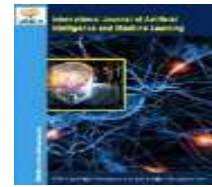




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Research Paper

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Business Analytics Maturity and Organizational Performance: An Empirical Study of Data-Driven Enterprises

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Abstract

This study aims to understand the relationship between Business Analytics Maturity and Data-Driven Decision-Making and Organizational Performance in data-driven enterprises. The research method used was the quantitative research approach with cross sectional research design; the 200 respondents were collected by using the structured questionnaire technique with a 5-point likert scale. "The study covered the Data Infrastructure, Data Governance, Analytical Capability, Data-Driven Organizational Culture, Business Analytics Maturity, Data-Driven Decision-Making and Organizational Performance". Descriptive statistics, multiple linear regressions and Pearson's correlation analysis were used to analyze data. The results show that both Data Infrastructure and Data Governance have a strong positive impact on Organizational Performance, accounting for 9.8% of the variance in data performance. The combined effect of Analytical Capability and Data-Driven Organizational Culture is greater and accounts for 54.6% of the variance in Organizational Performance. Analytical Capability comes out as a greater predictor. In addition, there is a significant positive correlation between Business Analytics Maturity and Data-Driven Decision-Making ($r = 0.608, p < 0.001$). All three hypotheses were accepted. The study concludes that organizations need integrated analytics capabilities, effective governance, robust infrastructure and a supportive data-driven culture to improve performance and strengthen evidence-based decision-making.

Keywords: "Business Analytics Maturity; Data-Driven Decision-Making; Organizational Performance; Data Infrastructure; Data Governance; Analytical Capability; Data-Driven Organizational Culture".

Introduction

Data-driven decision making has been embraced by organizations as it provides them with improved operational efficiency and performance outcomes and sustainable long-term growth success in the current business landscape (Bhujel, K., et.al., 2026). Through data analytics and statistical methods and technological tools business analytics functions as a vital strategic resource which guides organizational decision-making (Vidgen, R., Shaw, S., & Grant, D. B. 2017). Organizations use analytics to optimize their business operations and generate market insights that will help them satisfy their customers and create new products. Tools for analytics don't guarantee organizational success. There are key components of a successful analytics project: the organizational leaders who grasp the concept of analytics and drive it forward, and technological systems that enable analytics. (Appelbaum et al., 2017) According to the study, approximately half of the organizations met high data quality and governance standards, while 45% of them developed robust data infrastructure, showing that many companies have begun their journey towards analytics, but need to improve their system integration and analytics implementation (Aydiner et al., 2018).

The level of analytics maturity directly relates to actual performance results and is dependent on managerial perception. According to survey findings, over half of the managers strongly agreed that analytics contributes to better quality decisions and gives them a competitive edge (Popović et al., 2016). The positive perception by the management allows organizations to improve their decisions based on analytics insights and evidence-based management, thus reducing the uncertainty in the decision-making process. Even companies with modern technology and qualified employees can only utilize analytics to a certain extent when they are not actively engaged in their management (Aydiner, A. S., et.al., 2018; Rohrbeck & Kum, 2018). To assess the impact of analytics maturity on managerial perception and their firm success, the research team used descriptive statistics and regression analysis on 225 professionals from the United States who had never used analytics before (Ren et al., 2016). The research method helps scientists come up with general patterns and understand the impact of specific predictor variables on organisational outcomes (Nwankpa, J. K., & Datta, P. 2017).

The level of analytics maturity and actual performance results are connected by the essential factor of managerial perception. The results of the survey indicate that over half of managers strongly agree that analytics enhances decision quality and gives them a competitive advantage (Mikalef, P., et.al., 2019). Positive

managerial perception helps organisations make better decisions using insights from analytics and evidence-based management, reducing the uncertainty for managerial decision making. Even for companies with cutting-edge technology and highly qualified employees, not all of them are able to fully leverage analytics and thus can only gain limited benefits from analytics (Verma, S., et.al., 2018; Rohrbeck & Kum, 2018). Analysts focused on the research team collected data using a questionnaire-based survey of 225 professionals in the U.S. before analyzing the data for the relationships between analytics maturity and managerial perception on firm success with descriptive statistics and regression analysis (Caseiro, N., & Coelho, A. 2018). Through the research method, researchers can uncover general patterns and understand the impact of specific predictor variables on the results of the organization (Mikalef, P., et.al., 2019).

Business analytics maturity is an expansion of this view, as it focuses on the fact that there are significant differences in organizations' capacity to create and apply analytical value. There are five key aspects of analytics maturity, which may be broadly defined as the level of development of an organization's technology infrastructure, data quality and governance, analytical skills, human expertise, organizational processes, leadership support, and data-driven culture, all of which are necessary to systematically use analytics for business decision-making (Ain, N. U., et.al., 2025). So it's not just about the complexity of analytical software or the amount of data that an organisation has at its disposal. Rather, it is an indicator of the organization's evolution from simple reporting and disparate data management and usage patterns to a more cohesive, predictive, and strategically-driven approach to analytics. This capability perspective is in line with (Gupta and George 2016) who showed that the value of competition does not lie only in investing in big data technologies, but in building organizational capabilities that integrate technological and human capabilities.

