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RESEARCH ARTICLE

COMPARATIVE ANALYSIS OF THE IMPACTS OF BUSINESS ANALYTICS ON MARKET ADAPTATION OUTCOMES; MARKET LEADERSHIP, COMPETITIVENESS AND SUSTAINABILITY

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Abstract: The study embarked on a comparative assessment of the impacts of business analytics on market adaptation outcomes namely; market leadership, competitiveness, and sustainability. The eCommerce business in Nigeria is the case study and a sample of 40 firms was selected for the survey via both random and purposive sampling techniques. Questionnaires were used to collect information from the respondents and the data were analyzed using a quantitative approach. Findings from the analysis show that business analytics have the most significant impact on market leadership, followed by sustainability but, the effect on competitiveness was not significant. It implies that eCommerce businesses willing to become market leaders will need to consider more investments in business analytics. In addition, the high mortality rate among new firms in the eCommerce industry in Nigeria can be reduced with the use of business analytics.

Keywords: Market Leadership, Competitiveness, Sustainability, Business Analytics, eCommerce.

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INTRODUCTION

The dynamic nature of businesses across the globe nowadays has called for firms to make concerted efforts to attain leadership in the market, competitiveness, and sustainability in their various lines of business (Nilsson, 2019). According to Pappas et. al., 2018; Wang, 2021 all these three that is, leadership the market, competitiveness, in and sustainability are all products of market adaptation. Business analytics remains one of the strategies used by firms to achieve market adaptation but the effects of BA on market adaptation have been adjudged to be positive.

Nigeria market especially the eCommerce market is today more inclined to data and business analytics to update their operations to aid their adaptation more in the market (Omar *et. al.*, 2019; Stubbs, 2014) Despite this increase in awareness, the mortality rate of firms in the eCommerce industry continued to surge. The data from SMEDAN (2019) has it that before the fifth anniversary of many of the eCommerce businesses in Nigeria, almost 85% are already folded up mainly due to the inability to cope with the trends of the events in the market they newly found themselves.

The above scenario is the exact picture of the situation in the eCommerce industry and many other industries in Nigeria. Economic globalization has thrown up more dynamics in various markets and hence ability to move with the trends of events in the market you belong to counts in your achievement of market leadership status, competitiveness, and sustainability (Rana *et. al.*, 2022).

Although these three terms are somehow similar in that they are all outcomes of market adaptation but there, relationship with business analytics might be different therefore, to know the outcomes of market adaptation where business analytics affects most, there is the need for empirical analysis to ascertain this. It is believed that this will create more understanding of how businesses can utilize business analytics to achieve market adaption and enjoy more life span in the business.

The above remains the core objective of this paper which is an assessment of the comparative influence of business analytics on market leadership, competitiveness, and sustainability. The rest of the paper is divided into the literature, methodology, results, discussion, conclusion, and recommendations.

LITERATURE REVIEW

This aspect of the paper focuses on the literature review which includes the conceptual, empirical, and theoretical reviews

Dynamic Capability (DC) Theory

Dynamic capability (DC) theory Dynamic capability posits that dynamic capability helps businesses to align with the reality of internal and external conditions and sustain competitiveness (Helfat and Peteraf, 2009). Recently, many businesses have leveraged the RBV for improved business outcomes (Côrte-Real *et. al.*, 2017).

The RBV and its gaps have fostered the usage of other theories like DC and KBV. DC supports the KBV (Newey & Zahra, 2009). Numerous emerging studies support the DC model and its importance as an enabler for business success (Duan *et. al.*, 2020). Dynamic capabilities connect information processing with organisation enablers and resources (Côrte-Real *et. al.*, 2017).

Dynamic capabilities also study the influence of path dependencies such as the impact of previous investments and organizational learning on future actions in technology management (Altay et al., 2018; Kumar Gupta and Gupta, 2019)

In today's dynamic business environment, innovation and innovativeness have indispensable remained adaptation capabilities for businesses as an enabler for responding to $_{\mathrm{the}}$ emergence of new technologies and the development of the right competencies for market adaptation (Shan et. al., 2019).

The dynamic, volatile, and complex nature of the business environment that organizations operate in brings huge challenges that make organizations lose opportunities and competitive advantage, hence the need for a dynamic capability to present an adequate response (Baden-Fuller and Teece, 2020; Dias, 2013).

The dynamic capability theory stresses the need to achieve resource integration and the ability to be adaptable in a dynamic environment to mitigate possible limitations competencies from and knowledge challenges. Consequently, using technology, organization, and management resources and capabilities has the potential to support the firm in promoting creativity and innovativeness and sustaining competitive advantage (Shan et. al., 2019; Singh and Pawale, 2020).

