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Influence Business Analytics Capabilities on Innovative Performance: The Mediating Role of Dynamic Capabilities in IT Projects

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ABSTRACT

To investigate the Business Analytics Capabilities on Innovative Performance: Mediating role of Dynamics Capabilities. The aim is to explore the significant relationship between business analytical capabilities on innovative performance of the Dynamics Capabilities. Business analytics capabilities positively affect Dynamics Capabilities (firm responsiveness), which in turn positively impacts innovative performance. A structured questionnaire employing the key informant approach was used to collect data as part of the survey method. A structured questionnaire employed the key informant approach to gather data as part of the survey method. We were gathering data on employees in IT project managers and management across all information and technology-related IT projects to create a sample frame for the current study. The respondents in the sample frame are IT project managers. We used a purposive sampling technique to select a sample of 230 respondents from the IT Projects in Pakistan and the UAE. We were using Google Forms for data collection and self-administration. We were utilizing SPSS and PLS-SMART software for data analysis to transform the collected data into meaningful insights. We utilized the measurements and scales of business analytical capabilities, as well as innovative performance and dynamics capabilities. Business Analytics Capabilities do not drive innovation alone, but when combined with adaptive organizational capabilities, they significantly enhance a firm's innovative performance. This mediation framework aligns with dynamic capabilities theory, offering both theoretical advancements and practical guidance for data-driven innovation in turbulent environments. Business Analytics Capabilities and Innovative Performance: Mediating Effect of Dynamic Capabilities confirmed a positive effect. The practical implication means that managers invest in advanced analytics infrastructure not just for efficiency, but as a driver of innovation readiness.

Keywords: *Business Analytic Capabilities, Innovative Performance, Dynamics Capabilities, IT Projects.*

INTRODUCTION

Over the past decade, a significant increase in data growth has occurred due to the rise of social media, mobile devices, and analytics (Sebastian et al., 2017). Companies are trying to outdo each other by making smart choices in both strategy and technology. The Information Technology (IT) industry in Pakistan has emerged as one of the fastest-growing sectors, driven by increasing digitalization, a young and tech-savvy population, and the rapid expansion of mobile and broadband connectivity. Over the past decade, Pakistan IT exports have shown substantial growth, supported by government initiatives such as tax incentives, Special Technology Zones (STZs), and the Digital Pakistan Vision. The industry plays a critical role in software development, business process outsourcing (BPO), e-commerce, fintech, and emerging technologies like artificial intelligence and cloud computing. Despite its significant progress, the sector remains underutilized compared to regional competitors, indicating a large potential for further expansion and global competitiveness (Ali et al., 2024; Ali et al., 2025; Uren et al., 2023).

Business analytics plays a significant role in this, enabling telecom companies to extract valuable insights from vast amounts of complex data and generate new and innovative ideas (Shaik, 2023). Dealing with constant changes and a massive amount of information is challenging in today's workplaces. Business analytics systems offer organizational benefits by enhancing firm development, improving business performance, and fostering a competitive advantage (Liu et al., 2023). The components of a business analytics system encompass technologies, processes, and people involved in analyzing, gathering, and transforming data to sustain organizational decision-making (Jordan and Ellen, 2009). The technological aspects of BA include data reporting, warehousing, visualization, online analytical processing, predictive modeling, forecasting, and statistical analysis (Watson, 2010). According to Al-Debei (2023), data science is categorized as a closely related field using eight factors: types of analytics, data sources, analytics process, methods & techniques, business value, skill set, scope of analytics, and tools & technological platforms. Furthermore, business analytics enhances operational efficiency by identifying areas for improvement and optimization within processes (Marr, 2015). Business analytics, which utilizes topic modeling, is invaluable for strategic management, enabling organizations to decipher internal and external complexities effectively. Business analytics capabilities play a significant role in helping telecom companies remain resilient in the face of unexpected challenges (Nasereddin, 2023).

Business Analytics Capabilities: Organizations seeking to navigate change, foster innovation, and maintain a competitive edge in the evolving business landscape consider firm reconfiguration as a strategic investment. The responsiveness, resilience, and configuration of business analytics capabilities influence how companies generate new and creative ideas for innovation. We posit that business analytics capabilities, as valuable and unique internal resources, enhance an industry's ability to innovate. Innovative performance is essential for modern organizations as it serves as a cornerstone for sustained competitiveness and growth. For instance, (Brynjolfsson et al., 2011) suggest that Business Analytics can provide an effective environment through data-driven decision-making, enabling firms to achieve enhanced performance. Evidence suggests a connection between organizational performance and Business Analytics (Huang et al., 2014), as well as operational performance (Chae et al., 2014). In today's rapidly evolving business landscape, organizations must continually innovate to stay ahead of the curve. A proposed conceptual model explores the potential role of BA in enhancing overall performance within the delivery chain context. One cannot overstate the value of innovative performance in modern organizations (Damanpour, 2014; Sangari and Razmi, 2015).