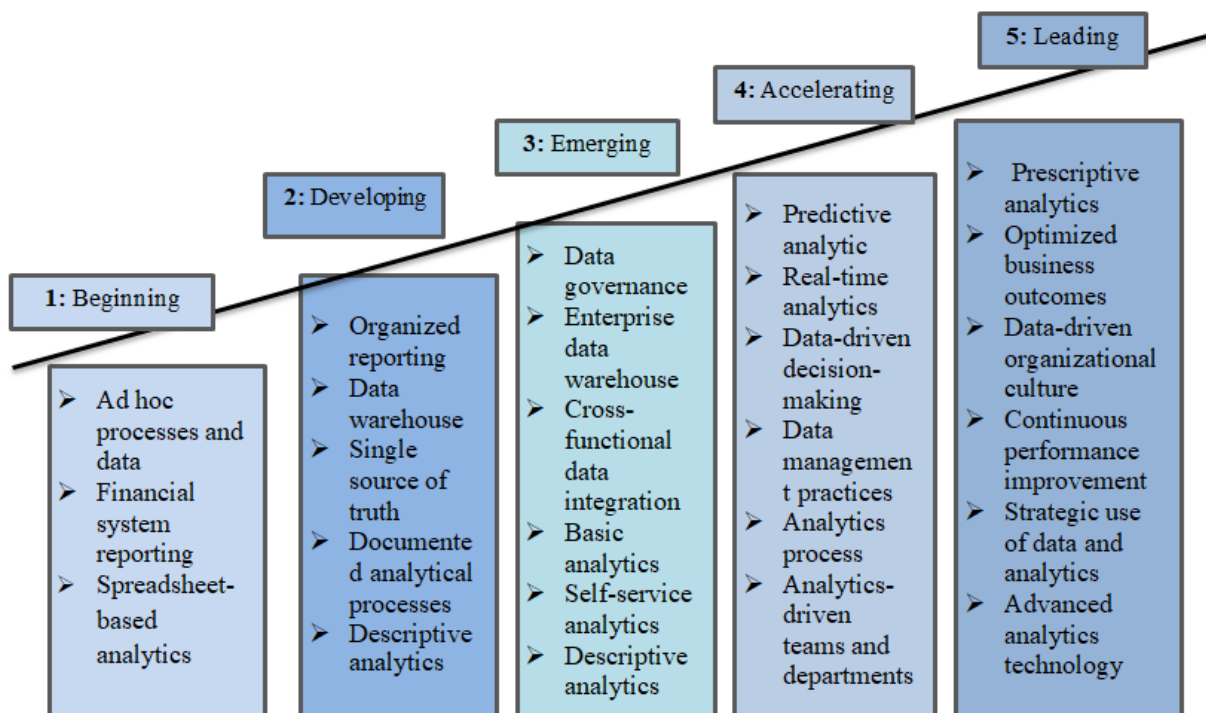


Figure 1: Five-Level Analytics Maturity Model

Source: Adapted from G2M Insights (2025)

The connection between analytics capability and organizational performance has been getting more attention in the information systems and strategic management literature. However, empirical evidence indicates that the organizations can reap performance benefits if they have the complementary resources and capabilities. For instance, (Gökalp et al. 2023) empirically proved that there is a relation between big data analytics capability and firm performance, highlighting the need for a combination of technology, organisation and human resources. Likewise, (Saravanabhavan, H., Riaz, S. & Das, S. 2021). Big data analytics capabilities are found to enhance organizational innovation by fostering its dynamic capabilities (Chiu, 2024). Their research shows that analytics' value is not just the technology but how it's used to develop analytical capability within an organization and innovative results.

Literature Review

Theme 1: Business Analytics Maturity and Organizational Capabilities

Business analytics maturity is the level of development and incorporation of technological, data-related, human and organizational assets in order to effectively use analytics in business activities. Newly published research starts to view analytics maturity as a multi-dimensional organizational capability, not just IT maturity in the use of analytics technologies. In a systematic review of the data and analytics maturity models, (Langer 2025) found that the dimensions of organization-oriented, technology-oriented and data-oriented are important factors in analytics maturity. Likewise, (Gökalp et al. 2023) have created the Data Analytics Maturity Assessment Framework (DAMAF) to compare and contrast organizations by their maturity levels and analytics attributes on the one hand and to highlight capability gaps and pathways for improvement on the other. Recent studies on measuring the Analytics maturity have also highlighted organizational, technological infrastructure, data management, Analytics capability, and governance as key aspects of Analytics maturity. The results of these studies suggest that there are more factors involved than the use of sophisticated analytical tools for achieving maturity, and that effective data management, governance, analytical skills and organizational processes are important factors that enable the systematic use of data.

The empirical literature also shows that the value of analytics capabilities to an organization is higher if it is complemented with other organizational resources (Oesterreich et al. 2022). Pointed out that business analytics resources and capabilities can add value to the business when they are properly embedded in the context of the business (Olabode et al. 2022) revealed that big data analytics capability is positively related to market performance, and organizational business models are related to the transformation of big data analytics capability into performance outcomes. In the same way, (Bhatti et al. 2022) demonstrated that analytics capabilities reinforce the digital platform and network capabilities and drive innovation and financial performance. (Huang et al. 2022) also found that the operational performance is enhanced through the capability of analytics technology if the analytical tools are well aligned to the organization's data requirements. They concluded that the analytics and sensing capabilities and a data-driven culture can positively impact operational performance, which, in turn, can improve these relationships (Wong and Ngai, 2023). Recently, Orero-Blat et al. (2025) reported that big data analytics capabilities can contribute to innovation and organizational performance in the presence of appropriate organizational conditions. Overall, the literature indicates that business analytics maturity is achieved by combining data infrastructure, data governance, analytics and data analytical capabilities, employee skills, organizational processes, and data-driven culture. Therefore, these organizational capabilities lack a basic understanding of them is essential for understanding how data-driven enterprises are able to make their analytics investments count in terms of better and sustainable organizational performance.

