytics capabilities and innovation performance through market agility. It also examines the moderating role of turbulent environment on these relationships (See Figure 1).

2.2. The Link between Business Analytics Capabilities and Innovation Performance

Different BA-related terms are not universally agreed upon (Ashrafi et al., 2019). Examples include the 18 definitions of BA that Roden et al. (2017) found. Many writers confuse big data with analytics. The purpose of business analytics (BA) is to enable evidence-based problem-solving and recognition within the context of business situations by applying "various techniques, technologies, systems, practices, methodologies, and applications that analyses critical business data" (Kristoffersen et al., 2021; Ashrafi et al., 2019).

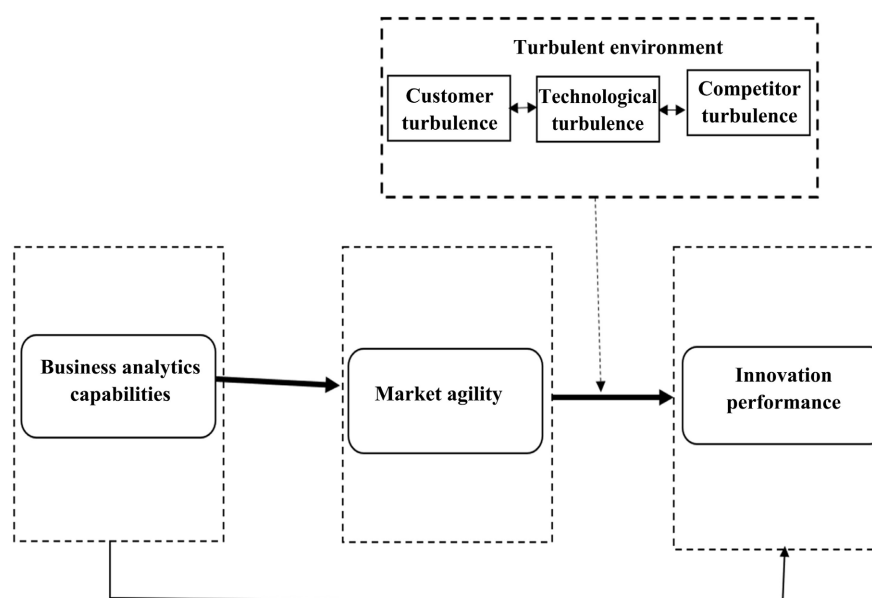


Figure 1. Research model.

For the purposes of this article, we will refer to BA capability as IT-enabled business capabilities, which include information management and analytic competence (Aydiner et al., 2019). In this sense, business analytics (BA) competence is a technology-enabled skill that facilitates the processing of high-velocity data and several types of data insights (Conboy et al., 2020). Data warehouses, OLAP, statistical and quantitative tools, visualization tools, and data mining are only some of the IT-based technologies used by BA (Rialti et al., 2019). Academics and professionals agree, however, that BA's primary purpose is to set the stage for an atmosphere in which businesses can respond effectively to environmental shifts (Nam et al., 2019). Business operations have been simplified as a result (Bertsimas et al., 2014), and organizations have been better able to make use of timely and relevant data thanks to the integration of structured and unstructured information (Rana et al., 2022).

It's important to look into how and why specific IT applications boost business performance (Wang et al., 2019). Yasmin et al. (2020) demonstrated that the ability to effectively utilize information technology is a critical differentiator between high-performing and low-performing businesses. Previous research has suggested that BA capabilities open up opportunities for insightful analysis that can give businesses an edge in the marketplace (Li et al., 2022b; Zameer et al., 2020). The literature on the link between BA and business performance (Chatterjee et al., 2021; Maroufkhani et al., 2019; Mikalef et al., 2020). Data-driven decision making is one way that BA may help businesses improve their innovation performance, as suggested by research by Nam et al. (2019). Our study seeks to investigate the potential of BA to boost innovation performance in the supply chain setting. Therefore, we propose the following hypothesis:

H1: Business analytics capabilities have a positive influence on innovation

performance.