Business analytics may be defined as a “holistic method to manage and examine information, not only to build actionable insights but also to enable companies to anticipate changes primarily based on market necessities and respond to them quickly” (Işık et al., 2013). Experts consider it a crucial element that shapes innovative performance, and recent studies have explored this relationship. This reinforces the

importance of utilizing effective BA practices to improve organizational performance. According to Seddon et al. (2017), business analytics is a valuable resource for making better decisions and discovering new opportunities. Research by (Mikalef et al., 2020) adds that when a company uses business analytics along with good practices for managing information, it leads to better firm performance. According to (Alaskar, 2023) there has been no research on the impact of innovative capabilities on firm performance. According to (Ali et al., 2025) suggested, there may be other technological capabilities and ways that can lead to higher organizational performance." Adding to this, a recent study demonstrated the relevance of business analytics for innovative performance and recommended further exploration of the influence of BA capabilities. As acknowledged study didn't cover all dimensions of business analytics capabilities. Therefore, the current study will investigate the correlation between business analytics capabilities and innovative performance (Ali et al., 2024).

According to (Alaskar, 2023; Ali et al., 2024) examined the relationship between big data analytics capability and innovative performance. Furthermore, big data enhances organizational innovative performance by mediating strategic flexibility and strategic innovation. According to (Khan and Ali 2022), they examined how business analytics affects organizational agility and performance. Similarly, previous research has suggested examining the impact of business analytics on innovative performance. However, earlier researchers may not have fully explored the concept of how business analytics capabilities influence innovative performance. According to (Ahmad et al., 2023), the importance of evaluating the continuity of information systems in Pakistan's telecom industry is emphasized, highlighting the need for users' confirmation of expectations within the context of Business Analytics tools and analytics capabilities. Given the previously mentioned research gap, this study aims to investigate the mediating role of firm capabilities, such as resilience, reconfiguration, and responsiveness, in the relationship between business analytics capability and innovative performance (Alaskar et al., 2023).

Despite the widespread adoption of Business Analytics capabilities, particularly in the IT industry, the pressing research problem revolves around understanding the extent to which Business Analytics capabilities influence innovative performance and subsequent business success. This study aims to unravel the intricate connections between these critical constructs, shedding light on how business analytic capabilities processes within the telecom industry drive innovative performance initiatives. This study aims to provide insights that enhance our understanding of the influence of business analytics capabilities on innovative performance. Furthermore, this study endeavors to uncover the mediating effect of firm resilience, reconfiguration, and responsiveness capabilities within the context of the Telecom industry, investigating how it mediates the relationship between Business analytics capabilities and Innovative performance (Khan et al., 2023).

Rapid advancements in Business analytics capability necessitate the IT industry to continually update its skill sets and technologies. However, a prevalent issue is the skill gap that emerges due to the speed at which technologies evolve, making it challenging for the IT industry to keep up and adapt effectively. In an era of technological advancements and increased interconnections, a firm's capabilities are exposed to various risks, including cybersecurity threats and supply chain vulnerabilities. As highlighted by the study, this aligns with the need for firms to proactively address and mitigate risks to safeguard assets and maintain operational stability. Business analytics talents serve as the foundation for competitive advantage, with company responsiveness, organizational resilience, and organizational reconfiguration acting as vital mediators to translate these abilities into innovative overall performance within organizations. The Business analytics capability market can be highly volatile with unpredictable demand patterns. The IT industry often struggles to forecast and respond to market demands accurately, which impacts a firm's innovative efforts. The telecom industry faces intense competition, pushing it to constantly innovate to stay ahead. Balancing the need for technological innovation with operational

stability, mitigating security risks, and meeting client expectations poses a significant challenge. Addressing these problems within the research problem statement will enable a focused investigation into the interplay between Business analytic capability impacts on innovative performance, the success and sustainability of innovation-based performance, specifically the IT projects in the UAE and Pakistan.