H1: "Data Infrastructure and Data Governance have a significant positive influence on Organizational Performance among data-driven enterprises".

Theme 2: Business Analytics Maturity and Data-Driven Decision-Making

Business analytics maturity is a factor that contributes to the shift from intuition-led approaches for organizational decision-making to systematic, evidence-based and data-driven approaches. As organizations become more sophisticated in their ability to analyze data, they can combine information from a variety of sources, analyze in real time, and give managers better data to evaluate options. (Li et al. 2022) have shown that big data analytics has a significant impact on the quality of organizational decisions, which means that analytics can enhance the information that is available to managers, and can be used to make better decisions. Likewise, (Abdellatif et al. 2024) demonstrated that the business analytics capabilities positively affect decision quality, as speed and comprehensiveness of the decision-making serve as a mechanism. This implies that an advanced analytics program provides managers with the ability to make better decisions, as well as assess options faster and more thoroughly. (Kurpiela and Teuteberg 2024) also emphasized the importance of business analytics in the field of strategic planning and decision-making, especially in addressing the growing complexity and uncertainty faced by organizations. The results show that the value of analytics maturity is not just technology and it relies on the organization having the ability to integrate analytical information into managerial decision processes.

Organizational culture, managerial skills and proper interpretation of analytical results play a crucial role in data-driven decision making. (Szukits and Móricz 2024) concluded that the conceptualization of an analytical culture is linked with the capability of data-based decision-making and that the top-management's support and quality of the data in view of the user are the factors that enable the formation of an analytical culture. However, (Szukits 2022; Malik & Singh, 2025) warned that the use of advanced analytics does not ensure truly data-driven decisions without taking into consideration conditions of the organization and management. It is also noteworthy that (Oliveira et al. 2022) showed that decision quality and decision regret are affected by

individual analytical orientation and analytical capabilities, which is why managerial analytical competencies are important. Moreover, (Hansen et al. 2024) demonstrated that fostering a common data-driven culture can make the institutionalization of data-driven decision making in organizations more possible. Additional evidence from (Orjatsalo et al. 2025) shows that top management is also becoming more reliant on business analytics for performance monitoring and for taking the right managerial actions. As a whole, all the literature indicates that business analytics maturity improves decision-making quality, speed, comprehensiveness and evidence-based managerial action, especially with high-quality data, analytical skills, management commitment and a strong data-driven culture. Therefore, data-driven decision making is an important lever that can foster analytics maturity and help positively influence organizational performance.

H2: "Analytical Capability and Data-Driven Organizational Culture have a significant positive influence on Organizational Performance among data-driven enterprises".

Theme 3: Business Analytics Maturity and Organizational Performance

Business analytics maturity has emerged as one of the key organizational capabilities that is needed for the effective transformation of data resources and analytical results into measurable improvements in organizational performance. As an organization grows in analytics maturity, they are able to incorporate analytics into their operational and strategic processes, helping them become more efficient, innovative, market responsive, and competitive. "Using a meta-analysis of 42 studies, (Ansari and Ghasemaghahi 2023) established that there is indeed significant relationship between big data analytics capability and firm performance, and that this relationship differs based on the type of performance investigated". (Garmaki et al 2023) also discovered that Big Data Analytics (BD) capability is a driver of firm performance via organizational learning, indicating that analytical capabilities generate value when the organization learns from and acts upon the analytical information. On the other hand, (Karaboga et al. 2023) showed that the big data analytics management capability positively impacts both operational and financial performance, and data-driven culture acts as an important mediating variable. The results suggest that analytics maturity doesn't only have technology efficiency implications, but also relies on the organization's capability to build complementary capabilities.

More recent research also shows that analytics maturity can impact organizational results and performance through agility, innovation and competitive results. Based on their study, (Kusbianto and Darmawan 2024) concluded that the capability of big data analytics positively affects the performance of a firm by affecting the agility of business processes, suggesting the ability of big data analytics to empower firms to better respond to shifting business conditions. Through the examination of 183 Spanish SMEs, (Orero-Blat et al. 2025) showed that only when the big data analytics capabilities are associated with innovation and suitable conditions in the organization can it positively influence organizational performance. In the same way, (Welbotha and van den Berg 2024) investigated tangible, human and intangible analytics capability and their correlation with the business performance of retailers in South Africa, strengthening the need for multiple components of analytics capability. (Kissi 2024) also demonstrated that big data analytics ability plays a role in business innovation especially with a collaborative culture. Overall, the literature shows that a more mature business analytics can improve business performance in terms of operational efficiency, organizational learning, agility, innovation, financial and market outcomes. Hence, organizational performance is one of the critical results that should be considered when assessing the value creation capabilities of investing in analytics capabilities and maturity.

H3: Business Analytics Maturity has a significant positive relationship with Data-Driven Decision-Making among data-driven enterprises.

Research Objectives

Objective 1: To examine the influence of Data Infrastructure and Data Governance on Organizational Performance among data-driven enterprises.

Objective 2: To determine the influence of Analytical Capability and Data-Driven Organizational Culture on Organizational Performance among data-driven enterprises.

