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The big data analytical capability and firm performance: mediating role of supply chain performance

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Abstract

As a method of strengthening overall performance, the capacity to apply big data analytics is becoming increasingly vital in the current business environment. This study aims to examine whether and how supply chain performance mediates the relationship between a company's big data analytical proficiency and its bottom line. The study collects data from two hundred Asian manufacturing companies using a quantitative methodology. Combining structural equation modeling (SEM) and partial least squares analysis, we were able to confirm the central model's correctness (PLS). The results reveal a statistically significant and favorable correlation between big data analytical skills and business success. According to the study, supply chain performance is also a partial mediator of this relationship. According to the findings, supply chain efficiency is essential to a company's success since it promotes the application of big data analytical skills. The outcomes of this study have significant consequences for Asian manufacturing. They emphasize the significance of boosting an organization's analytical capabilities by utilizing big data. The performance of the supply chain is vital in mediating the relationship between the two concepts.

Keywords: analytical capability, firm performance, supply chain performance

BACKGROUND

Companies in a variety of industries are becoming increasingly interested in big data management as a result of its obvious benefits. Big data analytics (BDA) is the management, processing, and analysis of large datasets, and it has recently attracted the attention of both practitioners and academics (Ferraris et al., 2019; Mikalef et al.,2019). In the current uncertain and unpredictable business environment, a company's dynamic capabilities are crucial for optimizing its resources and organizational competencies (Popovič et al.,2018). BDA is now widely acknowledged as a dynamic capability that can assist businesses in achieving their objectives and thriving (Müller et al., 2018). The most significant advantage provided by BDA is the generation of valuable insights that aid in understanding changes in business and market environments, thereby providing a competitive advantage for the organisations (Ghasemaghaei,2018). Because BDA capabilities are now a requirement for companies to remain competitive, businesses must investigate the effect these capabilities have on their performance in various areas. The "information technology (IT) productive paradox" refers to prior research findings that contradict productivity gains attributable to investments in information systems. Despite the fact that a number of researchers have discovered a

direct positive correlation between investment in information systems and firm performance, others have argued that this does not always result in the creation of business value. In a similar vein, eminent academics have proposed that a company's IT resources and capabilities cannot improve its performance on their own, and that multiple mediator variables are involved (Gupta et al.,2019). Recent research has revealed a positive relationship between BDA capabilities and firm performance; however, some researchers have emphasized the indirect nature of these capabilities' effects, highlighting how they are mediated by other organizational capabilities. Therefore, additional empirical research is required to demonstrate how BDA capabilities can enhance firm performance. Despite growing interest in leveraging BDA capabilities to gain a competitive advantage and improve performance, investments in this area do not always yield profits, and only a small percentage of organisations achieve the desired results (Singh & El-Kassar,2019).

T The discovery of models that reduce the risks associated with investing in BDA capabilities and bring organizational managers closer to their desired outcomes is frequently appealing to the managers of these organisations. As we applied it to this research question, the dynamic capabilities view (DCV) provided us with a solid theoretical basis (Mikalef et al.,2020). In order to produce long-term competitive advantages, dynamic capabilities leverage the capabilities of other organizational units. Not only can BDA capabilities facilitate data-driven decision making, but they can also enable other organizational capabilities to convert insights into actions. Previous research has demonstrated that the presence of business analytics capabilities can improve a company's performance by increasing its agility through the development of innovative capabilities and the improvement of information quality (El-Kassar & Singh,2019). We believe that the impact of BDA capabilities on innovation capabilities is equally as important as their impact on information quality. Additionally, firm agility significantly contributes to an organization's enhanced supply chain resilience (SCR). Recent research indicates that data analytics capabilities can increase a company's competitive advantage (SCR). In today's volatile business environment, it is common knowledge that resilience is a crucial success factor.

According to the findings of Wamba et al. (2020), a company must rely on high-quality information in order to implement adequate risk controls and make well-informed risk management decisions. Moreover, businesses must be able to respond quickly and creatively to disruptions in order to be resilient. Therefore, we investigate how BDA capabilities can improve a company's supply chain resilience (SCR) by enhancing its innovative capabilities and information quality, resulting in enhanced performance.

