

PREDICTIVE BUSINESS ANALYTICS ADOPTION AND ORGANIZATIONAL RESILIENCE OF PAINT MANUFACTURING FIRMS IN RIVERS STATE

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Abstract

This study examined the relationship between predictive business analytics adoption and resilience of paint manufacturing firms in Rivers State. The objectives of the study were to ascertain the relationship between the predictive business analytics adoption and measures of resilience (adaptive capacity, situation awareness, dynamic capability) of paint manufacturing firms in Rivers State. The study was anchored on dynamic capabilities theory and resource-based view theory. The researcher adopted a correlation research design. The target population of the study consisted of all the 52 registered and approved paint manufacturing firms in Rivers State, out of which fifteen (15) paint manufacturing firms were selected as sample. The research data for the study was collected mainly from the primary source. Bivariate data were tested with Pearson Product Moment Correlation Coefficient. The result showed that predictive business analytics adoption significantly and positively relates with adaptive capacity, situation awareness and dynamic capability of paint manufacturing firms in Rivers State. It was concluded that the adoption of predictive business analytics significantly enhances organizational resilience among paint manufacturing firms in Rivers State. Based on the findings and conclusion, it was recommended that, paint manufacturing firms in Rivers State should strategically adopt predictive business analytics systems to gain clearer insights into market trends and support timely decision-making.

Key Words: Predictive Business Analytics, Resilience, Adaptive Capacity, Dynamic Capacity, Situation Awareness

Introduction

In recent years, changes in customer and market demand as well as global financial crises are threatening firms' survival. To be sustainably successful, firms need to develop resilient capability, which can be defined as the ability to anticipate potential threats, to cope effectively with unexpected events, and to learn from these events in order to produce a dynamic capability that is directed toward facilitating organizational change (Duchek 2014). According to Fahy, Howe, Murphy and Hauser (2015), organizational resilience involves the ability of an organization to anticipate, prepare for, and adapt to disruptive events, such as market fluctuations, technological disruptions, or natural disasters. Resilience allows for effectively handling crises and can even be a source of competitive advantage (Hamel & Vaelikangas 2023; Sheffi 2015) and long-term success (Coutu 2022; Horne, 2017). Annarelli and Nonino (2016) posited that resilience is the capability to face disruptions and unexpected events in advance thanks to the strategic awareness and a linked operational management of internal and external shocks.

The ability to predict trends and outcomes has become more and more important in the face of an abundance of data flows. Predictive business analytics plays an important role in devising corporate

strategies, add value in organizations, and improving job performance of employees in an organization (Lawler & Mohrman, 2023; Ulrich & Dulebohn, 2015). Predictive analytics are defined as technologies and methods that allow organization to detect orientations and patterns in data, developing models, and testing a huge number of variables. The predictive analytics are used by organizations to achieve their desired goals and increase their profits. According to Lawler, Levenson, and Boudreau (2024), the use of predictive analytics has become increasingly popular in organizations. Predictive business analytics can help HR professionals anticipate future workforce trends, such as employee turnover or skills gaps, and develop strategies to address them before they become major issues (Naasz & Nadel, 2015). Predictive business analytics is a powerful tool among the different types of HR analytics for HR professionals, allowing them to make data-driven decisions and develop strategies based on accurate data-predictions of future outcomes. By using predictive analytics, HR professionals can improve their recruitment and retention efforts, optimize their workforce planning, and ultimately drive business success to greater heights.

Manufacturing firms operate in highly volatile environments characterized by fluctuating raw material prices, supply chain disruptions, changing consumer preferences, technological advancements and increasing competition. Consequently, organizations are increasingly leveraging predictive business analytics to transform historical and real-time data into actionable intelligence capable of improving operational efficiency, anticipating market changes and enhancing organizational resilience. Predictive analytics enables firms to make proactive rather than reactive decisions, thereby improving adaptability and long-term competitiveness.