Research Questions

- Does business analytic capability significantly relate to innovative performance?
- Does Business analytics capability significantly relate to Firms' capabilities, firm Resilience, Reconfiguration, and Responsiveness capabilities?
- Do firms' capabilities, firm resilience, reconfiguration, and responsiveness capabilities significantly relate to innovative Performance?
- Do firms' capability, firm resilience, reconfiguration, and responsiveness capabilities mediate the relationship between Business analytic capability and innovative performance?

LITERATURE REVIEW

Recent research has examined the relationship between business analytics capabilities and innovative performance. As the author (Hayajneh et al., 2022) has studied this relationship, concluding that business analytics capabilities influence modern overall performance. Business Analytics: The resource-based view principle posits that capabilities, as valuable and precise internal resources, enhance an organization's capacity to innovate. A theory known as the resource-based view aligns with the idea that true business analytics capabilities enable an organization to be more innovative. This principle says that having precise and valuable assets within an organization makes it more competitive. An observer, as noted by Kianto et al. (2017), highlights the importance of HR practices that focus on knowledge within an industry. This aligns well with the RBV, as it emphasizes the cost of unique assets within an employer. In simpler terms, progressiveness refers to the ability to develop new and valuable things. Business analytics, which utilizes technology to analyze critical data, serves this purpose. As authors recognize the tools used in enterprise analytics as treasured sources for making informed decisions and identifying new opportunities (Seddon et al., 2017;Ali et al., 2024).

The connection between Business Analytics capabilities and Firm Reconfiguration Capability finds support inside the Resource-Based View theory. According to the resource-based view concept, a firm gains an edge by possessing specific and valuable resources. In the domain of business analytics capabilities, which entail the intelligent use of statistics and technology, they become essential tools for facilitating an organization's flexibility and transformative initiatives. The resource-based view principle emphasizes collaborative efforts for organizational exchange and variation (Eisenhardt et al., 2000). Business analytics capabilities align with this angle through facilitating powerful teamwork in leveraging facts and technology. Knowledge plays a significant role in the resource-based view concept, highlighting the significance of the insightful utility of statistics (Hargadon, 1998). Business analytics capabilities contribute to this factor by facilitating groups' access and utilization of various knowledge domains. The resource-based view concept introduces standards that involve adapting operational strategies, and business analytics capabilities reinforce this concept by enabling companies to modify their analytical processes in response to evolving technology (Lavie, 2006; Danneels, 2002). On the ground, the resource-based view idea provides a framework for understanding how business analytics capabilities, with their flexibility and expertise-driven technique, enhance a company's capacity to navigate change and preserve competitiveness (Eisenhardt et al., 2000). Business analytics capabilities facilitate rapid decision-making, which positively impacts a company's responsiveness, contributing to its dynamic capabilities and, consequently, improving innovation. This aligns with the reality that responsive companies are greater adaptable to changing marketplace situations and better equipped to fulfill evolving consumer wishes (Sambamurthy et al., 2003).

Business analytics capabilities, through real-time data insights, can help a company prepare for unexpected challenges and continue innovating. This is called resilience capability. This aligns with the dynamic capability's perspective, which emphasizes the collective efforts required to reconfigure organizational routines, resources, and technologies for continuous innovation (Eisenhardt and Martin, 2000). According to the author (Lavies, 2006), exploration of organizational capability adds depth by outlining mechanisms such as capability substitution, evolution, and transformation, which firms employ to adapt to technological changes. Additionally, (Danneels et al., 2002) further emphasizes the combination. The exploration of new competencies to meet emerging customer needs showcases the intricate process of de-linking and re-linking activities in technology leverage. Therefore, when a company utilizes business analytics capabilities to maintain flexibility and adapt quickly, it aligns with the concept of dynamic capabilities and the necessity of combining diverse types of knowledge to foster innovation. In summary, this suggests that business analytics capabilities can significantly enhance a company's capacity to manage unforeseen challenges and maintain its innovative culture. innovative spirit alive (Lavie's, 2006).