LITERATURE REVIEW

BDA capabilities

In the research on the concept of big data, three primary definitional categories have been presented. The first category focuses on data and the characteristics it possesses and uses the letter "V" to define big data (Mikalef et al.,2018). The terms "volume," "velocity," "variety," and "veracity," as well as "value," are frequently used when discussing big data, for instance. "volume" and "velocity" refer to the rate at which data can be processed and analyzed in real time, "variety" and "veracity" to the dependability of data sources, and "value" to the strategic, transactional, and informational benefits of big data (Raut et al.,2019). The second category of definitions focuses on big data analysis methods, tools, and techniques, while the third category emphasizes the business impact

and value created by big data analytics. These definitions contributed to the conception of business data analytics (BDA), which involves combining data, analytics, and presentation to create business value. BDA is an exhaustive method for managing and analyzing the five Vs of big data (Wange et al.,2018). It provides businesses with actionable insights that can enhance their performance and value creation.

Business data analytics (BDA) has become a crucial aspect of the viability of businesses operating in a variety of markets in recent years, as the significance of big data has risen dramatically (Del Giudice et al.,2021). In today's fast-paced and ever-changing business environment, the key to BDA success is the accumulation of valuable insights for the purpose of understanding changes. To ensure the success of big data projects, however, a broader range of factors must be considered in addition to the data itself and analytical tools and methods. The concept of BDA capabilities has been proposed as a solution for these issues (Aydiner et al.,2019). The objective of this concept is to expand the scope of big data to encompass all relevant organizational resources.

The term "BDA capabilities" refers to a set of resources, tools, techniques, and processes that enable a company to process, analyse, and visually represent large amounts of data to enable data-driven planning, decision-making, and implementation, which ultimately leads to a competitive advantage (Dubey et al.,2019). In addition to their vast array of other capabilities, BDA enables organisations to uncover hidden patterns, correlations, and trends. BDA becomes a tool for translating insights into actions by empowering other organizational capabilities.

Consequently, it is essential to investigate the effect of BDA capabilities on other organizational capabilities and how these other organizational capabilities, acting as intermediary conditions, affect performance gains (Wang et al.,2018). Numerous studies have examined the significance of BDA capabilities and their influence on organizational performance. According to these studies, the success of big data projects depends not only on data and analyses, but also on other organizational factors.

Supply chain resilience (SCR)

Unpredictability and volatility, which characterize the contemporary business environment, place entities and businesses along the supply chain at risk of disruption (Ardito et al.,2019). This category contains internal and external obstacles that impede the movement of goods and services. Inadequate management of these disturbances can have a significant influence on a company's business continuity, resulting in poor financial and operational performance (Khin & Ho,2018). Hence, resilience has become an essential requirement in supply chain management, as the attention of academics and industry practitioners' changes toward business supply chain resilience (SCR). SCR refers to the capacity of a system to absorb changes and restore normal operations following an acceptable degree of disturbance. SCR may be achieved by the application of anticipation, resistance, recovery, and reaction. With efficient interruption control, the uninterrupted flow of information, goods, and currencies down the supply chain may be maintained (Arunachalam et al.,2018). In addition, SCR has the ability to place firms in a more advantageous competitive position than their rivals following a disruption. In recent years, both strategic management and supply chain risk management have recognized resilience as a crucial complex term. Nevertheless, it has become a big concern (Jeble et al.,2018). It is essential to comprehend SCR in terms of adaptation and change, in addition to the meaning of sustainability.

BDA capabilities and firm performance

Using a process known as corporate data analytics, businesses can overcome the problem of maintaining and analyzing vast amounts of data (BDA) (Grover et al.,2018). The purpose of business intelligence and analytics is to gain a competitive edge through the usage of the information and insights gleaned from the acquired data. One method for achieving this is through examining the data (BDA). BDA personnel's strategic and operational expertise is frequently regarded as a game-changer (Fosso Wamba et al.,2018). This is due to the fact that their insights can considerably enhance the company's operations. BDA is required for market entry, although its effect on a company's performance is not always evident. Recent study has demonstrated that BDA can improve company outcomes in a variety of ways (Shamim et al.,2018). Many academic studies have determined that the Business Development Area (BDA) can be used to classify firms into high-performing and low-performing groupings (Mikalef, et al.,2019). According to research findings, BDA can assist businesses in enhancing supply chain resilience, market performance, and customer satisfaction. BDA helps to calm chaotic and complex markets by delivering data processing insights that enable quicker decisions and more effective operations (Bag et al.,2020). Using BDA experience in management can have multiple positive effects on an organization's operational efficiency, supply of value-added services, and money production. Thus, according to the hypothesis, BDA competencies are related with greater business outcomes.