Market Adaptation and Business Analytics

The reality of today's business environment, particularly that of e-commerce businesses, has shown a need to re-evaluate their business model based on the impact of the Covid-19 pandemic (Srinivas *et. al.*, 2020; Staegemann *et. al.*, 2020; Vidgen *et. al.*, 2020) including upgrading or re-aligning their digital infrastructure capabilities so they can be better efficient and be more flexible in adapting to the business environment and market changes.

Cirera and Muzi, 2020; Ekka, 2020; Seetharaman, 2020; Tim *et. al.*, 2020 in their work conclude that the survival of businesses in an era of global volatility and uncertainty heavily depends on adaptation capabilities and mechanisms that enable them to define appropriate responses to achieve market stability with zero, less, or minimal impact from the changes in the market

Market adaptation defines as an innovative approach that follows a robust delivery framework in delivering sustained value to customers while achieving positive market adaptation outcomes and remaining competitive (Fosso Wamba et al., 2020; Khan, 2020; Quang Trung et al., 2019; Van Den Bosch et al., 1999). Pollák et al., 2021posited a dual assumption of innovation and continuous change in the market as two basic and critical functions of business and areas where capabilities need to developed addressing be in market adaptation strategies. Deploying the right ebusiness tool and effective data gathering will support the development of insightful information about the market and enhance gaining competitive advantages (Muthukumar, 2020; Pollák et. al., 2021).

Organizations are often limited by the sophistication and adaptiveness of their technology infrastructure, that they struggle to respond effectively or adapt to the changes in their external environment, particularly customers and product fit (Vitari and Raguseo, 2020).

Customer satisfaction is an essential consideration in market adaptation, and a measure of how goods and services meet the expectations of the customers or users (Vitari and Raguseo, 2020), hence customer satisfaction is a major mediating variable in achieving market adaptation results.

In the study by Chatterjee *et. al.*, 2021, they found that data and tools acquisition propels the successes associated with the adoption of business analytics in driving business value and improving the performance of the organization. His findings showed further correlation and complementarity between the acquisition of business analytics capabilities and business process performance.

The leverage placed on data science and information technology and the adoption of analytics capabilities by organizations has helped them improve their understanding of and relationship with the external market and realized the advantages for insightful decision-making, how to adapt to the market and environmental challenges, business growth, and sustainability (Barlette & Baillette, 2020; Sharma *et. al.*, 2019).

Organizations must be strategic in defining their business model and ensure that such business model has resilient and adaptable capabilities to maintain its presence and continuity in the market to foster continuous competitive advantage in the market (Baden-Fuller & Teece, 2020; Rahmasari & Syafitri, 2018). Such a resilient business model will allow the organization to remain aligned with evolutions in the industry and business environment and provide a tool for enabling market leadership and data-driven performance (Ramadan *et. al.*, 2020).

Organizations look now at developing dynamic service analytics on the back of their analytics capabilities to data gather intelligence and explore and transform their service systems through innovative upgrades and adaptation in alignment with market requirements (Baden-Fuller & Teece, 2020). It is important to develop a resilient and dynamic data analytics technique that extracts dynamic data about the dynamic environment that ensures business an appropriate response for superior performance (Akter, Motamarri, et. al., 2020).

Existing literature gives credence to how service adaptation enhances trust relationship-sustainability between the organization and its customers (Motamarri et. al., 2017; Mou et. al., 2020) because services have become a major form of the business exchange or trade globally and information from data analytics makes the services system more robust, smarter and resilient to enhance dynamic adaptation, knowledge. and decision making under uncertainty (Akter, Gunasekaran, et. al., 2020).

Business Analytics is the leverage of technology in processing business data for generating insightful results for making strategic business decisions et. al., 2015; Gao, 2021; Yin & Fernandez, 2020) defines business analytics as deep utilisation of data and application of statistical methods that produces factual results for decision making. Business analytics presents a comprehensive method for managing, process, and analyzing data for actionable insights (Fosso Wamba et. *al*.. 2015)help organizations and to proactiveness towards changes based on market requirements (Isik et. al., 2013; Rahmah et al., 2020).

BA is known as a competitive differentiator (Jeble *et. al.*, 2018) Business analytics has been tested to improve customer information gathering, reduce customer acquisition costs, enhance product customization and improve the overall experience of the customers (*Chen* & Cheng, 2009; Dubey et. al., 2016; Hoang et. al., 2021; Wu et. al., 2020).

Côrte-Real et. al., 2017; Helfat & Peteraf, 2009 recommended that organizations should embrace dynamic capability nature to be better prepared for changes in the environment and achieve competitive advantage. This capability will further be strengthened by the robustness of the analytics capabilities available internally et. al., 2020).

Within the e-commerce ecosystem, the adoption and use of business analytics have increased in recent decades (Gao, 2021), but there are theoretical and practical gaps in the existing research that requires expanded development (Gao, 2021; Kumar & Kandoi, 2018; Odularu, 2020).