2.3. The Link between Business Analytics and Market Agility

According to research by [Ashrafi et al. \(2019\)](#), IT competence improves supply chain responsiveness. As pointed out by [Awan et al. \(2022\)](#), having an eye on your supply chain is crucial to developing your data analytics skills, and vice versa. Capabilities for big data analytics and supply chain visibility are mutually beneficial ([Hayajneh et al., 2022](#)). Organizations want supply chain awareness because it helps them prepare for and recover from interruptions in the supply chain ([Oesterreich et al., 2022](#)).

[Ciampi et al. \(2022\)](#) demonstrated that supply chain visibility positively affects supply chain agility, supporting [Lee et al. \(2020\)](#) contention that companies who invest in increasing their visibility in the supply chain are also likely to increase their investment in big data analytics. Therefore, we may claim that data technology can aid managers in picking up on subtle shifts in their environments, allowing for more timely adaptation via contingency planning. This leads us to propose the following theory:

H2: Business analytics capabilities have a positive influence on market agility.

2.4. The Influence of Market Agility on Innovation Performance

Different areas of business, such as production ([Asseraf et al., 2019](#)), management ([Zhou et al., 2019](#)), and marketing, have each supplied their own definitions of agility ([Khan, 2020](#)). From these definitions, several shared features emerge. To begin, agility is a skill that may be developed within an organization. Companies that are very agile are better able to respond to market shifts ([Zhou et al., 2019](#)). Second, it is implied by the definitions that agility entails characteristics such as initiative, reactivity, speed, and adaptability ([Kalaiganam et al., 2021](#)). Finally, responsiveness and sensitivity are prerequisites for agility ([Lee et al., 2020](#)). Agility can be both immediate and calculated. It requires not just anticipating and planning for future developments, but also acting swiftly in response to emerging possibilities and challenges ([Kalaiganam et al., 2021](#)). As a fourth point, agility may depend on the context. Companies can exhibit agility in a variety of contexts, including those involving customers and product creation ([Lee et al., 2020](#)).

Agility in marketing is just starting to be talked about. In order to stay ahead of the competition in the market, businesses need to be agile in their marketing strategies ([Zhou et al., 2019](#)). However, this definition falls short when it comes to establishing frameworks for quantifying this concept, which is crucial in the preliminary stages of these debates. According to [Kurniawan et al. \(2020\)](#), a company's marketing efforts can become more agile when it trains its employees to adjust swiftly and efficiently to shifting client requirements, market conditions, and strategic growth requirements. Companies with adaptable marketing strategies anticipate change ([Lee et al., 2020](#)). Their marketing teams work to-

gether to provide for both customers and the business (Zhou et al., 2019). Agile marketing suggests initiative. As a result of this foresight, businesses are better able to meet the needs of, and keep, their clientele. In addition, the ability to anticipate and respond to customer wants is essential for a successful marketing strategy (Li et al., 2019). According to Gomes et al. (2020), an agile marketing strategy should have elements of agility. Agility in both production and marketing is necessary for companies to stay competitive. Agility in marketing encompasses both customer responsiveness and the capacity to “feel” what consumers want. Thus, we propose that:

H3: Market agility has a positive influence on innovation performance.

2.5. The Moderating Role of Turbulent Environment

Adaptability is argued to be more valuable in chaotic settings since it helps bring about change (Zhou et al., 2019). The capacity to adapt to change and gain an edge in a competitive market is what we mean when we talk about agility (Ilmu-deen, 2022). Contradictory scenarios are also presented in the literature. Dynamic capacities are said to become experiential and weakly associated to performance in very unstable contexts because it is impossible to forecast future changes (Li et al., 2021). In line with other research, we find that more marketing-savvy businesses are better able to quickly assimilate new information and put it to use. For better economic results, this is the case.