The ability of an organization to adapt and change, known as firm reconfiguration capability, plays a vital role in driving innovative performance. This concept aligns with the Resource-Based View concept, emphasizing how firms can leverage and reconfigure their competencies to foster innovation (Lavie, 2006). The description of functionality reconfiguration as the process by which businesses alter their routines and practices to adapt to changes in their environment, and the study of functionality reconfiguration and technology trade, identifies two crucial components of this capability evolution. These components focus on enhancing current practices and substituting functions related to changes in the fundamental concepts of organizational abilities. Moreover, Shan et al. (2019) and Teece (1988) emphasize the cumulative nature of organizational learning, adding that organizational workouts, experience, and tacit understanding embed innovation competencies. It indicates that by actively adapting how an employer operates, it can successfully pressure innovation and make a contribution to stepped-forward overall performance. The concept of responsiveness, emphasizing a firm's agility in addressing marketplace dynamics, involves constant tracking of modifications in patron conduct and aggressive landscapes (Jaworski and Kohli, 1993). Different authors described (Fisher, 1997; Lee, 2002) introduce uncertainty into the corporation through a responsive approach, which increases the need for effective fact processing. Even with the supply of information technology overcoming organizational and behavioral obstacles is crucial for knowledge and making use of obtained information, as mentioned by (Dobrzykowski and Tarafdar, 2015). Previous literature established a connection between innovation and a responsive method, which necessitates both the acquisition and awareness of facts (Gunasekaran et al., 2008). Research by (Zhang et al., 2022) has demonstrated that the implementation of virtual transformation significantly boosts economic benefits and increases corporate R&D investment. The brief response to market changes facilitated by using a corporation's responsiveness functionality is anticipated to positively influence its innovative overall performance, helping with the dynamic capabilities emphasized in resource-based view (Zhang et al., 2022). Furthermore, (van et al., 2015) have linked resilience to an organization's ability to recover from disruptions and resolve immediate issues. However, a proactive attitude is crucial for growing in the face of hardship, involving the development of new capabilities and an expanded ability to create innovative opportunities before disruptive events (Somers, 2009). Therefore, an 'active' aspect of resilience is essential in the context of product innovation (Lengnick-Hall et al., 2011).

The resource-based view theory (Eisenhardt & Martin, 2000) expects business analytics capabilities to boost a company's ability to innovate by affecting how it adapts its resources, a concept known as reconfiguration capability. In simpler terms, the idea is that if a business enterprise is gifted in the use of fact analytics (business analytics capabilities), it will be more effective in converting and adapting its assets, thereby improving its innovation. Business analytics capabilities have a positive impact on a

company's reconfiguration capability, which in turn positively influences its innovative performance. Further, the way business analytics capabilities impact how a company changes and adapts its assets is crucial in understanding the way it influences innovation. We use the term "mediating variable" to explain this mechanism, which transfers the impact of business analytics capabilities to the organization's innovative performance through its reconfiguration capability. In strategic management terms, this builds on the concept that a business enterprise with progressive competencies and assets able to manage changes within the world can have a competitive advantage (Teece et al., 1997). The process of reconfiguring capabilities involves a company's familiarization with and response to opportunities and threats through the updating and modification of its existing capabilities (Winter, 2003). Reconfiguring capabilities contributes in various ways. Firstly, it helps a company identify and respond to opportunities by developing new processes, products, and services (Chimielewski, 2007). Secondly, it improves the speed, effectiveness, and efficiency with which a company operates and responds to changes in its environment, positively influencing firm performance through taking advantage of attractive revenue opportunities and regulating its operational costs (Tallon, 2008). Thirdly, reconfiguring capabilities can build upon the contribution of ordinary capabilities by extending already available resource configuration in ways that result in a completely new set of decision alternatives (Eisenhardt and Martin, 2000). This all aligns with the RBV theory, emphasizing the collaborative efforts needed for organizational change and adaptation. Business analytics capabilities are expected to influence innovative performance through the mediation of the firm's responsiveness capabilities, indicating that a quick response to market changes contributes to improved innovation. Imagine business analytics capabilities as a tool that helps a company make informed and quick decisions based on data. This responsiveness, or the ability to adapt swiftly, is crucial for staying on top of what consumers want and what the competition is doing. Linking this to the resource-based view RBV theory, we should consider marketing capabilities as a crucial factor. RBV theory tells us that having robust business analytics talents is essential for an employer to sustain and gain a competitive advantage, particularly in worldwide markets where variations among firms are greater pronounced. Based on the RBV concept, responsiveness becomes a crucial factor in achieving and maintaining a competitive edge over time, primarily to enhance innovative performance. It's akin to having a nimble and well-informed team that can swiftly adjust strategies in response to market changes, thereby fostering increased innovation (Zou et al., 2003).