Several researches have been conducted on predictive analytics recently. For instance, Ejo-Orusa and Okwakpam (2018) carried out a study on predictive HR analytics and human resource management amongst human resource management practitioners in Port Harcourt, Nigeria and their finding revealed that there is a significant positive relationship between PHRA and the HRM practices used for the study. Ruohonen (2015) further examined the need to leverage predictive analytics in the human resource management domain. Francis and Zeb-Obipi (2021) investigated the relationship between Predictive Human Resource Analytics (HRA) and Organizational Sustainability of Deposit Money Banks in South-South, Nigeria. Despite increasing awareness of predictive business analytics, many manufacturing firms in Nigeria still rely on intuition and traditional decision-making processes. This has limited their ability to anticipate environmental disruptions, forecast market trends and respond effectively to operational uncertainties. Although previous studies have examined predictive analytics within human resource management, banking and telecommunication sectors, empirical evidence on its relationship with organizational resilience in manufacturing firms, particularly paint manufacturing firms in Rivers State, remains scarce. This empirical gap necessitated the present study.

Purpose of the Study

The purpose of the study was to ascertain the relationship between predictive business analytics and resilience of paint manufacturing firms in Rivers State. The specific objectives of the study are as follows:

- i To examine the relationship between predictive business analytics and adaptive capacity of paint manufacturing firms in Rivers State.
- ii To ascertain the relationship between predictive business analytics and situation awareness of paint manufacturing firms in Rivers State.
- iii To analyze the relationship between predictive business analytics and dynamic capability of paint manufacturing firms in Rivers State.

Conceptual Framework

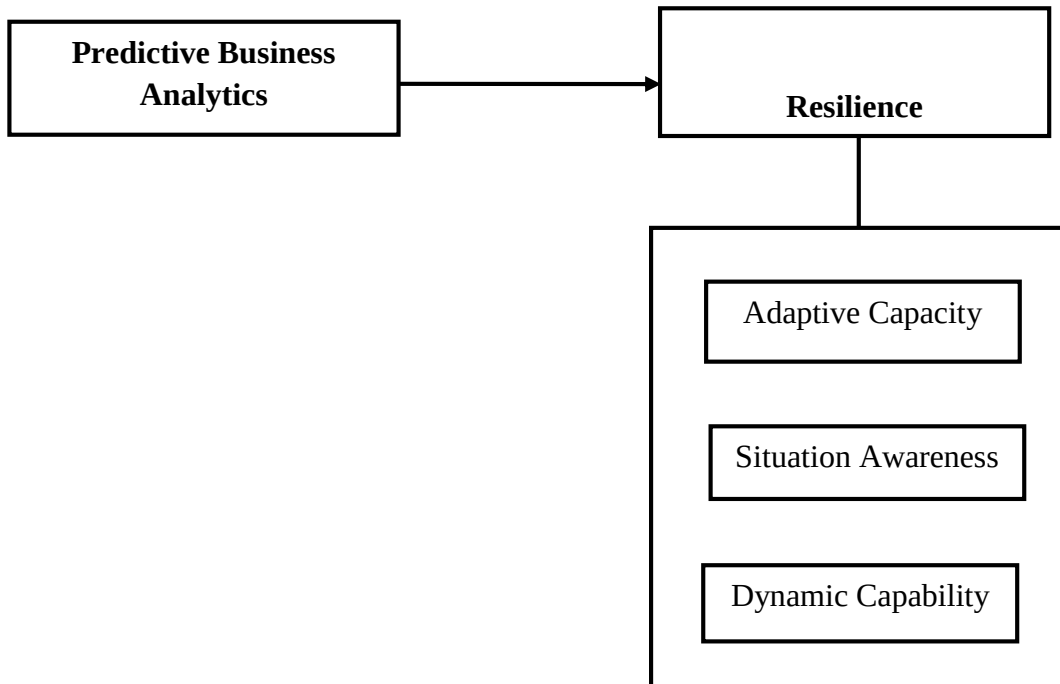


Fig. 1.1 Conceptual framework of Predictive Business Analytics and Resilience

Source: From the Researcher's Desk (2026), with measures of organizational resilience adapted from the work of Obiekwe (2018).