The primary function of dynamic capabilities is to refresh and reorganize static capabilities. The importance of these factors increases in extremely volatile markets (Overby, 2006). The favorable impacts of dynamic capabilities on ordinary capabilities are larger for enterprises working in highly turbulence-filled environments, as empirically demonstrated by Hajli et al. (2020). That is, participating in frequent sensing and promptly responding to new information is crucial in highly chaotic markets because of the increased opportunities and possibility for improving capabilities. The expenses of deploying marketing capacity may be outweighed by the advantages under several circumstances (Elazhary et al., 2022). Maintaining the alignment of a company’s usual capabilities with the external environment is difficult in a volatile environment unless the company has access to timely, relevant information (Saputra et al., 2021). Market agility plays an important role in enabling firms to connect with the changing environment and reconfigure their innovation capability.

H4: Turbulent environment (i.e., Customer turbulent, technological turbulent, and competitor turbulent) moderates the relationship between market agility and innovation performance.

3. Methodology

3.1. Sample and Data Collection

The food processing sector in Saudi Arabia is the subject of this research. The number of middle- and high-class Saudis has increased dramatically over the

past two decades. Significant difficulties are posed to the Saudi food processing sector by the ever-shifting nature of the market and the unpredictability of its raw material supply. In order to compete with both domestic and international rivals, businesses in this sector must be quick on their feet in terms of marketing and have top-notch innovation resources at their disposal.

The sample was collected from the Saudi Food Processing Industry database and the Saudi Arabia Economic Census database. Researchers translated the survey questionnaire from English to Arabic and then back to English to verify that no changes were made to the wording of the questions. The questionnaire was piloted with 10 marketing managers, and afterward certain questions were rephrased or removed because they didn't work with Saudi terminology. Random samples of 800 businesses were taken from among the business communities of 10 major Saudi cities. We reached out to the top managers at these companies to ask for their participation.

There were a total of 500 participating businesses, and 455 completed surveys were received. 18 incomplete or unreadable surveys were thrown out. The result was a total of 427 (85.5%) samples. The majority of businesses (69%) were established for more than three years and had more than fifty employees (72.4 percent). This demonstrates that they are familiar with difficulties related to adaptability, creativity, and market volatility. The majority of the businesses were located in the western part of Saudi Arabia (57%). The vast majority of those who responded were either upper-level managers (73.5%) or general managers (19.8%) who were already familiar with the problems being looked into.

3.2. Measures

In this study, there were two primary parts of the questionnaire. The first part of the questionnaire consisted of questions designed to quantify each component using either already developed instruments or comparable instruments. It's important to remember that any concept can be evaluated in retrospect. The survey concluded with a series of questions about the respondents' demographic information. Each of the six variables in the study model has its own set of items, all of which use the Likert scale (where 1 is strongly disagree and 5 is strongly agree).

The scale utilized to measure innovation performance was similar to a scale utilized in prior research (e.g., ZareRavasan, 2021) and modified according to our pilot examination. The scale utilized to evaluate business analytics capabilities was adopted from Ashrafi et al. (2019). Market agility was measured using a scale adopted from Sultana et al. (2022). Finally, turbulent environment (i.e., customer turbulence, technological turbulence, and competitor turbulence) were assessed using measurements from prior research (e.g., Elazhary et al., 2022; Zhou et al., 2019).

3.3. Common Method Bias

We consider the probability of common method bias given that data for inde-

pendent and outcome variables came from the same source inside each company. First, because they are in the best position to answer the survey questions accurately, we only included respondents who have the necessary expertise and understanding of the topic (i.e., managers). To keep respondents engaged, we used straightforward language in our survey questionnaire, avoided asking leading questions, and kept the questionnaire to a manageable length. Common method bias in marketing research can be reduced by following these procedures (Podsakoff et al., 2003).

Second, we employed a marker variable (MV) in the style of Lindell and Whitney (2001). An MV is a questionnaire item that, in theory, shouldn't be correlated strongly with any other study variable. We will use the MV connection, if any, with the study's variable to modify the significance of the correlations among the study's constructs (Podsakoff et al., 2012). Coefficients of determination for the MV varied from -0.30 to -0.09 , on average being -0.04 . Not a single one was noteworthy ($p > 0.05$). An MV has methodological value since it may be used as a filtering question to divide the questions about predictors from the questions about outcomes (Podsakoff et al., 2012). Thus, the common method bias is not a concern for our study.