The hypothesis demonstrates that business analytics capabilities can significantly influence an organization's innovation potential by enhancing its resilience capability. In other words, having strong skills in enterprise analytics is expected to make a contribution to a resilient organizational shape, which, in turn, enhances progressive performance. The resource-based view idea underscores the strategic importance of an organization's resources and talents. Think of business analytics capabilities as a treasured aid in the corporation. The resource-based view principle demonstrates that corporations can gain a competitive advantage by utilizing valuable resources that competitors may find difficult to replicate. In the context of this hypothesis, the precise and precious resource is business analytics capabilities. Instead of merely processing information, these abilities serve as a dynamic and strategic tool for making decisions. Resilience, as highlighted in the hypothesis, becomes a critical capability that guarantees the corporation can navigate disruptions and challenges successfully. Recent studies, as referenced in the speculation, support the idea that business analytics capabilities enhance company resilience, contributing to overall performance. The RBV principle lens emphasizes that the strategic application of business analytics capabilities becomes a distinctive and valuable aspect of a corporation's core competencies, thereby aligning with the central principles of the resource-based view (Dubey et al., 2019; Bahrami and Shokouhyar, 2021).

METHODOLOGY

Data was gathered by a structured questionnaire using the key informant approach as part of a survey method. Data was be gathered by a structured questionnaire using the key informant approach as part of a survey method (Myers et al., 2013). To meet the research's goal, gather data from managers in the IT Projects in the UAE and Pakistan who deal with information and technology-related components. Due to intense competition, business analytics capability is more dynamic and innovative than others, and is growing continuously. These business capabilities are regularly altering their organizational structures, operating systems, and business practices in order to stay competitive, survive in the long term, and increase profitability. Therefore, it is believed that these capabilities would make the perfect basis for research on innovative performance and data collection on IT project managers and management in the telecom industry from all information and technology-related telecommunication sectors to create the sample frame for the current study (Watson, 2015). In this study used purposive sampling techniques (Etikan et al., 2016). The respondents in the sample frame are IT Project managers. We selected these organizations based on factors like time constraints, adequate population representation, and the level of cooperation. According to the rule of thumb (James Chen, 2021), a sample of 330 respondents will be chosen from the telecom sector using a purposive sampling technique (Black & Champion, 1976). We conducted the survey using a self-administered questionnaire, gathering information from the IT industry. We used Google Forms for data collection and self-administration. We used data analysis for SPSS and PLS-SMART software to analyze the collected data and turn it into meaningful insights (Hair et al., 2021).

Measurements and Scales

This study presents a detailed framework for assessing business analytics capabilities, focusing on three dimensions: information technology, talent, and governance. Their model applies to various industries and can be tailored for the telecom industry (Cosic, 2015). To investigate Business analytics capabilities, the study adapted (Akter et al., 2016) big data analytics capabilities and their impact on firm performance, covering critical areas such as analytical skills, data quality, technology infrastructure, and strategic alignment, relevant to telecom industry applications and business analytics capability, 12 items. To investigate Firms' resilience capabilities through strategic HR practices, focusing on organizational adaptability, flexibility, and resourcefulness, which can be applied to telecom. It provides a foundational resilience framework that can be used to assess how prepared a telecom firm is to handle disruptions. The study adapted 5 item scale developed by (Lengnick-Hall et al., 2011). To investigate Firm reconfiguration capabilities, the study adapted four-item scale developed by (Teece et al., 1997). To investigate Firm responsiveness capabilities, the study adapted 4 item scale developed by (Homburg et al., 2007; Hult et al., 2005). mTo investigate innovative performance, the study adopted 5-item scale developed by (Alpkan et al., 2010; Kaya al., 2020) study presents scales for measuring both product and process innovation, as well as overall organizational innovativeness.

Data Analysis procedure

We initially used the following techniques and methods to analyze the data in this research: we used SPSS 21 for data coding. Second, frequencies are applied to deal with errors and missing data. We were performing additional reliability analyses, descriptive statistics, correlations, and regression analyses to correct the results. We'll perform a confirmatory factor analysis using AMOS. Hayes will test the moderation and mediation hypotheses through the MACRO PROCESS (Taylor & Cihon, 2004). 3.7.2 Data Analysis Techniques

RESULTS AND ANALYSIS

According to the author (Ammeter, 2019), suggested methods for assessing internal consistency include using Cronbach's alpha and measures of convergent validity such as composite reliability and average variance extracted. Discriminant validity can also be evaluated using these methods. Additionally, the evaluation of item loading is presented in Appendix A. Cronbach's alpha was used to assess the internal consistency and reliability of the measurement items, and all variables achieved values greater than 0.70. Convergent validity is evaluated by measuring composite reliability and average variance extraction. The composite reliability (CR) is a measure that spans from 0 to 1, where values above 0.70 are considered satisfactory (Graciola et al., 2020). Given that all constructs' CR values fall within the range of 0.81 to 0.86, they can be deemed acceptable. The minimum threshold for the average variance extracted should exceed 0.5. The observed AVE values varied from 0.59 to 0.80, indicating that they fall within an acceptable range. CR and AVE collectively confirmed the convergent validity of the measures. Table 4.1 summarizes the measurement model assessment based on Cronbach alpha, composite reliability (CR), and average variance extracted (AVE).