Objective 3: "To examine the relationship between Business Analytics Maturity and Data-Driven Decision-Making among data-driven enterprises".

Research Methodology

The study uses an empirical research design with a quantitative approach, the type of research that uses a cross-sectional research design. "In this study, the study was designed in an empirical study and the method used was quantitative method, with the type of research design used in the present study was Cross Section Research, because the research aimed to explore the relationship between Business Analytics Maturity, Data-Driven Decision-Making and Organizational Performance of data-driven enterprises". The number of samples

in the study is 200. It will be conducted with organizations actively involved in using business analytics, business intelligence, data-management systems or other data-driven technologies in their organizational business activities. Managers, business analysts, data/IT professionals, department heads and workers who are part of the data decision-making process are ideal respondents. Participants will be selected by purposive sampling method from which appropriate number of participants will be selected based on their knowledge on their organization's analytics practices and performance. The primary data will be collected by a structured questionnaire that will be designed with scale of 5-point Likert ranging from Strongly Disagree (1) to Strongly Agree (5). "Data Infrastructure and Data Governance, Analytical Capability, Data-Driven Organizational Culture, Business Analytics Maturity, and Data-Driven Decision-Making and Organizational Performance will be assessed using the questionnaire". A sample of the respondents will be given a questionnaire to test for its clarity and relevance of questions prior to the final survey. Data collected will be analyzed in SPSS program. The descriptive statistics will be used to describe characteristics of the respondents and the major study variables in the analysis; while in the first part of the analysis, Cronbach's alpha will be used to check the internal consistency of the measurement scales. Pearson correlation analysis will be used to explore the relationship between Objectives 3: Business Analytics Maturity and Objective 4: Data Driven Decision Making. Multiple linear regression analysis will be used to determine the influence of Data Infrastructure on Organizational Performance and Analytical Capability and Data-Driven Organizational Culture on Organizational Performance for Objectives 1 and 2, respectively. The regression models will give you the R , R^2 , adjusted R^2 , ANOVA/F statistic, regression coefficients (β), t-values and significance levels (p-values). The hypotheses will be tested using a level of significance of 5% ($p < 0.05$). The methodology will then enable empirical evidence of significant differences in how the different dimensions of business analytics maturity contribute to organizational performance and data's use in decision making to be obtained.

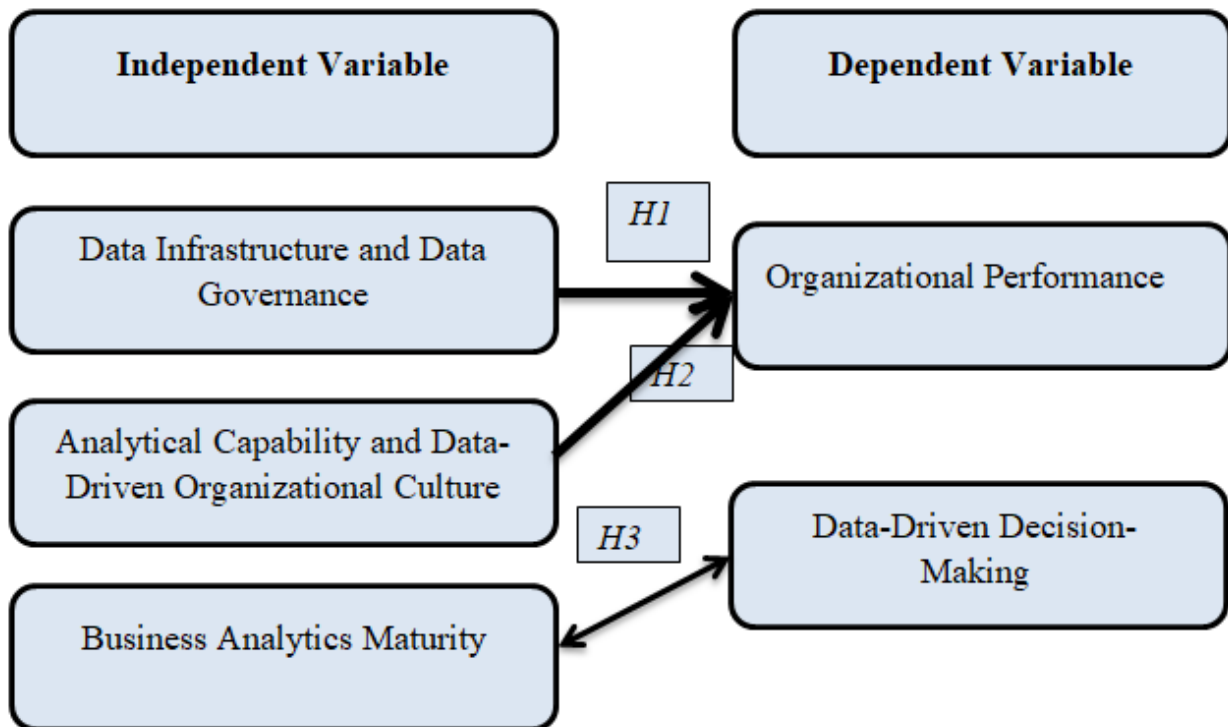


Figure 1: Conceptual Framework

Source: Author Own Collaboration

Results and Interpretation

Table 1: Demographic Characterstictis

S.NO.	Demographic Characterstictis		N	%
1	Gender	Male	111	55.5%
		Female	89	44.5%