4. Analysis and Results

4.1. Measurement Model

To check the reliability of our measurement model, we used Mplus v7.4 to run a confirmatory factor analysis. Indicators of model fitness ($\chi^2 = 823.608$, $df = 405$; $\chi^2/DF = 2.04$; RMSEA = 0.073; CFI = 0.969; and TLI = 0.931) all point to a good fit between the data and the model. When compared to the threshold of 0.70, the composite reliabilities in our study fall between 0.81 and 0.97 (Bagozzi & Yi 1988). In conclusion, none of the indicator loadings fall below the 0.70 cutoff suggested by Henseler et al. (2016) (See Table 1). As the square root of the average variance extracted (AVE) of each factor was greater than the strongest correlation between components, the analysis also provided significant evidence of discriminant validity (see Table 2). Furthermore, the discriminant validity was validated by the Heterotrait-Monotrait ratios analysis (HTMT; Henseler et al., 2016), as all of the HTMT ratios of the paired constructs were below the 0.85 threshold.

4.2. Structural Model Evaluation

The fit of the data to the conceptual framework was acceptable, $\chi^2 = 847.280$, $df = 372$, $\chi^2/df = 2.276$, RMSEA = 0.076; CFI = 0.972; and TLI = 0.947). The analysis revealed that business analytics capabilities is a significant influence on innovation performance ($\beta = 0.53$, $P < 0.001$) and market agility ($\beta = 0.39$, $P < 0.001$). It also indicated that market agility has a significant influence on innovation performance ($\beta = 0.51$, $P < 0.001$). Therefore, H1, H2, and H3 were supported.

Table 1. Measurement statistics of construct scales.

Construct/Indicators	SFL	Mean	Standard deviation	Cronbach's α	CR	AVE	t-values	Skewness	Kurtosis
Business analytics capabilities (BAC)									
BAC1	0.966	2.309	1.290	0.941	0.960	0.597	18.672	−1.23	1.02
BAC2	0.927	3.102	1.329				23.203	−1.45	1.21
BAC3	0.940	3.210	1.347				21.209	−1.26	1.32
BAC4	0.918	2.880	1.190				22.394	−1.20	1.18
BAC5	0.899	2.129	1.054				13.209	−1.17	1.02
BAC6	0.935	2.037	1.236				24.386	−1.47	1.27
BAC7	0.971	3.126	1.088				32.039	−1.19	1.18
BAC8	0.908	2.197	1.307				37.295	−1.22	1.06
Market agility (AGT)									
AGT1	0.942	2.322	1.448	0.934	0.952	0.608	14.302	−1.21	1.03
AGT2	0.970	2.360	1.023				19.267	−1.36	1.46
AGT3	0.918	2.873	1.378				23.230	−1.50	1.09
AGT4	0.946	3.019	1.239				10.739	−1.37	1.35
AGT5	0.966	2.374	1.083				21.208	−1.02	1.07
Innovation performance (PEF)									
PEF1	0.949	2.380	1.389	0.927	0.949	0.636	11.203	−1.43	1.49
PEF2	0.920	2.478	1.209				22.309	−1.40	1.33
PEF3	0.947	2.920	1.475				19.438	−1.27	1.28
PEF4	0.922	3.105	1.419				24.301	−1.46	1.21
Customer turbulence (CTU)									
CTU1	0.938	2.390	1.038	0.895	0.920	0.690	15.404	−1.34	1.23
CTU2	0.940	2.356	1.314				19.216	−1.20	1.43
CTU3	0.961	2.901	1.166				21.230	−1.36	1.29
	0.936	2.547	1.132				13.209	−1.29	1.08
Technological turbulence (TTU)									
TTU1	0.945	2.345	1.236	0.910	0.932	0.687	18.329	−1.04	1.25
TTU2	0.923	2.147	1.375				11.269	−1.18	1.00
TTU3	0.919	2.408	1.291				26.250	−1.27	1.25
	0.926	2.456	1.380				14.267	−1.05	1.39
Competitor turbulence (PTU)									
PTU1	0.940	2.348	1.236	0.940	0.962	0.603	24.304	−1.35	1.65
PTU2	0.954	2.349	1.458				16.120	−1.76	1.02
PTU3	0.949	2.450	1.044				12.109	−1.40	1.027

Notes: SFL: standardized factor loading; SFL is significant at the 0.001 level; AVE = Average variance extracted; CR = Composite reliability.