Research Questions

The following research questions guided the study.

- What is the relationship between predictive business analytics and adaptive capacity of paint manufacturing firms in Rivers State?
- What is the relationship between predictive business analytics and situation awareness of paint manufacturing firms in Rivers State?
- What is the relationship between predictive business analytics and dynamic capability of paint manufacturing firms in Rivers State?

Hypotheses

The following hypotheses are stated in null form to achieve the stated objectives.

- Ho₁:** There is no significant relationship between predictive business analytics and adaptive capacity of paint manufacturing firms in Rivers State.
- Ho₂:** There is no significant relationship between predictive business analytics and situation awareness of paint manufacturing firms in Rivers State.
- Ho₃:** There is no significant relationship between predictive business analytics and dynamic capability of paint manufacturing firms in Rivers State.

Literature Review

Theoretical Review

This study builds on the underpinning theoretical foundations: Dynamic Capabilities Theory (DCT) and Resource-Based View Theory (RBV).

Dynamic Capabilities Theory

Dynamic capabilities theory as proposed by Teece and Pisano (1994) is the extension from resource-based view (RBV) of the firm (Barney, 1991). The DCT sets out to explain how competitive advantage is achieved. It posits that firms must possess the ability to integrate, build, and reconfigure internal and external competences to adapt to and thrive in dynamic environments. The core proposition of Dynamic Capabilities Theory, pioneered by Teece, Pisano, and Shuen (1997), is that firms must possess the ability to integrate, build, and reconfigure internal and external competences to adapt to and thrive in dynamic environments. DC theory goes beyond the idea that sustainable competitive advantage is based on a firm's acquisition of valuable, rare, inimitable and non-substitutable (VRIN) resources. The definition of dynamic capabilities as defined by Teece, Pisano, and Shuen (1997) is the ability of the firm to combine, develop and reconfigure external and internal expertise in order to respond to speedily changing environment. Eisenhardt and Martin (2000) define dynamic capabilities as the process of use resources to create new resources that can create market change.

Teece (2007) made a major contribution to DC theory by writing about the micro-foundations for each of the three following dimensions: sensing (identification and assessment of an opportunity), seizing (mobilization of resources to address an opportunity and to capture value) and transforming (continued renewal "reconfiguring the business firm's intangible and tangible assets"). Nevertheless, intense criticisms have been levelled against the theory, such as the nature of the term itself and difficulties in determining the merits of the outcomes of the theory (Zahra, Sapienza & Davidson, 2006), difficulty in understanding the nature of DCs and the absence of clear models to measure these capabilities and how they affect the performance of organizations (Zott, 2003). The theory has also been criticized for being repetitive (Zollo & Winter, 2002) and ineffective in providing a complete answer regarding DCs and they operate (Schreyogg & Kliesch-Eberl, 2007). The theory is highly relevant to the study of predictive business analytics and organizational resilience because it provides a framework for understanding how organizations can adapt to changing environments and leverage analytics for competitive advantage by sensing, seizing, and transforming.

Resource-Based View Theory

The resource-based view (RBV) theory was postulated in 1984 by Wernerfelt as a major philosophy that has been embraced to investigate the matter (Hogler, 2016). The argument in the theory is that a firm consists of a collection of productive resources' and these resources may only contribute to a firm's competitive position to the extent that they are exploited in such a manner that their potentially valuable services are made available to the firm. Wright and McMahan (2009) affirm that RBV is more suitable in explaining performance, based on path dependency and administrative heritage. It is however less useful in predicting under what circumstances the specific resources of a company will generate a sustainable competitive advantage. Another criticism is that the inside-out perspective tends to neglect the importance of contextual factors, including the Porter-based factors (such as threat of market entry and threat of suppliers), as well as the institutional setting, which is particularly crucial from a HRM point of view.