The mediating role of SCR

Notwithstanding the difficulties brought on by supply chain disruptions, companies must find ways to keep running, fulfill customer demands, and make a profit. Supply chain disruptions are more challenging to handle than ever before as a result of globalization and the constantly-changing nature of the current business environment, making supply chain resilience (SCR) more important than ever. The importance of SCR in the present day has been stressed by academics like (Al-Hakimi et al.,2021). Firms must prioritize improving the resilience of their supply networks if they are to keep their competitive edge and ensure their long-term viability. Current research has focused on supply chain resilience (SCR), as (Ayoub & Abdallah,2019). In addition to being the impetus for this study, supply chain resilience (SCR) offers various benefits, such as optimizing resources, assuring business continuity, and reducing costs. Therefore, researchers should devote some time to investigating the potential economic benefits of Qazi et al.,2021; Li, et al.,2021), among others, have demonstrated a positive association between SCR and performance. Examples include the findings of Salam & Bajaba (2021), who found that SCR can increase financial liquidity and asset rotation by reducing the risk of shortages, offering dependable services, and keeping low inventory levels. In addition, SCR is an integral component of risk management since it enables businesses to recover to a suitable level of performance following a disruption and to strengthen their portfolio of competitive advantages (Dubey et al., 2020).

According to Dubey et al., organizations that spend in the development of their analytics skills are more likely to prioritize investments in visibility. This is due to the fact that the two capabilities strengthen and complement one another. According to Song et al. (2020) and Sabahi and Parast, increasing supply chain visibility is a critical predictor of supply chain resilience (SCR). According to Ayoub and Abdallah (2019), managing Big Data Analytics (BDA) competencies are critical drivers of supply chain preparation, vigilance, and agility. According to Redman's research, BDA talents can also help firms respond more quickly to disruptive occurrences and possibly contribute to disaster prevention (2014). Moreover, Singh and Singh (2019) discovered that BDA helps firms manage the

risks associated with their supply networks, making the organizations more resilient. The capacity to undertake business analytics is critical for assisting management decision-making, fostering supply chain transparency and innovation, and increasing business performance while lowering environmental uncertainty. Qazi et al., (2021) and Dubey et al. (2019), have all showed how using IT and Big Data Analytics (BDA) capabilities may promote supply chain agility and improve business performance. Moreover, Dubey et al. (2021) said that businesses might improve the resilience of their supply chains by utilizing data analytics (SCR). These results suggest that SCR mediates the connection between BDA skills and organizational outcomes. Thus, we shall give the subsequent hypotheses:

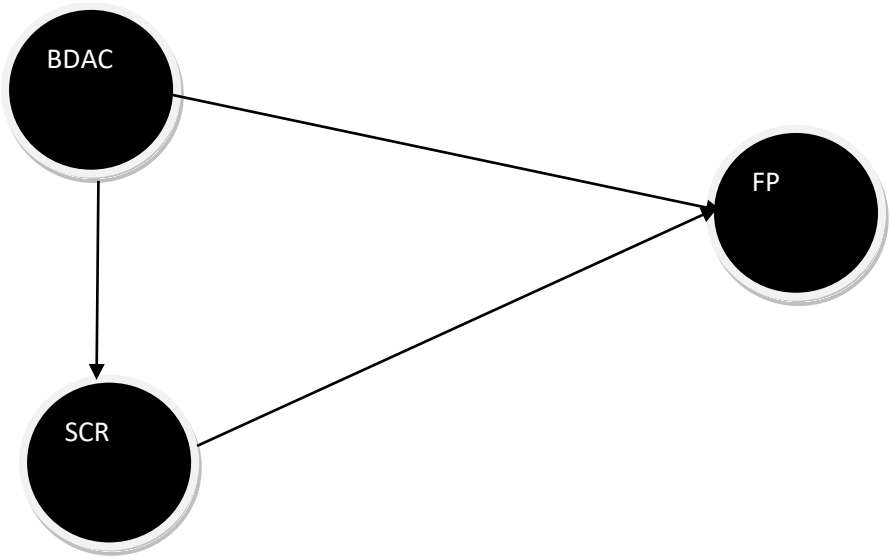

Figure 1.
Conceptual framework

RESEARCH METHODOLOGY

A survey approach was utilized to investigate the relationship between big data analytical capabilities and firm success, with supply chain performance acting as a mediator. A total of 300 questionnaires were distributed, and 265 responses were received, yielding an 88% response rate. The survey instrument consisted of three sections that assessed the respondent's ability to interpret vast amounts of data, the effectiveness of their supply chain, and the overall success of the company using a Likert scale ranging from 1 (strongly disagree) to 5 (totally agree) (strongly agree).

The data were analyzed using the program Smart PLS 3.3.3, and the technique was divided into two steps: first, the building of the measurement model, and secondly the construction of the structural model. The measurement model's validity and reliability were assessed using composite reliability (CR), average variance extracted (AVE), and confirmatory factor analysis (CFA). The outcomes of these assessments demonstrated that the model was valid and reliable enough to be used.