Table 2. Discriminant validity of the correlations between constructs.

Construct	Correlations and square roots of AVE					
	BAC	AGT	PEF	CTU	TTU	PTU
BAC	0.773a					
AGT	0.390b	0.779				
PEF	0.420	0.367	0.797			

Continued

CTU	0.327	0.343	0.349	0.830		
TTU	0.410	0.298	0.408	0.365	0.823	
PTU	0.327	0.378	0.291	0.299	0.410	0.776

Note: a: Composite reliability is along the diagonal, b: Correlation.

We used the method suggested by Baron and Kenny's (1986) to assess the mediating role of market agility on the link between business analytics capabilities and innovation performance. Our analysis indicated that market agility partially mediates the relationship between business analytics capabilities and innovation performance.

We employed the method suggested by Hayes (2017) to assess the moderating role of turbulent environment (i.e., customer turbulence, technological turbulence, and competitor turbulence) on the link between market agility and innovation performance. The analysis indicated that the interaction between market agility, customer turbulence on innovation performance was significant ($t = 4.670$, $p = 0.001$). It also indicated that the interaction between market agility, technological turbulence, and innovation performance was significant ($t = 8.417$, $p = 0.001$). Moreover, the analysis revealed that the interaction between market agility, competitor turbulence, and innovation performance was significant ($t = 5.031$, $p = 0.001$). Thus, H4 was supported.

5. Discussion and Conclusion

5.1. Key Findings

This investigation used the dynamic capabilities viewpoint to look at how business analytics skills, market responsiveness, and innovative output are all linked. We also looked into how market volatility influences the connection between marketing nimbleness and innovation output. The first four hypotheses were correct. To be more precise, we discovered that business analytics skills had an impact on innovation success in both direct and indirect ways.

Under conditions of extreme market volatility, the correlation between market nimbleness and the success of new products and services was very robust. As a result, the positive effect of marketing agility on innovation performance is amplified in conditions of high market volatility. This result is in line with prior research (e.g., Elazhary et al., 2022; Li et al., 2019; Sultana et al., 2022), which holds that in highly chaotic markets, dynamic capacities become experienced and are substantially associated to performance.

Overall, these findings point to a moderated mediation model (Asseraf et al., 2019; Zhou et al., 2019) in which business analytics skills is tangentially associated (via market agility) to innovation success, with the strength of this tangential relationship being conditional on market volatility. Market agility and innovation performance are expected to have strong correlations when market

volatility is high. This is in line with the claim that the importance of dynamic capabilities increases in a dynamic environment (Far et al., 2017; Kalaighnam et al., 2021; Khan, 2020), and that these capabilities influence the performance of businesses via their impact on ordinary capabilities (Liu et al., 2023; Nemkova, 2017).

5.2. Theoretical Implications

In the following respects, this research adds to the dynamic capabilities approach and the marketing agility literature. To begin, this examination expands prior work on the performance implications of dynamic capabilities. There hasn't been a lot of empirical study on dynamic capacities to date (Rialti et al., 2019; Zheng et al., 2022). In this investigation, we empirically examine the connections between dynamic capabilities, regular capabilities, and innovation output.

When attempting to close the gap between business analytics skills and innovation performance, the present study is one of the first to focus on the role of market agility in doing so. We use survey data from Saudi Arabian companies to provide empirical support for the relationship between BA capabilities, market agility, and innovation performance in uncertain environments, and we emphasize the critical importance of responding to the market environment in high turbulent environments.

The question of how business analysis (BA) contributes to market agility and, ultimately, innovation performance is one that this research helps to answer. We found that BA capabilities impact innovation performance both immediately and indirectly via market nimbleness. Further, this research contributes to theoretical understanding by analyzing and quantifying the moderating effect of environmental turbulence on the connection between market agility and innovation output. According to our findings, only in very volatile environments does market agility have a beneficial effect on innovation success. It manifests itself when businesses face a number of challenges at once, whether in the market or the technology realm, and require a rapid reaction. Our findings indicate that organizations better able to adapt to shifting market conditions also perform better in terms of innovation. This would set businesses apart from one another in environments with lots of chaos.