The resource-based theory has caused a change in strategic management thinking from an outside-in approach to an inside-out approach. In this 'new' stream of thought, internal resources form the starting point of determining organizational success, in contrast to the 'old' paradigm of outside-in thinking. Authors like Kamoche (1996), Boxall (2008) and Wright *et al.* (2009) applied this theory to the field of management and state that it is people that encompass the properties assumptions of value, rareness, inimitability, and non-substitution, – which according to Barney (2001) are the necessary conditions for organizational success. The theory is relevant to the present study

because it emphasizes the importance of internal resources and capabilities as drivers of competitive advantage and performance, which aligns with the need for organizations to leverage data and analytics for agility and innovation.

Conceptual Review

Concept of Predictive Business Analytics

Predictive Business Analytics refers to the application of statistical modelling, machine learning algorithms and artificial intelligence techniques to historical and current organizational data for forecasting future business outcomes. Organizations employ predictive analytics to estimate customer demand, forecast sales, optimize inventory, improve production planning, detect operational risks and support strategic decision-making. The primary objective is to reduce uncertainty and improve organizational performance through evidence-based decisions.

Predictive business analytics can help HR professionals anticipate future workforce trends, such as employee turnover or skills gaps, and develop strategies to address them before they become major issues (Harcourt, Kayii & Ikegwuru, 2023; Naasz & Nadel, 2015). Unless some major disruptive event takes place in the process, such extrapolative calculated outcomes generally hold true. For example, predictive analytics can be used to develop models that predict which employees are most likely to leave the organization in the next year. This information can be used to proactively identify and address the underlying causes of employee turnover, be it satisfactory compensation, lack of welfare amenities, growth opportunities etc. before it becomes a more serious problem. Similarly, predictive analytics can be used to identify which employees are most likely to be promoted, providing insights into where to invest in training and development programs (Naasz & Nadel, 2015). Predictive analytics is a powerful tool among the different types of HR analytics for HR professionals, allowing them to make data-driven decisions and develop strategies based on accurate data-predictions of future outcomes. By using predictive analytics, HR professionals can improve their recruitment and retention efforts, optimize their workforce planning, and ultimately drive business success to greater heights. Predictive analytics in general are used to detect the relationships and patterns in data in order to predict the future by analyzing the past and taking better preventive decisions.

Resilience

Recently, the concept of organizational resilience has gained increasing attention in organization and management research. Resilience is considered an essential success factor for organizations in unstable and uncertain times that allows them to cope with various kinds of disturbances from adverse developments to major crises (McCann *et al.* 2009). A resilient organizational system is able to respond successfully to any kind of disturbance and even thrive in spite of it (Lengnick-Hall *et al.* 2011; Linnenluecke 2017). Recent research agrees that organizational resilience is a complex, multifaceted, and multidimensional construct; however, the utilized notions and definitions of resilience vary greatly depending on the particular research context (Bhamra *et al.* 2011; Sawalha 2015; Linnenluecke 2017; Williams *et al.* 2017).

According to Wallace and Baum (2017), organizational resilience is defined as "the capacity of an organization to anticipate, absorb, adapt to, and recover from external shocks and persistent stressors". This capacity is critical for organizations seeking to maintain their competitive position, innovate and thrive in uncertain environments, and respond effectively to challenges such as natural disasters, economic downturns, or competitive pressures. The importance of organizational resilience has been recognized in various sectors, including healthcare, finance, and disaster management, where organizations must be able to respond quickly and effectively to changing conditions and unanticipated events (Drury *et al.*, 2012; Turner *et al.*, 2019). Organizational

resilience can be defined as the ability to anticipate potential threats, to cope effectively with unexpected events, and to learn from these events in order to produce a dynamic capability that is directed toward facilitating organizational change. Several scholars have pointed out different measures of organization resilience (Khanka, 2018). In this study, we adopted the following as measures of organizational resilience.