Following that, the structural model was examined to discover the relationship between big data analytics, supply chain performance, and business outcomes. Furthermore, the bootstrapping method was utilized to assess supply chain performance as a potential moderating factor. According to the study's findings, the ability to evaluate vast amounts of data had a substantial impact on the performance of supply chains as well as overall

business performance, both favorably and significantly. It was also established that the effectiveness of a supply chain functions as a bridge between a company's ability to evaluate huge volumes of data and its level of economic success.

The study's findings suggest that the ability to analyse massive volumes of data is critical to improving the efficiency of supply chains as well as the profitability of individual businesses. A better grasp of the process may be achieved by first appreciating the role that supply chain performance plays as a bridge between big data analytics and company performance. These findings have practical implications, especially for managers. They emphasize the importance of developing competencies for interpreting big data and improving supply chain performance in order to enhance the organization's success.

RESULTS

The technique, which included the measuring model was executed in two stages for the study. This study employed a two-step process that comprised both the measurement model and the structural model. Sem-pls was employed as the analytic framework for the structural model.

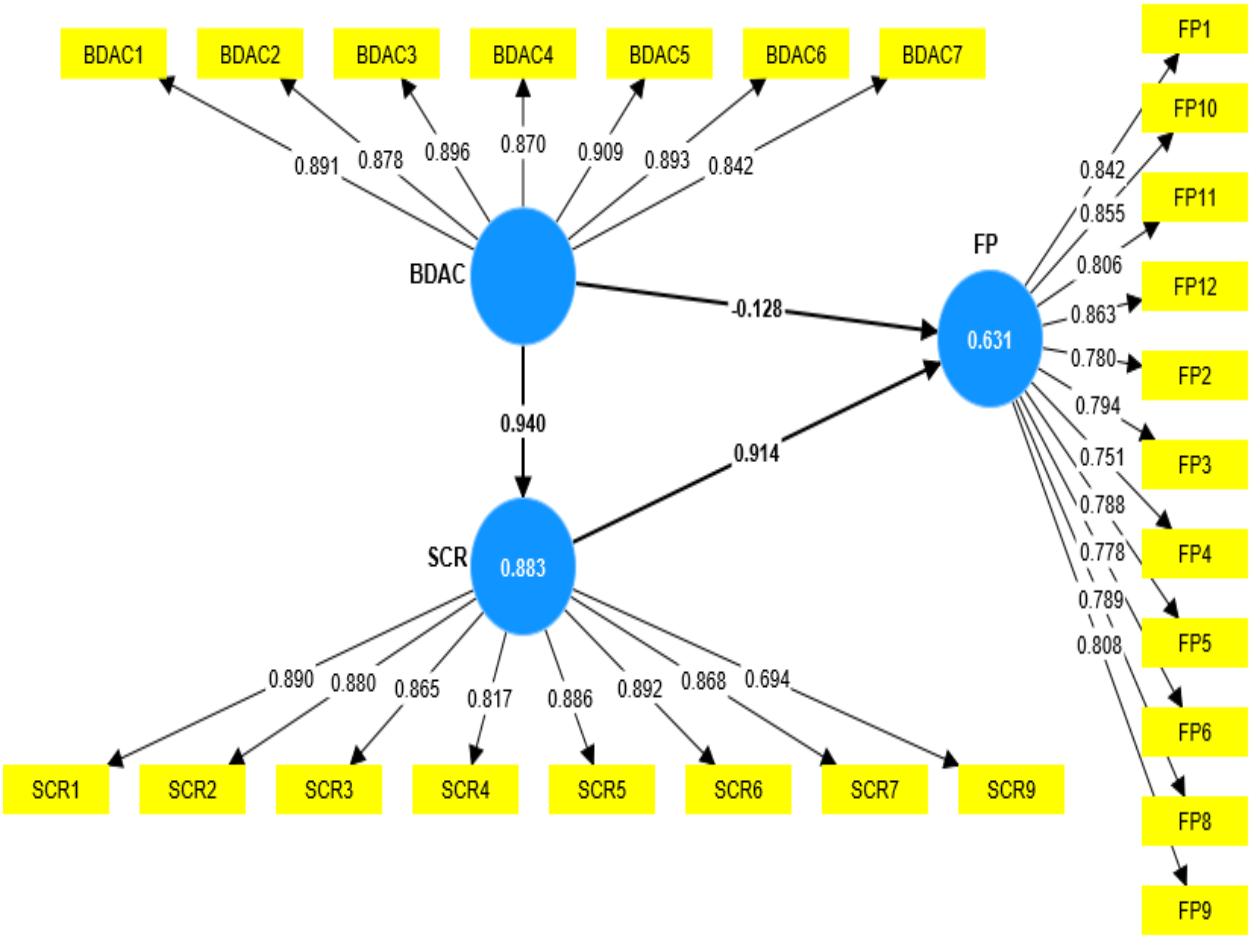

Figure 2.
Measurement Model

In partial least squares structural equation modeling, "outer loadings" refers to the regression coefficients indicating the relationship between latent variables and the observable variables corresponding to those latent variables (PLS-SEM).