2	Age Group	Less than 25 years	41	20.5%
		25–34 years	35	17.5%
		35–44 years	48	24.0%
		45–54 years	43	21.5%
		More than 55 years	33	16.5%
3	Educational Qualification	Undergraduate	45	22.5%
		Postgraduate	46	23.0%
		Ph.D.	69	34.5%
		Others	40	20.0%
4	Year of Experience	Less than 5 years	48	24.0%
		5–10 years	54	27.0%
		11–15 years	52	26.0%
		More than 15 Years	46	23.0%
5	Job Position	Entry-level	43	21.5%
		Middle-level	52	26.0%
		Senior-level	58	29.0%
		Top Management	47	23.5%
6	Department	Finance	45	22.5%
		Marketing	44	22.0%
		Operations	31	15.5%
		Analytics	39	19.5%
		Others	41	20.5%
7	Size of Organization	Small Enterprise	61	30.5%
		Medium Enterprise	62	31.0%
		Large Enterprise	77	38.5%

Table 1 shows the demographic details of 200 respondents who were part of the study of Business Analytics Maturity and Organizational Performance in data-driven organisations. As regards gender, the respondents were slightly more male (111) than female (89) representing a relatively balanced gender representation of the respondents with a slight dominance of males. As for age, the largest age group consisted of people aged between 35 and 44 (48 respondents; 24.0%), followed by those aged between 45 and 54 (43 respondents; 21.5%) and those under 25 (41 respondents; 20.5%). One quarter of the respondents (17.5%) were in the 25 to 34 age group, and over a fifth were over 55 years old (16.5%). As far as educational qualification is concerned, the respondents with Ph.D. in the educational qualification had the largest population with 69 respondents (34.5%), followed by those with postgraduates qualification with 46 respondents (23.0%) and undergraduates with 45 respondents (22.5%) and those with other qualification with 40 respondents (20.0%). In terms of years of experience, 54 (27.0%) respondents had 5–10 years of experience, 52 (26.0%) had 11–15 years of experience, 48 (24.0%) had less than 5 years of experience, and 46 (23.0%) had over 15 years of experience. The highest percentage (58, 29.0%) of the respondents was senior level, followed by middle level (52, 26.0%), top management (47, 23.5%) and entry level (43, 21.5%). With respect to department, 45 respondents (22.5%) were from Finance, 44 (22.0%) from Marketing, 41 (20.5%) from other departments, 39 (19.5%) from Analytics, and 31 (15.5%) from Operations. Now, as far as the organizational size, 77 respondents (38.5%) were from the large enterprises, 62 (31.0%) were from the medium enterprises and 61 (30.5%) from the small enterprises. The demographic profile shows that the sample of 200 participants is generally

representative across various age groups, education levels, duration of experience, job roles, departments, and organizational sizes, and is appropriate to study business analytics maturity and its linkages with organizational performance and data-driven decision-making at the organisations.

H1: Data Infrastructure and Data Governance have a significant positive influence on Organizational Performance among data-driven enterprises.

Table 2: Model Summary

Model Summary				
Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	.313a	.098	.089	3.82235
a. Predictors: (Constant), Data Governance, Data Infrastructure				

The influence of Data Infrastructure and Data Governance to Organizational Performance is presented in Table 2 below in multiple linear regression analysis. The results that are obtained are R-value of 0.313 which indicates that there is a positive relationship between the independent variables (Data Infrastructure, Data Governance) and dependent variables (Organizational Performance). Data Infrastructure and Data Governance explain 9.8% of the variability in Organizational Performance (R Square value). The remaining 90.2% of the difference in Organizational Performance could be due to other factors not studied in the current regression model. After removing the effects of the number of predictors and the size of the sample, the Adjusted R Square is 0.089, meaning that the model accounts for only about 8.9% of the variance in the data for Organizational Performance. The Std. The average distance between the predicted and actual Organizational Performance in regression model is Error of the Estimate 3.82235. The results suggest that overall; Data Infrastructure and Data Governance have a positive and relatively small combined explanatory power on Organizational Performance.

Table 3: ANOVA

ANOVAa						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	312.541	2	156.271	10.696	.000b
	Residual	2878.239	197	14.610		
	Total	3190.780	199			
a. Dependent Variable: Organizational Performance						
b. Predictors: (Constant), Data Governance, Data Infrastructure						

Table 3 displays the ANOVA of the Multiple Linear Regression model that revealed a combination of Data Infrastructure and Data Governance has an impact on Organizational Performance. There is a regression F-value of 10.696 with 2 and 197 degrees of freedom and a significance value of 0.000 ($p < 0.001$). The F value is less than the level of significance ($0.019 < 0.05$) indicating that the overall regression model is statistically significant. It means that Data Infrastructure – together with Data Governance – contribute significantly to the Organizational Performance of data-driven enterprises. The regression sum of squares is 312.541 and the residual sum of squares is 2878.239, which explains a large amount of variance in Organizational Performance by the predictors. Data Infrastructure, Data Governance in data driven enterprises have a positive effect on Organizational Performance, with a significant extent.