Adaptive Capacity

There are many different definitions of adaptive capacity. While the term adaptive capacity is used to refer to a multitude of attributes and processes, there is still no general agreement within the literature regarding what these attributes and processes should be (Adger *et al.*, 2004). Most definitions of adaptive capacity refer to attributes that enable a system to adapt in the face of change, to maintain a desirable state or transform to a new state. For instance, Adger *et al.* (2004: 28) define adaptive capacity as "the ability or capacity of a system to modify or change its characteristics or behaviour so as to cope better with existing or anticipated external stresses." Adaptive capacity therefore has direct implications for how and at what level adaptation occurs within a given system (Nelson *et al.*, 2007). Within the resilience literature, definitions of adaptive capacity typically focus on the outcomes of the ability of the system to respond to disturbance (Carpenter *et al.* 2021), namely to increase or maintain quality of life (Gallopín, 2006) or to avoid entering an undesirable state or manage to cross back into a desirable state (Walker *et al.*, 2004). The other major theme within the many definitions relates to the resources associated with adaptive capacity. For example, Adger and Vincent (2005: 400) define adaptive capacity as "a vector of resources and assets that represent the asset base from which adaptation actions and investments can be made."

Dynamic Capability

The concept of dynamic capabilities has emanated from the resource-based view (RBV) for its ability to meet rapid environmental changes (Teece, 2007). Eisenhardt & Martin, (2020) describe dynamic capabilities as a set of specific and identifiable processes such as product development, strategic decision making, and alliancing. Dynamic capabilities are distinctive in their details and path dependent on their emergence; they have significant commonalities across firms. Zollo and Winter (2022) define dynamic capabilities as a learned and stable collective process that enable organization systematically creates and modifies its operational activities in order to improve effectiveness. Zahra and George, (2002) state that dynamic capabilities are basically changing-oriented capabilities that enable firms to renew and reconfigure their resource base to meet evolving customer demands and competitor strategies. More recent, Rao (2016) describes dynamic capabilities as firm's capability to manage alliances, learn, integrate and reconfigure resource base to address the changing business conditions.

Situation Awareness

Situational awareness or situation awareness (SA) is the understanding of an environment, its elements, and how it changes with respect to time or other factors. Situational awareness is important for effective decision making in many environments. Situation awareness (SA) is defined as "the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future" (Endsley, 2015). In the context of complex operational environment, SA is concerned with a person's knowledge of particular task-related events and phenomena. SA is critical for the reliable operation of almost all systems and domains (Moradi-Pari, 2016). It is formally defined as: "the perception of the elements in the environment within a volume of time and space, the comprehension of their

meaning, and the projection of their status in the near future". An alternative definition is that situation awareness is adaptive, externally-directed consciousness that has as its products knowledge about a dynamic task environment and directed action within that environment.

Situation awareness has been recognized as a critical foundation for successful decision-making across a broad range of situations. Inadequate situation awareness has been identified as one of the primary causal factors in accidents attributed to human error (Moradi-Pari, 2016). According to Endsley's situation awareness theory, when someone meets a dangerous situation, he needs an appropriate and a precise decision-making process which include pattern recognition and matching, formation of sophisticated schemata and archetypal knowledge that aids correct decision making.

Empirical Review

Recent empirical evidence suggests that predictive analytics significantly improves supply chain responsiveness, operational efficiency, production scheduling and organizational adaptability within manufacturing firms. Organizations utilizing predictive models are better positioned to identify potential disruptions, optimize resource allocation and respond rapidly to environmental uncertainties, thereby strengthening organizational resilience

Georgewill, Zeb-Obipi and Oparanma (2021) ascertained the relationship between predictive analytics and organizational competence of GSM telecommunication firms in Nigeria. The objectives centred around identifying the relationship between predictive analytics and the measures of organizational competence (functional competence, technological competence, quality control). The design for the study was the correlational design and the population for this study comprised of four functional GSM telecommunication firms with the population elements comprising 16 managers of the firms. Data collection instrument was the structured questionnaire, which was assessed using the Cronbach alpha reliability test. The Spearman's rank order correlation was used in testing for the bivariate hypotheses. The results from the analysis revealed that there is a significant relationship between predictive analytics and organizational competence of GSM telecommunication firms in Nigeria. It was concluded that activities concerned with the adoption of utility of predictive analytical processes, enhances and contributes substantially towards the organizations competence level.