Table 1. Outer Loadings

	BDAC	FP	SCR
BDAC1	0.891		
BDAC2	0.878		
BDAC3	0.896		
BDAC4	0.870		
BDAC5	0.909		
BDAC6	0.893		
BDAC7	0.842		
FP1		0.842	
FP10		0.855	
FP11		0.806	
FP12		0.863	
FP2		0.780	
FP3		0.794	
FP4		0.751	
FP5		0.788	
FP6		0.778	
FP8		0.789	
FP9		0.808	
SCR1			0.890
SCR2			0.880
SCR3			0.865
SCR4			0.817
SCR5			0.886
SCR6			0.892
SCR7			0.868
SCR9			0.694

While using Partial Least Squares (PLS) for Structural Equation Modeling (SEM), reliability analysis is essential since it assesses the consistency and stability of the measurement model (Hair et al., 2021). Reliability of the measurement model has a substantial effect on the outputs and quality of the model in PLS-SEM since it displays the connections between the observable variables and the hidden variables. PLS-SEM reliability is commonly evaluated using Composite Reliability (CR) and Average Variance Extracted (AVE). High levels of reliability are indicated by a CR that is near to 1. For a latent variable, the correlation coefficient is found by averaging its squared factor loadings (dos Santos & Cirillo, 2021). Similar to AVE, AVE can be used to quantify the reliability with which latent components in observable variables contribute to total variance. As reported by (Fornell & Larcker, 1981).

Table 2.

Reliability Analysis

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
BDAC	0.953	0.954	0.961	0.780
FP	0.946	0.948	0.953	0.649
SCR	0.945	0.946	0.954	0.725

Table 3 below demonstrates the discriminant validity of the present study.

Table 3.
Discriminant validity

	BDAC	FP	SCR
BDAC	0.883		
FP	0.731	0.805	
SCR	0.940	0.793	0.851

Discriminant validity is an important aspect of partial least squares structural equation modeling (PLS-SEM) and pertains to the evaluation of the independence of latent variables (Hair et al., 2021). It is feasible to strengthen the model's discriminant validity by evaluating the precision with which it measures and differentiates between various sorts of concepts. Researchers often employ either the Fornell-Larcker criterion or the cross-loadings approach when evaluating the discriminant validity of a PLS-SEM model (Abdulmuhsin et al.,2021; Asada et al.,2020; Basheer et al.,2020; Raoof et al.,2021; Nuseir et al.,2020; Yan et al.,2020). In contrast to the cross-loadings approach, which assesses the degree to which each indicator loads higher on its corresponding latent variable than on other latent variables in the model, the Fornell-Larcker criterion compares the square root of the AVE of each latent variable to the correlations between the latent variables. The fitness of the model is evaluated using both of these metrics. Assuming the model has adequate construct validity, the ability to obtain evidence of discriminant validity through both methods indicates that the latent variables can be distinguished.

Using the structural model, the hypotheses were tested. In this approach, all variables were regarded as latent entities.