Finally, this research was conducted in a developing economy (Saudi Arabia) and in the food processing sector, allowing for extrapolation of findings to similar settings. The reliability of the measurements was comparable to that of other investigations, and the results were consistent with preexisting theoretical frameworks. Due to changing consumer expectations for food safety and significant socio-demographic shifts in Saudi Arabia, the food processing industry presents a unique dynamic environment, which we investigate. In order to stay competitive, businesses need to be able to quickly and effectively implement new ideas. Previous research on innovation and dynamic capabilities mostly focused on areas like the high-tech and R&D-intensive industries, thus the study of the

food processing industry is also significant (Akter et al., 2016; Jafari-Sadeghi et al., 2022).

5.3. Managerial Implications

Several managerial implications can be drawn from this study. For starters, the research shows that dynamic capabilities may be recognized and evaluated, along with the impacts they have on more standard capabilities and innovative output. Considering that dynamic capabilities are future-oriented, it might be difficult for businesses to analyse them and develop them until they are desperately needed. Second, there is a high degree of complexity in the link between dynamic capacities and innovative performance. In other words, it might be either direct or indirect. Due to the indirect nature of the relationship, it is imperative that businesses invest in developing dynamic capabilities in order to renew their existing ordinary capabilities and boost their innovation performance.

Our research indicates that ordinary capabilities can be improved, renewed, and refreshed, and kept fit for purpose by developing and deploying dynamic capabilities, especially under low to moderate market turmoil. Ordinary capabilities (such market agility) may become less commensurate with the issues facing the organization and may even become obsolete in highly volatile circumstances; hence it is still necessary to employ dynamic capabilities in such settings (Kakhki et al., 2023; Li et al., 2022b).

Empirical evidence for revealing how and in which way BA capabilities play a role in enhancing innovation performance is insufficient, despite its importance (Kristoffersen et al., 2021). Understanding how better BA capabilities within a firm can increase market agility, which in turn can increase innovation performance, is a key contribution of our research. Our research demonstrates a tight connection between BA and responsiveness in the marketplace. Similar arguments were made by Xu et al. (2016), who noted that BA not only gives businesses access to reliable data, but also gives them the chance to adapt their strategies to suit the circumstances. Managers may better comprehend the company's current situation and, more crucially, spot potential dangers and exploits with the use of accurate data gleaned through BA. These results are useful because they show how crucial BA capabilities are to achieving agility; in other words, information that has been BA-enabled is of higher quality and might aid managers more directly in making decisions.

Dynamic capabilities are most effective when used more frequently, more promptly, and ahead of the competition. Since dynamic capabilities are patterned activities that are taught, they need to be incorporated in organizational processes and may take some time to develop. Some of the ramifications of adopting an agile marketing strategy include the need for buy-in from upper management, a culture that encourages quick responses to new information, a willingness to adapt organizational structures on the fly, the delegation of decision-making authority to the front lines, and the swift assignment of personnel

and resources to the most pressing tasks.

6. Limitations and Future Research Directions

Several caveats of this study point to potential future research avenues. Since researchers cannot demonstrate cause and effect links using cross-sectional data, the study is not as rigorous. This gap might be filled by the results of a longitudinal study. However, the focus of this study is on a single indicator of company performance (i.e., innovation performance). Other marketing performance metrics, such as sales growth, product launches, customer retention, etc., should be explored.

We hypothesize that other potential mediators, such as market orientation, learning orientation, and entrepreneurial orientation, might be studied to see whether the benefits of market agility go beyond innovation performance. The current investigation focuses on a single moderator. Other factors, such as company size and industry, may be considered as moderators in future research. This research's measurement of agility is applicable to the context of the manufacturing sector. However, this metric can be used to the service sector with some tweaks in future studies. This would considerably improve our ability to construct theories and comprehend the limits of the relationships under study.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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