Gupta (2021) focused on the performance evaluation of Employees working in an organization with the use of predictive analysis and evaluates the research on the basis of primary data survey method. A questionnaire was used as a tool in the study and the responses of employees from a particular organization were taken and the analysis was done based upon those responses. The study also includes the literature review part where the previous studies done related to the use of predictive analysis in the performance evaluation of employees in an organization was used and the study further concludes with the decision and more innovative techniques of predictive analysis that can be used in future to evaluate employee performance.

Ejo-Orusa and Okwakpam (2018) carried out a study on predictive HR analytics and human resource management amongst human resource management practitioners in Port Harcourt, Nigeria and their finding revealed that there is a significant positive relationship between PHRA and the HRM practices used for the study. Based on the findings, it can be concluded that PHRA is an important factor in enhancing the HRM practice outcomes which subsequently increases sustainability of organizations. Similarly, the finding also concurs with Ruohonen (2015) who that, there is a need to leverage predictive analytics in the human resource management domain to identify the possible benefits. Using a qualitative approach to data collection where semistructured interviews backed up by a questionnaire and multiple case studies were utilized, interesting findings were observed. Although the findings were company specific, general implications for businesses can be deduced.

The benefits were enhanced individual and organizational performance, increased employee engagement and satisfaction, customer satisfaction, increased profitability and sales, and cost reductions. These benefits were identified in areas valuable to these organizations within the Human Resource domain. The findings of the study reveal the need to leverage predictive analytics if the organization wants to be strategic partners in the business. Although the findings are relevant, using firms that are matured in the use of predictive analytics could have elicited quite different evaluations other than young ones as was the case in this study. A bigger sample could have also increased the definitive trends as well as credibility to some of the questions posed compared to the smaller sample of five.

Ruohonen (2015) examined the need to leverage predictive analytics in the human resource management domain. Using a qualitative approach to data collection where semi-structured interviews backed up by a questionnaire and multiple case studies were utilised, interesting findings were observed. Although the findings were company specific, general implications for businesses can be deduced. The benefits were enhanced individual and organisational performance, increased employee engagement and satisfaction, customer satisfaction, increased profitability and sales, and cost reductions. These benefits were identified in areas valuable to these organisations within the Human Resource domain. The findings of the study reveal the need to leverage predictive analytics if the organisation wants to be strategic partners in the business.

Francis and Zeb-Obipi (2021) investigated the relationship between Predictive Human Resource Analytics (HRA) and Organizational Sustainability of Deposit Money Banks in South-South, Nigeria. The study adopted the cross-sectional survey in its investigation of the variables. Primary source of data was generated through structured questionnaire. The population of this study was the 22 Deposit Money Banks in Nigeria since the entire population of 22 deposit money banks was adopted as a census. However, the respondents/ participants in the study were sixty six (66) Regional Managers of the 22 deposit money banks. The research instrument was validated by supervisor's vetting and approval while the reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70 from a pilot survey of twelve (12) respondents. The hypotheses were tested using the Spearman's Rank Order Correlation Coefficient. The tests were carried out at a 0.05 significance level. Findings from the study revealed that there is a significant relationship between predictive human resource analytics and organizational sustainability of deposit money banks in South-South, Nigeria.