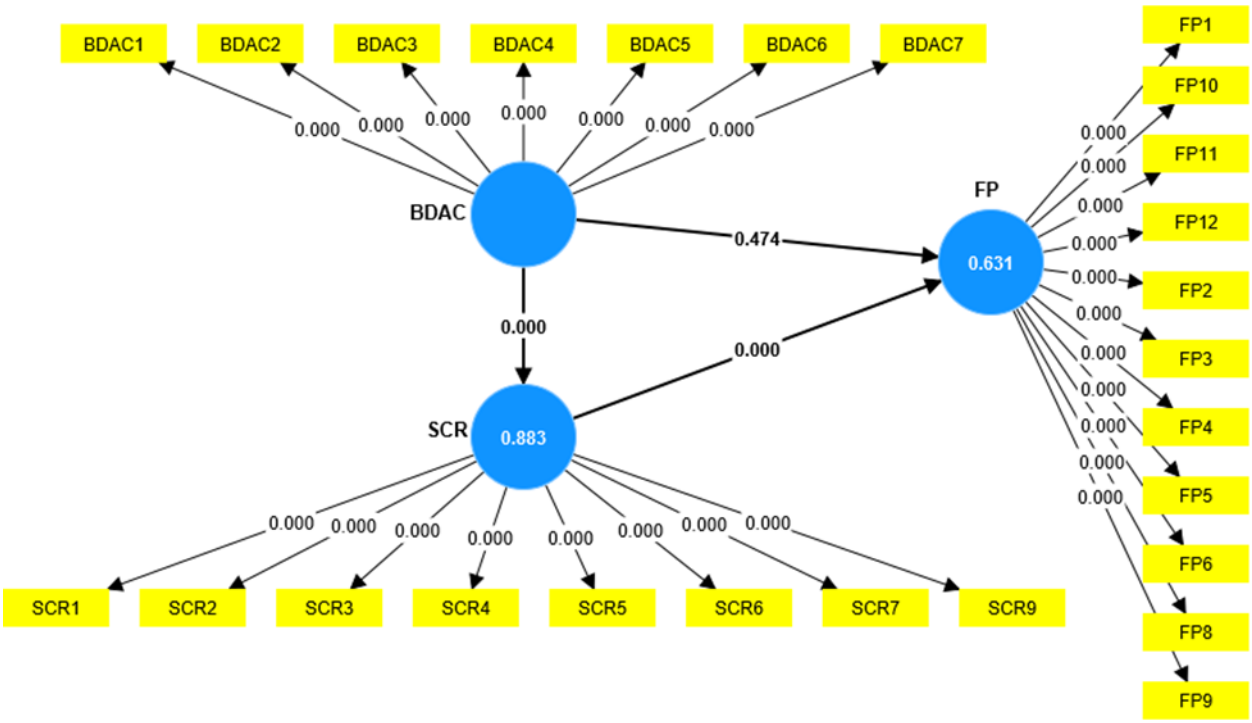

Figure 3.
Structural Model

Table 4.
Direct Results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
BDAC -> FP	0.731	0.733	0.057	12.857	0.000
BDAC -> SCR	0.940	0.940	0.011	88.297	0.000
SCR -> FP	0.914	0.916	0.152	5.995	0.000

Table 5.
Mediation Analysis

There is a statistically significant influence of the mediation path, as shown in Table 5 of the analysis results.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
BDAC -> SCR -> FP	0.859	0.862	0.147	5.842	0.000

DISCUSSION AND CONCLUSION

The goal of this research was to examine the mediating role played by supply chain performance between a firm's proficiency with big data analytics and its financial success. As shown in this research, there is a positive and statistically significant link between a company's performance and its capacity to evaluate massive data sets. These results provide credence to the theory that efficient data analysis plays a

significant role in a company's success. The results also show that the supply chain's efficiency mediates the connection between big data analytics and company success.

The results of the study make it clear that in order to boost supply chain efficiency, businesses need to develop their data-analysis skills. This study is consistent with previous research showing that companies can benefit from big data analysis by cutting costs in the supply chain, improving coordination, and pinpointing inefficient regions (Popovič, te al.,2018). The results of this research add to the growing body of evidence demonstrating the efficacy of using big data analytics to optimize supply chain performance. The results also reveal that organizations that can quickly and accurately analyse massive amounts of data have a better chance of gaining an advantage in the market. Improving supply chain efficiency, cutting costs, delighting customers, and cranking out more goods are all ways to gain a leg up on the competition (Müller & Vom Brocke,2018). Hence, businesses who put resources into improving their data analysis capabilities will undoubtedly see a return on their investment.

While supply chain efficiency may play a role in a business's success, the capacity of an enterprise to make sense of vast amounts of data may have a far greater bearing on its bottom line. The study's results highlight the significance of big data analytics in the modern corporate environment and the need of enhancing an organization's analytical capabilities to boost supply chain performance and overall performance (Ghasemaghaei, 2018). The ability to accurately analyze large amounts of data gives a corporation a distinct advantage over its rivals. So, in order to succeed in today's market, businesses need to allocate resources toward big data analytics. Beyond the impact of big data analytics on the improvement of business performance, further study should investigate additional factors that may operate as potential mediators between analytical talent and commercial success.

REFERENCES

Abdulmuhsin, A. A., Abdullah, H. A., & Basheer, M. F. (2021). How workplace bullying influences knowledge management processes: a developing country perspective. International Journal of Business and Systems Research, 15(3), 371-403.

Al-Hakimi, M. A., Borade, D. B., & Saleh, M. H. (2021). The mediating role of innovation between entrepreneurial orientation and supply chain resilience. Asia-Pacific Journal of Business Administration, 14(4), 592-616.