Table 4: Coefficientsa

Coefficientsa						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.529	1.580		6.031	.000
	Data Infrastructure	.218	.077	.209	2.840	.005
	Data Governance	.198	.088	.166	2.259	.025
a. Dependent Variable: Organizational Performance						

Table 4 shows the coefficient values of the multiple linear regression models for the analysis of individual effects of Data Infrastructure and Data Governance on Organizational Performance. The results indicate

positive and statistically significant influence effect of Data Infrastructure on Organizational Performance as presented by the results of $B = 0.218$, $\beta = 0.209$, $t = 2.840$ and $p = 0.005$. Data Infrastructure is one of the significant contributors to Organizational Performance because the p value is < 0.05 , which means that there is a positive correlation between Data Infrastructure and Organizational Performance, meaning that the increase in one variable (Data Infrastructure) is correlated to an increase in another (Organizational Performance). Likewise, Data Governance also influences positively the Organizational Performance with a value of $B = 0.198$, $\beta = 0.166$, $t = 2.259$ and $p = 0.025$. With $p < 0.05$, Data Governance makes a significant contribution to Organizational Performance. Looking at the standardized beta coefficients, the impact of Data Infrastructure on Organizational Performance is slightly higher than that of Data Governance, namely $\beta = 0.209$ and $\beta = 0.166$, respectively. The value for the dependent variable (Organizational Performance) when both independent variables are equal to zero is 9.529 and is the constant of the equation.

H2: Analytical Capability and Data-Driven Organizational Culture have a significant positive influence on Organizational Performance among data-driven enterprises.

Table 5: Model Summary

Model Summary				
Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.739a	.546	.541	2.71277
a. Predictors: (Constant), Data-Driven Organizational Culture, Analytical Capability				

The results of the multiple linear regression analysis of Analytical Capability and Data-Driven Organizational Culture on Organizational Performance are presented in Table 5 below. The data found value of R (coefficient of correlation) is $+0.739$, it means that the correlation between the combinations of independent variables and Organizational Performance is strong positive correlation. The level of R Square of 0.546 suggests that both Analytical Capability and Data-Driven Organizational Culture account for 54.6% of the variance in Organizational Performance, whereas the remaining 45.4% can be accounted for by factors other than the Analytical Capability and Data-Driven Organizational Culture variables. After using the number of predictors and sample size to adjust the R square, the adjusted R square value is 0.541 , which means that about 54.1% of the variance in Organizational Performance is explained by the model. The Std. Average difference between actual and predicting values of Organizational Performance is represented by the Error of the Estimate value which is 2.71277 . Overall, the model was very explanatory, suggesting that the Analytical Capability and Data-Driven Organizational Culture are indeed important predictors of Organizational Performance.

Table 6: ANOVAa

ANOVAa						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1741.034	2	870.517	118.291	.000b
	Residual	1449.746	197	7.359		
	Total	3190.780	199			
a. Dependent Variable: Organizational Performance						
b. Predictors: (Constant), Data-Driven Organizational Culture, Analytical Capability						

The ANOVA results in multiple linear regression model which looks at the combined effect of Analytical Capability and Data-Driven Organizational Culture on Organizational Performance are shown in Table 6. The obtained results from regression F value = 118.291 , $DF = 2$ and 197 , significance value $p = 0.000$ (< 0.001). If the value of the significance is less than the 0.05 level of significance then the overall regression model is statistically significant; which is true in this case. The combinations of Analytical Capability and Data-Driven Organizational Culture have a high impact on Organizational Performance within the data-driven organizations. The variance of the predictors in the regression (1741.034) and residual (1449.746) sum of squares explain a significant portion of the variance of Organizational Performance. Based on this, the second hypothesis: Analytical Capability and Data Driven Organizational Culture are significant positive influence on Organizational Performance among data driven enterprise" is accepted.

Table 7: Coefficientsa

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.625	1.057		2.483	.014
	Analytical Capability	.679	.049	.683	13.746	.000
	Data-Driven Organizational Culture	.154	.050	.155	3.113	.002
a. Dependent Variable: Organizational Performance						

Table 7 presents the results of multiple linear regressions (MLR) model and table 8 presents the results of analysis of Analytical Capability and Data-Driven Organizational Culture influence on Organizational Performance. The results indicate that Analytical Capability has positive and statistically significant effect on Organizational Performance with $B = 0.679$, $\beta = 0.683$, $t = 13.746$ and $p = 0.000$ ($p < 0.001$). The finding is that there is a considerable rise in Organizational Performance with the rise in Analytical Capability. Likewise with Data-Driven Organizational Culture, it is seen that the value of $B = 0.154$, $\beta = 0.155$, $t = 3.113$, and $p = 0.002$ which means that Data-Driven Organizational Culture has a positive and statistically significant effect on Organizational Performance. Both of the significance values are below 0.05 so both predictors are significant and they are positive. The standardized beta coefficients are compared, and the standardized beta for Analytical Capability ($\beta = 0.683$) is found to have a significantly greater impact on Organizational Performance than does Data-Driven Organizational Culture ($\beta = 0.155$). The constant is the average of Organizational Performance when both the predictors are set at zero.

H3: Business Analytics Maturity has a significant positive relationship with Data-Driven Decision-Making among data-driven enterprises.

Table 8: Descriptive Statistics

Descriptive Statistics			
	Mean	Std. Deviation	N
Business Analytics Maturity	16.9500	3.89143	200
Data-Driven Decision-Making	16.7800	3.64114	200

The descriptive statistics for Business Analytics Maturity and Data-Driven Decision-Making are shown in Table 8 based upon 200 responses. The mean score of the organizations that participated in the study is 16.9500 with a standard deviation of 3.89143, which is a decent level of Business Analytics Maturity, but there is some variation among the respondents' scores. The mean of Data-Driven Decision Making is 16.7800 with a SD of 3.64114 indicating that participants on average have a fairly high level of data-driven decision making in their organisation. The slight upward trend in the Business Analytics Maturity scores for Data-Driven Decision Making indicates a slightly more favorable attitude towards analytics maturity. Both variables have moderate variation in the responses, with standard deviations.