Methodology

The study adopted a correlation research design to investigate the relationship between the study variables. The target population of this study consisted of all the 52 registered and approved paint manufacturing firms in Rivers State as obtained from the Yellow Pages Directory, Rivers State Ministry of Commerce and Industry. The population comprised fifty-two (52) registered paint manufacturing firms obtained from the Rivers State Ministry of Commerce and Industry. The study focused on fifteen (15) paint manufacturing firms in Rivers State. The choice of these firms was based on their predominance activities in the paint industry in terms of product quality, pursuance of innovation, brand strength, turnover, market share, technology and visibility of their offices in Port Harcourt. The entire fifteen (15) paint manufacturing firms was studied as sample size using census method of sampling. The selected firms possessed consistent operational records, active production facilities and managerial structures capable of providing reliable responses. The reliability coefficients for the study variables exceeded the acceptable threshold of 0.70, indicating satisfactory internal consistency. The research data for the study was collected mainly from the primary source. The main data collection instrument for this study was a structured questionnaire. The research

instrument was subjected to face and content validity. The researcher adopted the Cronbach alpha co-efficient method in measuring the reliability of the research instrument. Bivariate data were tested with Pearson Product Moment Correlation Coefficient. All analyses were done through the application of Statistical Package for Social Science (SPSS version 27.0).

Data Analysis and Findings

This section is concerned with the presentation of result of analyzed data and discussion of the findings.

4.1 Relationship between predictive business analytics and adaptive capacity

Table 4.1: Summary of PPMC analysis on the relationship between predictive business analytics and adaptive capacity

		Predictive Business Analytics	Adaptive Capacity
Predictive Business Analytics	Pearson Correlation	1	.612**
	Sig. (2-tailed)		.000
	N	40	40
Adaptive Capacity	Pearson Correlation	.612**	1
	Sig. (2-tailed)	.000	
	N	40	40

** . Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS Output, 2026

The result on Table 4.1 shows the summary of PPMC analysis on the relationship between predictive business analytics and adaptive capacity. The result shows that the Pearson's Product Moment Correlation coefficient (r) is .612**. This means that a strong and positive relationship exists between predictive business analytics and adaptive capacity of paint manufacturing firms in Rivers State at 0.05 level of significance and P.value of 0.000. Based on this result, the null hypothesis which states that there is no significant relationship between predictive business analytics and adaptive capacity of paint manufacturing firms in Rivers State was hereby rejected and the alternate hypothesis accepted. It was therefore concluded that, there is a significant relationship between predictive business analytics and adaptive capacity of paint manufacturing firms in Rivers State.

4.2 Relationship between predictive business analytics and situation awareness

Table 4.2: Summary of PPMC analysis on the relationship between predictive business analytics and situation awareness

		Predictive Business Analytics	Situation Awareness
Predictive Business Analytics	Pearson Correlation	1	.448*
	Sig. (2-tailed)		.028
	N	40	40

Situation Awareness	Pearson Correlation	.448*	1
	Sig. (2-tailed)	.028	
	N	40	40

*. Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS Output, 2026

The result on Table 4.2 shows the summary of PPMC analysis on the relationship between predictive business analytics and situation awareness. The result shows that the Pearson's Product Moment Correlation coefficient (r) is .448*. This means that a moderate and significant relationship exists between predictive business analytics and situation awareness of paint manufacturing firms in Rivers State at 0.05 level of significance and P.value of 0.028. Based on this result, the null hypothesis which states that there is no significant relationship between predictive business analytics and situation awareness of paint manufacturing firms in Rivers State is hereby rejected and the alternate hypothesis accepted. It is therefore concluded that, there is a significant relationship between predictive business analytics and situation awareness of paint manufacturing firms in Rivers State.