Table 1: Reliability and convergent validity

Variable	Cronbach Alpha	rho_A	CR	AVE
Business Analytics Capabilities	0.82	0.81	0.79	0.79
Firm Resilience	0.85	0.82	0.88	0.79
Reconfiguration	0.81	0.83	0.90	0.85
Responsiveness Capabilities	0.82	0.85	0.91	0.87
Innovative Performance	0.77	0.92	0.82	0.79

The A concept's "discriminant validity" is defined as its level of empirical distinction from other constructs in the structural model, as stated by (Hair et al., 2019). To ensure that all structural model constructs have been reflectively examined, it is essential to compare the squared inter-construct correlation of each construct with its average variance extracted (AVE), as suggested by (Fornell and Larcker, 1981). Table 2 also displays the relationships and square-rooted AVEs for each construct. Good discriminant validity is indicated by the fact that all square-rooted AVEs were found at large distances from the diagonal correlation values.

Table 2: Discriminant validity

Variable	BAC	FR	R	RC	IP
Business Analytics Capabilities	0.80	--	--	--	--
Firm Resilience	0.05	0.82	--	--	--
Reconfiguration	0.44	0.07	0.80	--	--
Responsiveness Capabilities	0.27	0.04	0.57	0.77	--
Innovative Performance	0.44	0.07	0.70	0.81	0.82

Note. BAC=Business Analytics Capabilities, FR = Firm Resilience, R=Reconfiguration, RC= Responsiveness Capabilities, IP= Innovative Performance

The heterotrait-monotrait (HTMT) ratio of correlations was proposed by Hair et al. (2019) as an additional method for evaluating discriminant validity, supplementing the AVE-based approach previously mentioned. The computation of bootstrapping confidence intervals with resamples is included in this requirement. According to Hair Jr. et al. (2021), the HTMT is an approach to discriminant validity that focuses more on competencies related to Business Analytics Capabilities. However, a slightly lower

threshold value of 0.80 is acceptable for conceptually distant structures (Henseler et al., 2016). The threshold value for conceptually similar constructs is 0.81, whereas the threshold value for conceptually distant constructs is 0.80. However, Hessler et al. (2015) believed that any figure lower than 1.00 is acceptable. Either way, all the observed HTMT values are lower than the provided limitations, indicating that discriminant validity is sufficient. The values in Table 3 show the test for discriminant validity based on HTMT ratios.

Correlation Analysis

Table 3: Correlation Analysis

Variables	BAC	FR	R	RC	IP
Business Analytics Capabilities	1	0.420**	0.270**	0.209**	0.426**
Firm Resilience	--	1	0.443**	0.275**	0.620**
Reconfiguration	--	--	1	0.393**	0.295**
Responsiveness Capabilities	--	--	--	1	0.477**
Innovative Performance	--	--	--	--	1

Note. BAC=Business Analytics Capabilities, FR = Firm Resilience, R=Reconfiguration, RC= Responsiveness Capabilities, IP= Innovative Performance

In Table 3 Result Shown results show that Business Analytics Capabilities, Responsiveness Capabilities, and Innovative Performance, with all variables to a strong relationship and values are 0.426**, 0.620**, 0.477**, Similarly, discriminant validity is established when the shared variance of one construct is greater than the shared variance of all other constructs. Additionally, Business Analytics Capabilities, Responsiveness Capabilities, and Innovative Performance exhibit a strong relationship with all variables, with values of 0.446**, 0.285**, and 0.393**, respectively, and the results are significant. All the variables have been correlated and have a considerable positive impact.