Table 9: Correlations

Correlations			
		Business Analytics Maturity	Data-Driven Decision-Making
Business Analytics Maturity	Pearson Correlation	1	.608**
	Sig. (2-tailed)		.000
	N	200	200
Data-Driven Decision-Making	Pearson Correlation	.608**	1
	Sig. (2-tailed)	.000	
	N	200	200
**. Correlation is significant at the 0.01 level (2-tailed).			

There is Pearson correlation analysis with correlation between Business Analytics Maturity and Data-Driven Decision-Making in data-driven enterprises as shown in Table 9. Pearson correlation coefficient indicates that there is a moderately high positive relationship between Business Analytics Maturity and Data-Driven

Decision-Making ($r=0.608$). The significance value is 0.000 ($p \text{ value} < 0.001$) which is less than the level of significance (0.05). This suggests that the two variables are correlated and the correlation is statistically significant. Thus, the correlation between the use of Business Analytics for Data-Driven Decision-Making with the maturity of Business Analytics for organizations which are already at an advanced level is high. Thus, organizations that have a high maturity level in Business Analytics also have a high maturity level in Data-Driven Decision-Making. There is a sufficient number of respondents (200) for the correlation. The correlation is positive and is statistically significant, therefore, H3: Business Analytics Maturity has a significant positive correlation with Data-Driven Decision-Making in data-driven enterprises is accepted.

Discussion

The present study demonstrates, empirically, that Business Analytics Maturity is an important organizational capability of data-driven enterprises (Alaskar, T. 2024). The results show that it is not just the data and analytics technologies that are useful to organizations, but the building complementary capabilities that allow organizations to turn data into knowledge that can be used to take action. The relatively high mean scores for Business Analytics Maturity ($M = 16.95$) and Data-Driven Decision-Making ($M = 16.78$) suggest that the respondents tended to feel that their organizations had developed analytics practices (Alfadhel, M. 2025). This aligns with the overall philosophy that analytics maturity is about more than just technology – it's about technical, organizational, and human aspects. Langer (2025) also believes that data and analytics maturity consists of several dimensions as it indicates that maturity is the sum of social and tech capabilities needed to get value from organisational data. The current results thus further validate the concept of analytics maturity as an organizational capability that enables the overall shift towards a data-driven management (Foroughi, B., et.al., 2025).

The results of the relationship between Data Infrastructure and Organizational Performance (Langer, B. 2025) indicate that there is a high positive correlation between these variables. The results on the relationship between Data Infrastructure and Organizational Performance (Langer, B. 2025) show positive high correlation between these two variables. 2025). The regression model yielded an R value of 0.313 and R^2 value of 0.098, indicating that the two variables together account for 9.8% of variance in Organizational Performance. ANOVA results showed that the overall model was statistically significant ($F = 10.696$, $p < 0.001$). For individual factors, Data Infrastructure had a positive and significant impact ($\beta = 0.209$; $p = 0.005$), and Data Governance showed a positive and significant impact ($\beta = 0.166$; $p = 0.025$). The results indicate that the right technological bases and suitable governance frameworks are essential prerequisites for organizations to achieve performance gains on the use of data. (Alaskar's 2024) latest study illustrates how organizational capabilities can shape the effective utilization of business analytics and underscores the role of knowledge and data-related capabilities in unlocking the value of business analytics. Similarly, the studies on business analytics and decision making performance indicate that data governance can be considered as one of the important antecedents of data analytics capability and data analytics capability, in turn, can be viewed as an antecedent for decision making performance (Orero-Blat, M., et.al., 2025).

For H2 there is more evidence of the importance of organizational capabilities for the production of performance outcomes. Analytical Capability and Data-Driven Organizational Culture yielded an R of 0.739 and a R^2 of 0.546, which means that the model accounts for 54.6% of the variance in Organizational Performance (Welbotha, D., & van den Berg, C. 2024). The results of ANOVA were statistically significant ($F = 118.291$, $p < 0.001$). Moreover, both Analytical Capability ($\beta = 0.683$, $p < 0.001$) and Data-Driven Organizational Culture ($\beta = 0.155$, $p = 0.002$) had significant positive effect on Organizational Performance. There was a significantly larger Beta coefficient for Analytical Capability suggesting that within the sample measured here, Analytical Capability was the better predictor of performance. This outcome is in line with recent empirical findings that indicate that the analytical capabilities of organizations can enhance their performance if the organizational conditions and skills exist to leverage analytical insights. For instance, (Welbotha and van den Berg 2024) studied tangibles, humans, and intangibles aspects of the analytics capability and their correlation with the organizational performance of retailers in South Africa. Similarly, (Orero-Blat et al. 2025) reported that Big Data Analytics Capabilities can help to improve organizational performances if they are accompanied by innovation and suitable organizational conditions (Welbotha, D. & van den Berg, C. 2024).