4.3 Relationship between predictive business analytics and dynamic capability

Table 4.3: Summary of PPMC analysis on the relationship between predictive business analytics and dynamic capability

		Predictive Business Analytics	Dynamic Capability
Predictive Business Analytics	Pearson Correlation	1	.608
	Sig. (2-tailed)		.000
	N	40	40
Dynamic Capability	Pearson Correlation	.608	1
	Sig. (2-tailed)	.000	
	N	40	40

**. Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS Output, 2026

The result on Table 4.3 shows the summary of PPMC analysis on the relationship between predictive business analytics and dynamic capability. The result shows that the Pearson's Product Moment Correlation coefficient (r) is .608**. This means that a strong and positive relationship exists between predictive business analytics and dynamic capability of paint manufacturing firms in Rivers State at 0.05 level of significance and P.value of 0.000. Based on this result, the null hypothesis which states that there is no significant relationship between predictive business analytics and dynamic capability of paint manufacturing firms in Rivers State is hereby rejected and the alternate hypothesis accepted. It is therefore concluded that, there is a significant relationship between predictive business analytics and dynamic capability of paint manufacturing firms in Rivers State.

Discussion of Findings

The findings of this study provide empirical evidence supporting the proposed hypotheses on the relationship between predictive business analytics and organizational resilience among paint manufacturing firms in Rivers State.

The first hypothesis revealed that predictive business analytics has a significant and positive relationship with the adaptive capacity of paint manufacturing firms in Rivers State ($r = 0.612$, $p < 0.05$). This finding indicates that the adoption of predictive business analytics enhances the ability of firms to anticipate environmental changes, respond proactively to emerging challenges, and adjust their operational strategies effectively. The result is consistent with the findings of Ejo-Orusa and Okwakpam (2018), who reported a significant positive relationship between predictive human resource analytics and human resource management practices among HR practitioners in Port Harcourt, Nigeria. Their study concluded that predictive analytics enhances organizational decision-making and contributes to improved organizational sustainability. Although their study focused on the human resource domain, the present finding suggests that predictive analytics similarly strengthens organizational adaptability within the manufacturing sector.

The second hypothesis showed that predictive business analytics has a moderate but significant positive relationship with situational awareness among paint manufacturing firms in Rivers State ($r = 0.448$, $p < 0.05$). This finding implies that organizations adopting predictive business analytics are better equipped to monitor their business environment, identify emerging opportunities and threats, and make informed strategic decisions. The result corroborates the findings of Ruohonen (2015), who emphasized the strategic importance of predictive analytics in organizational decision-making. Ruohonen reported that organizations leveraging predictive analytics experienced improvements in organizational performance, customer satisfaction, employee engagement, profitability, and cost reduction. The present study extends these findings by demonstrating that predictive business analytics enhances situational awareness, thereby strengthening organizational resilience within the manufacturing industry. The third hypothesis revealed a significant and positive relationship between predictive business analytics and the dynamic capability of paint manufacturing firms in Rivers State ($r = 0.608$, $p < 0.05$). This finding suggests that predictive business analytics enhances firms' ability to integrate, reconfigure, and deploy organizational resources in response to changing market conditions and environmental uncertainties. The result supports the findings of Georgewill, Zeb-Obipi, and Oparanma (2021), who found a significant positive relationship between predictive analytics and organizational competence among GSM telecommunication firms in Nigeria. Their study concluded that the adoption of predictive analytics contributes significantly to improving organizational capabilities and overall performance. Similarly, the present study demonstrates that predictive business analytics strengthens the dynamic capabilities required for sustained organizational resilience in paint manufacturing firms.

Conclusion and Recommendations

The study concludes that effective predictive business adoption analytics foster resilience of paint manufacturing firms in Rivers State. By adopting advanced analytics, firms can better anticipate market changes, make proactive decisions, and adapt swiftly to uncertainty, which in turn boosts their flexibility, innovation, and overall competitiveness. Predictive analytics equips managers with the ability to make informed, data-backed decisions, allowing them to identify and address potential problems before they escalate.

Consequently, paint manufacturing firms in Rivers State should strategically adopt predictive business analytics systems to gain clearer insights into market trends and support timely decision-making.

Additionally, firms should invest in ongoing training and development programs focused on predictive analytics to equip employees, particularly in strategic and operational roles, with the skills needed to interpret data effectively and derive actionable insights, thereby strengthening the organization's resilient capabilities.

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