Table 4: HTMT

Variable	BAC	FR	R	RC	IP
Business Analytics Capabilities	0.05				
Firm Resilience	0.07	0.06			
Reconfiguration	0.50	0.07	0.05		
Responsiveness Capabilities	0.30	0.04	0.46	0.47	
Innovative Performance	0.37	0.04	0.41	0.42	0.34

Note. BAC=Business Analytics Capabilities, FR = Firm Resilience, R=Reconfiguration, RC= Responsiveness Capabilities, IP= Innovative Performance

Regarding hypothesis testing, H1 proposed that Business Analytics Capabilities positively impact Innovative Performance. The results show that Business Analytics Capabilities on Innovative Performance were significant ($t = 8.50$, $p < .001$), supporting H1 (see Table 5). In contrast to our expectations, H2 proposed that Business Analytics Capabilities positively influence Firm 3R Capability, supported ($t = 1.38$, $p = .000$). H3 suggested that Business model innovation is positively related to strategic renewal. This hypothesis was also supported ($t = 5.98$, $p < .001$). Regarding the (H3) Firm 3R Capability positively influences Innovative Performance, and (H4), Business Analytics Capabilities positively impact Firm Reconfiguration Capability, which in turn positively impacts Innovative Performance, such that the relationship strengthens when Strategic Agility is high it was found that ($t= 5.90$, $p< .000$) and was also significant ($t= 2.40$, $p< .05$).

Table 5: Path Coefficients

Paths	Hypotheses	Standard Beta	T Statistics	P Values	Decision
BAC -> IP	H1	0.32	8.50	***	Supported
BAC -> F3RC	H2	0.27	1.31	***	supported
F3RC -> IP	H3	0.23	5.78	***	Supported
BAC x F3RC -> IP	H4	0.17	3.57	***	Supported

Note. **p < 0.05; ***p <0.001; Note. BAC=Business Analytics Capabilities, FR = Firm Resilience, R=Reconfiguration, RC= Responsiveness Capabilities, IP= Innovative Performance

DISCUSSION

In this research, the question addressed with Hypothesis 1 is that Business Analytics Capabilities have a positive impact on Innovative Performance. In addition, this study's findings indicate that an organization's Business Analytics Capabilities establish a stronger connection with the strategy business process. Specifically, strong capabilities have a higher impact on innovation performance and strategy than weak capabilities. Business Analytics has become a crucial strategic asset. Organizations are increasingly relying on analytics to gain insights, make informed decisions, and drive innovation. There is growing evidence that BA capabilities significantly enhance innovative performance, enabling firms to develop new products, improve processes, and respond swiftly to market changes. Innovative performance refers to an organization's ability to generate and successfully implement new ideas, products, services, or processes. Business Analytics capabilities serve as a powerful enabler of innovation. By improving decision-making, enhancing customer insights, managing innovation risks, and promoting a culture of experimentation, BA empowers organizations to sustain and accelerate their innovative performance.

According to the findings of several studies (Wang et al., 2018; Mikalef et al., 2019; Wamba et al., 2017; Sheng et al., 2021) source factors, such as Business Analytics Capabilities, act as positive cues that boost attitudes when the performance capabilities are robust. Regarding the testing of hypotheses, the first hypothesis (H1) states that Business Analytics Capabilities are positively associated with innovative performance. Based on the findings, it can be concluded that there is a favorable correlation between Business Analytics Capabilities skills and improved skills. Therefore, business analytics capabilities have a positive impact on Innovative Performance (Ahmed et al., 2024).

In the third question, the scope of the third hypothesis is that Business Analytics Capabilities positively influence Firm Reconfiguration Capability. Furthermore, the findings of this study indicate that Business Analytics Capabilities have a more significant relationship with influencing Firm Reconfiguration Capability. Specifically, high Business Analytics Capabilities have a greater impact on Firm Reconfiguration Capability because organizations can modify the structure of various business process models and procedures, thereby increasing the business's efficiency. The scope hypothesizes that Business Analytics Capabilities positively influence Firm Responsiveness Capability.

In the digital economy, firms operate in highly dynamic markets. To survive and thrive, they must be able to reconfigure their internal resources, processes, and strategies. This ability, known as Firm Reconfiguration Capability, is a core aspect of Dynamic Capabilities Theory (Mikalef et al., 2020; Wamba & Mishra, 2017; Teece, Pisano, & Shuen, 1997). Recent research suggests that Business Analytics Capabilities are a critical enabler of FRC because they provide timely, data-driven insights that support organizational transformation and renewal. Business Analytics Capabilities strengthen a firm’s ability to reconfigure its processes, resources, and structures by enhancing decision-making under uncertainty and supporting real-time monitoring and forecasting, thereby facilitating strategic agility and

digital transformation. By embedding analytics across the organization, firms build adaptive and resilient structures, enabling sustained competitive advantage in volatile markets.