For H3, there is a positive significant relationship between the Business Analytics Maturity and Data-Driven Decision-Making (Welbotha, D., & van den Berg, C. 2024). The descriptive analysis showed mean scores of 16.95 (Business Analytics Maturity) and 16.78 (Data-Driven Decision Making) and a Pearson correlation coefficient of $r = 0.608$ ($p < 0.001$). This is a positive and moderately strong association, in that organizations that are more “analytics mature” are more likely to exhibit greater data-driven decision-making practices (Wu, D., et.al., 2024). This discovery aligns with more recent studies which focus on the analytical skills and how they enable improved organizational decision-making processes. For example, a study published in the Business Process

Management Journal (Szukits, Á., & Móricz, P. 2024) revealed that data governance and business analytics capabilities have a positive impact on decision-making performance, and big data literacy and analytics competency plays a significant role in this connection. Likewise, the study by Szukits and Móricz shows that an analytical culture correlates with the changes in the organizational decision-making processes and the incorporation of analytical information into the managerial processes. The present finding of an association between analytics maturity and the institutionalization of data-driven decision making is supported by these findings.

Overall, the three hypotheses offer complementary evidence for how value can be gained from analytics in the context of data-driven enterprises (Upadhyay, P., & Kumar, A. 2020). The first (H1) shows that the technological and governance foundations are significant, albeit relatively small, explaining parts of Organizational Performance, while the second (H2) reveals that Analytical Capability and Data-Driven Organizational Culture are much stronger predictors of Organizational Performance. The difference between the R^2 values of the two models—9.8% for H1 compared with 54.6% for H2 suggests that possessing infrastructure and governance mechanisms alone may not be sufficient to generate substantial organizational performance improvements (Baijens, J., et.al., 2022). Organizations will also need to build capabilities in terms of data analysis and the culture that enables them to transform data into actionable insights and organizational outcomes. This is consistent with recent research that highlights how analytics can be a source of innovation, agility and organizational performance if introduced and integrated into an appropriate organization context. The statistically positive correlation identified under H3 also suggests that the implementations of mature analytics practices are closely related with the use of data for organizational decision making. Hence, the overall results indicate that for a successful analytics transformation, it is not only necessary to invest in analytics technologies, but to adopt a holistic approach of the combined elements of infrastructure, governance, analytical capability and data-oriented organization culture, respectively (Szukits, Á., & Móricz, P. 2024).

Conclusion

“The present study findings show that Business Analytics Maturity is of great importance in improving the performance of the organization and Data-Driven Decision-Making of the data-driven enterprises”. All three hypotheses were accepted after analysing 200 respondents. Results show that Data Infrastructure and Data Governance jointly account for 9.8% of the variance of Organizational Performance, with the former having a strong positive impact and the latter being a medium strong positive impact on Organizational Performance for H1. There was also individual importance for Data Infrastructure and Data Governance, which were both positive, thus reinforcing the importance of the right technology foundations and governance mechanisms for better organisational results.

The results for H2 support the hypothesis and show the importance of Analytical Capability and Data-Driven Organizational Culture as determinants of Organizational Performance, explaining 54.6% of its variance. Data-Driven Organizational Culture was a strong positive predictor, and Analytical Capability also was a strong positive predictor. Additionally, H3 found a strong positive correlation between Business Analytics Maturity and Data-Driven Decision-Making ($r = 0.608$, $p < 0.001$), suggesting that the higher the level of maturity, the higher the level of using data in decision-making. In conclusion, the study shows that while technology and data infrastructure are important elements to get analytics to work, they are not enough; organizations need to build analytical expertise, governance, and a culture that focuses on data and evidence to reap the benefits of analytics.

Limitations of the Study

The study has certain limitations that should be considered while interpreting its findings. The first is, the study adopted a cross section research design technique, which only takes measure of the respondents' perception at one moment in time and does not check long-term causal connection. Second, the study relied on a relatively small sample of 200 respondents purposively selected, which might not be generalizable to all data driven enterprises. The study also used self-reported answers to their questionnaire, which can be affected by the perceptions or personal judgments of the respondents, or by response bias. In addition, the analysis was mostly centered around Data Infrastructure, Data Governance, Analytical Capability, Data-Driven Organizational Culture, Business Analytics Maturity, Data-Driven Decision-Making and Organizational Performance, although other factors related to the organization, technology and environment could affect the results.

Implication of the Study

The findings from the study should be considered in light of a few limitations. The first reason is that this study used a cross sectional research design, and only took snapshots of what respondents think at one time and did

not determine long term causal relationships. Secondly, the study was conducted on a relatively small purposive sample of 200 respondents; hence, the results of the study might not be representative for all data-driven enterprises. The study also included self-reported questionnaire answers which may be influenced by perceptions, personal judgments and/or response bias of the person answering the questionnaire. Moreover, this analysis was conducted mainly on the Data Infrastructure, Data Governance, Analytical Capability, Data-Driven Organizational Culture, Business Analytics Maturity, Data-Driven Decision-Making & Organizational Performance, with the possibility that other organisational, technological and environmental factors also influence the outcomes.

Future Research Directions

This study can be extended to larger and more geographically representative samples, and utilizing probability-based sampling methods to enhance generalizability of the study findings. Furthermore, the extension of longitudinal research could be a further component of the research design, offering an analysis of the evolution of Business Analytics Maturity over time, and potentially the impact on Organizational Performance and Data-Driven Decision-Making of improvements in Business Analytics capability over time. Other factors that could be included in future research include top-management support, employee analytics skills, digital transformation, organizational agility, innovation capability, data quality and technological readiness. Moreover, further studies could also utilize other analysis methods such as the mediation and moderation analysis, and/or the SEM and/or the PLS-SEM to examine more complex relationships between the variables of analytics maturity, organizational capability, decision-making and performance.

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