Ardito, L., Scuotto, V., Del Giudice, M., & Petruzzelli, A. M. (2019). A bibliometric analysis of research on Big Data analytics for business and management. Management Decision, 57(8), 1993-2009.

Arunachalam, D., Kumar, N., & Kawalek, J. P. (2018). Understanding big data analytics capabilities in supply chain management: Unravelling the issues, challenges and implications for practice. Transportation Research Part E: Logistics and Transportation Review, 114, 416-436.

Asada, A., Basheerb, M. F., Irfanc, M., Jiangd, J., & Tahir, R. (2020). Open-Innovation and knowledge management in Small and Medium-Sized Enterprises (SMEs): The role of external knowledge and internal innovation. Revista Argentina de Clínica Psicológica, 29(4), 80-90.

Aydiner, A. S., Tatoglu, E., Bayraktar, E., Zaim, S., & Delen, D. (2019). Business analytics and firm performance: The mediating role of business process performance. Journal of business research, 96, 228-237.

Ayoub, H. F., & Abdallah, A. B. (2019). The effect of supply chain agility on export performance: The mediating roles of supply chain responsiveness and innovativeness. Journal of Manufacturing Technology Management.

Bag, S., Wood, L. C., Xu, L., Dhamija, P., & Kayikci, Y. (2020). Big data analytics as an operational excellence approach to enhance sustainable supply chain performance. Resources, Conservation and Recycling, 153, 104559.

Basheer, M. F., Saleem, M., Hameed, W. U., & Hassan, M. M. (2021). Employee voice determinants and organizational innovation: Does the role of senior manager matter. Psychology and Education Journal, 58(3), 1624-1638.

Del Giudice, M., Chierici, R., Mazzucchelli, A., & Fiano, F. (2021). Supply chain management in the era of circular economy: the moderating effect of big data. The International Journal of Logistics Management, 32(2), 337-356.

dos Santos, P. M., & Cirillo, M. Â. (2021). Construction of the average variance extracted index for construct validation in structural equation models with adaptive regressions. Communications in Statistics-Simulation and Computation, 1-13.

Dubey, R., Gunasekaran, A., Childe, S. J., Blome, C., & Papadopoulos, T. (2019). Big data and predictive analytics and manufacturing performance: integrating institutional theory, resource-based view and big data culture. British Journal of Management, 30(2), 341-361.

El-Kassar, A. N., & Singh, S. K. (2019). Green innovation and organizational performance: The influence of big data and the moderating role of management commitment and HR practices. Technological forecasting and social change, 144, 483-498.

Feng, Y., Akram, R., Hieu, V. M., & Tien, N. H. (2021). The impact of corporate social responsibility on the sustainable financial performance of Italian firms: Mediating role of firm reputation. Economic Research-Ekonomska Istraživanja, 35(1), 4740-4758.

Ferraris, A., Mazzoleni, A., Devalle, A., & Couturier, J. (2019). Big data analytics capabilities and knowledge management: impact on firm performance. Management Decision, 57(8), 1923-1936.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.

Fosso Wamba, S., Gunasekaran, A., Papadopoulos, T., & Ngai, E. (2018). Big data analytics in logistics and supply chain management. The International Journal of Logistics Management, 29(2), 478-484.

Ghasemaghaei, M. (2018). Improving organizational performance through the use of big data. Journal of Computer Information Systems.

Grover, V., Chiang, R. H., Liang, T. P., & Zhang, D. (2018). Creating strategic business value from big data analytics: A research framework. Journal of management information systems, 35(2), 388-423.

Gupta, S., Qian, X., Bhushan, B., & Luo, Z. (2019). Role of cloud ERP and big data on firm performance: a dynamic capability view theory perspective. Management Decision, 57(8), 1857-1882.

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). Partial least squares structural equation modeling (PLS-SEM) using R: A workbook (p. 197). Springer Nature.

Jeble, S., Dubey, R., Childe, S. J., Papadopoulos, T., Roubaud, D., & Prakash, A. (2018). Impact of big data and predictive analytics capability on supply chain sustainability. The International Journal of Logistics Management, 29(2), 513-538.

Khin, S., & Ho, T. C. (2018). Digital technology, digital capability and organizational performance: A mediating role of digital innovation. International Journal of Innovation Science, 11(2), 177-195.

Li, G., Xue, J., Li, N., & Ivanov, D. (2021). Blockchain-supported business model design, supply chain resilience, and firm performance. Transportation Research Part E: Logistics and Transportation Review, 163, 102773.