In the third question, the third hypothesis states that Firm 3R Capability positively influences Innovative Performance. The findings indicate that Innovative Performance plays a key role in the connection between satisfaction. It is one of the most essential structures that significantly determines a company's profitability and helps it gain a competitive edge. In the age of rapid technological change, firms must be agile, data-driven, and innovation-oriented. Business Analytics Capabilities are increasingly recognized as critical enablers of dynamic capabilities, including Firm Reconfiguration Capability 3R. These, in turn, enhance Innovative Performance by enabling firms to adapt resources and processes for creative and market-aligned outputs.

Business Analytics Capabilities refer to an organization's ability to gather, process, and apply data-driven insights for informed strategic decisions. These capabilities empower firms to 3R. Firm Reconfiguration Capability (3R Capability), a subset of Dynamic Capabilities Theory (Teece et al., 1997; Wamba et al., 2017), argues that Business Analytics Capabilities enhance an organization’s sensing, seizing, and transforming capabilities, core to dynamic reconfiguration and according to author Mikalef et al. (2020) found empirical evidence that data-driven decision-making supports firms in restructuring resources to exploit new opportunities, a key aspect of reconfiguration that firms with strong dynamic capabilities (like reconfiguration) are better positioned to innovate under changing market conditions. Several studies propose a mediating model, where Business Analytics Capabilities improve Innovative Performance through enhanced Firm Reconfiguration Capability and according to Akter et al. (2016) emphasize that aligning business analytics with organizational agility (a form of reconfiguration) leads to innovation also Mikalef et al. (2019) suggest that without reconfiguration, the impact of analytics on innovation is limited.

In the discussion about the fourth research question and hypothesis 4, Business Analytics Capabilities have a positive impact on Firm 3R Capability, which in turn positively impacts Innovative Performance. It is the responsibility of marketers to acknowledge the potential positive impact that business analytics capabilities may have on innovative performance. The tendency of individuals to be early adopters of new products, services, and ideas is referred to as business model innovativeness, a personality feature associated with this personality attribute. Business Analytics Capabilities provide organizations with easy ways to adopt new approaches to services, product development, and innovative performance improvement. There is a high level of Business Analytics Capabilities and a greater chance of being open to new experiences, willing to take certain risks, and willing to experiment with new things. The Business Analytics Capabilities and Innovative Performance: Mediating Effect of Firm Resilience, Reconfiguration, and Responsiveness Capabilities was reinforced in the discussion (Jin, 2023).

CONCLUSION

In conclusion, this study has comprehensively examined the influence of Business Analytics Capabilities and Innovative Performance: Mediating Effect of Firm Resilience, Reconfiguration, and Responsiveness Capabilities. The robust measurement and structural model assessments, hypothesis testing, mediation, and moderation analyses contribute to our understanding of the complex dynamics in the context of the Mediating Effect of Firm Resilience, Reconfiguration, and Responsiveness Capabilities. In conclusion, this research contributes to the existing body of literature on international marketing by illuminating the various roles that the three brand associations play in developing Business Analytics Capabilities and Innovative Performance during the strategy renewal process. Through the demonstration of Business Analytics Capabilities and Innovative Performance, and the enhancement of productivity through the utilization of Innovative Performance, the findings of this study contribute to a conceptual expansion of our existing knowledge. The conceptual and empirical data that support these proposed assumptions

contribute to the existing body of knowledge by drawing attention to the disparities in the degree of Business Analytics Capabilities and Innovative Performance and Firm Resilience, Reconfiguration, and Responsiveness Capabilities. These correlations exist between business model innovation and strategy renewal.

Furthermore, the findings of this study indicate that Business Analytics Capabilities have a more significant relationship with influencing Firm Responsiveness Capability. Specifically, high business analytics capabilities have a greater impact on firm responsiveness because organizations can modify the structure of various business process models and procedures, thereby increasing the business's efficiency. The scope hypothesizes that Business Analytics Capabilities positively influence Firm Resilience Capability. Furthermore, the findings of this study indicate that business analytics capabilities have a more significant relationship with influencing firm resilience capabilities. Specifically, high Business Analytics Capabilities have a greater impact on Firm Resilience Capability because organizations can change the structure of different business process models and procedures, increasing the business's efficiency when the Business Analytics Capabilities are specific source features, such as legitimacy, which function as positive cues, according to the findings of several studies. Contrary to our initial anticipation, Hypothesis (H2) proposes that organizational learning capabilities have a positive relationship with Firm 3R Capability (AlSaied & Alkhoraif, 2024). In this research, numerous studies are available in the market, such as Longitudinal studies that track capability development and innovation over time. Investigate moderating variables, such as organizational culture, digital maturity, or leadership style. Explore sectoral differences in how BAC affects innovation through different 3R mechanisms.

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