Martinez-Sanchis, M., Navarrete, J., Cebolla, A., Molinari, G., Vara, M. D., Banos, R. M., & Herrero, R. (2021). Exploring the mediator role of self-critical rumination between emotion regulation and psychopathology: A validation study of the Self-Critical Rumination Scale (SCRS) in a Spanish-speaking sample. Personality and Individual Differences, 183, 111115.

Mikalef, P., Boura, M., Lekakos, G., & Krogstie, J. (2019). Big data analytics and firm performance: Findings from a mixed-method approach. Journal of Business Research, 98, 261-276.

Mikalef, P., Boura, M., Lekakos, G., & Krogstie, J. (2019). Big data analytics capabilities and innovation: the mediating role of dynamic capabilities and moderating effect of the environment. British Journal of Management, 30(2), 272-298.

Mikalef, P., Krogstie, J., Pappas, I. O., & Pavlou, P. (2020). Exploring the relationship between big data analytics capability and competitive performance: The mediating roles of dynamic and operational capabilities. Information & Management, 57(2), 103169.

Mikalef, P., Pappas, I. O., Krogstie, J., & Giannakos, M. (2018). Big data analytics capabilities: a systematic literature review and research agenda. Information Systems and e-Business Management, 16, 547-578.

Müller, O., Fay, M., & Vom Brocke, J. (2018). The effect of big data and analytics on firm performance: An econometric analysis considering industry characteristics. Journal of Management Information Systems, 35(2), 488-509.

Popovič, A., Hackney, R., Tassabehji, R., & Castelli, M. (2018). The impact of big data analytics on firms' high value business performance. Information Systems Frontiers, 20, 209-222.

Qazi, A. A., Appolloni, A., & Shaikh, A. R. (2021). Does the stakeholder's relationship affect supply chain resilience and organizational performance? Empirical evidence from the supply chain community of Pakistan. International Journal of Emerging Markets, (ahead-of-print).

Raoof, R., Basheer, M. F., Shabbir, J., Ghulam Hassan, S., & Jabeen, S. (2021). Enterprise resource planning, entrepreneurial orientation, and the performance of SMEs in a South Asian economy: The mediating role of organizational excellence. Cogent Business & Management, 8(1), 1973236.

Raut, R. D., Mangla, S. K., Narwane, V. S., Gardas, B. B., Priyadarshinee, P., & Narkhede, B. E. (2019). Linking big data analytics and operational sustainability practices for sustainable business management. Journal of cleaner production, 224, 10-24.

Salam, M. A., & Bajaba, S. (2021). The role of supply chain resilience and absorptive capacity in the relationship between marketing–supply chain management alignment and firm performance: a moderated-mediation analysis. Journal of Business & Industrial Marketing, (ahead-of-print).

Shamim, S., Zeng, J., Shariq, S. M., & Khan, Z. (2019). Role of big data management in enhancing big data decision-making capability and quality among Chinese firms: A dynamic capabilities view. Information & Management, 56(6), 103135.

Singh, S. K., & El-Kassar, A. N. (2019). Role of big data analytics in developing sustainable capabilities. Journal of cleaner production, 213, 1264-1273.

Song, I., Lee, H., Jeon, S. W., & Kim, D. H. (2020). Controlling catalytic selectivity mediated by stabilization of reactive intermediates in small-pore environments: A study of Mn/TiO2 in the NH3-SCR reaction. ACS Catalysis, 10(20), 12017-12030.

T. Nuseir, M., Basheer, M. F., & Aljumah, A. (2020). Antecedents of entrepreneurial intentions in smart city of Neom Saudi Arabia: Does the entrepreneurial education on artificial intelligence matter?. Cogent Business & Management, 7(1), 1825041.

Wamba, S. F., Dubey, R., Gunasekaran, A., & Akter, S. (2020). The performance effects of big data analytics and supply chain ambidexterity: The moderating effect of environmental dynamism. International Journal of Production Economics, 222, 107498.

Wang, Y., Kung, L., & Byrd, T. A. (2018). Big data analytics: Understanding its capabilities and potential benefits for healthcare organizations. Technological forecasting and social change, 126, 3-13.

Wang, Y., Kung, L., Wang, W. Y. C., & Cegielski, C. G. (2018). An integrated big data analytics-enabled transformation model: Application to health care. Information & Management, 55(1), 64-79.

Yan, R., Basheer, M. F., Irfan, M., & Rana, T. N. (2020). Role of psychological factors in employee well-being and employee performance: empirical evidence from Pakistan. Revista Argentina de Clínica Psicológica, 29(5), 638.