Business analytics supports e-commerce businesses with better wavs of data collection, processing, and management and more focused use of data and insights to improve customer acquisition, understand the behavior and sentiments of customers, pursue an effective product management effort, including product innovation and drive an effective market adaptation agenda et. al., 2020).

Gaps in the Literature

Based on existing literature and studies, it is evident that market leadership, competitiveness, and sustainability are among the outcomes when a business effectively and positively adapts to market changes. It appears that none of the existing studies have focused mainly on the impacts of business analytics on each of these market adaptation outcomes.

This help to fulfill the objectives which is the assessment of the impacts of business analytics on the outcomes of market adaptation namely; Market leadership, competitiveness, and sustainability. This further provides context to the research questions and hypotheses.

RESEARCH QUESTIONS

- What is the impact of business analytics on market leadership?
- Does business analytics have a significant effect on competitiveness?

• How significant is the impact of business analytics on sustainability?

HYPOTHESIS

 H_{0i} Business analytics does not have a significant impact on market leadership.

 H_{0ii} Business analytics does not have a significant effect on competitiveness.

 H_{0iii} Business analytics does not have a significant impact on sustainability.

The hypothesis above forms the major focus of this study and it will be tested during the analysis of the data collected from the field

METHODOLOGY

This aspect of the study discusses the research method used to investigate the comparative analysis of the impacts of business analytics on market adaptation.

Research Design

The study collects primary data from the target respondents using a questionnaire. Quantitative analysis is used to analyze the data and they are interpreted and discussed. This form the bases of inferences.

The Population of the Study

The study focuses on entrepreneurs in the eCommerce industry in Nigeria. It is worth noting that there are no available statistics on the number of entrepreneurs that are in the eCommerce industry in Nigeria.

Sampling and Sampling Techniques

A multistage sampling technique is adopted by the study. This comprises the usage of both probability and nonprobability sampling techniques The Purposive sampling technique was initially adopted to select 40 businesses that are in the eCommerce industry in the Lagos area of Nigeria (Akpa, Victoria O. *et. al.*, 2021).

The second stage of the sampling technique embraced random sampling techniques which enable the random representation of the businesses so that all of them will not be on the same line of businesses in that wise, equal probability was given to the respondents for being selected to partake in the survey. Generally, the 40 respondents randomly selected from were various companies so that their responses will not be lopsided.

Method of Data Collection

The major approach to the collection of data for the study is through a well-structured questionnaire. The questionnaire is divided into three main parts. Part A contains questions on bio-data and demographic information of the respondents, Part B includes questions on business analytics, and Part C contains questions on market adaptation which are subdivided into C(i) Market leadership, C(ii) competitiveness, and C(iii) Sustainability. Apart from the biodata which used categorical responses, other responses on the remaining part of the questionnaire used a five-Likert scale.

Validity and Reliability of the Research Instrument

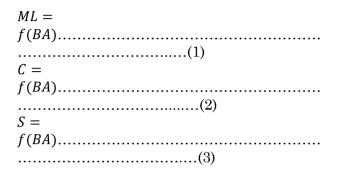
Both the validity and reliability tests were carried out on the research instrument. The Cronbach Alpha test was used for the reliability test which shows a value of 0.74. The validity test used the KMO Bartlet test which gave a value of 0.64. The two values indicate that the research instrument measure what they are supposed to measure and they also consistently measure them.

Method of Data Analysis

In the work of Chatterjee et al., 2021 who studied the role of business analytics in organizational performance, five salient features of business analytics were identified this is data and information collection on customers and services, Data and information analysis, Utilization of data analyzed for future planning, Policy and decision making following the results of the data analysis, Management of analyzed data for marketing, product development, and management, sales, finance, people and process, supply chain, for actionable insights. In addition, from the framework on market adaptation adopted from the studies of (Ashrafi et. al., 2019; Wang, 2021; Yin & Fernandez, 2020), it was obvious that market adaptation outcomes are market leadership, competitiveness, and sustainability.

To assess the comparative analysis of the impacts of business analytics on these three outcomes of market adaptation, three models will be developed and estimated. Furthermore, the components of business analytics are divided into five namely; Data collection (DC), Data analysis (DA), data analysis results utilization (DARU), Data analysis result application for decision making (DARADM), and Data analysis results management (DARM).

Three models describing the comparative analysis of the impact of business analytics on market adaptation outcomes namely, market leadership ML, competitiveness C, and sustainability S are expressed thus.



Where BA in Business and Analytics. It should be noted that from the initial discussion business analytics has been divided into 5 major areas. Consequently, equations (1) to (3) can be simplified further as

ML = f(DC, DA, DARU, DARADM, DARM)......(4) C = f(DC, DA, DARU, DARADM, DARM)......(5) S = f(DC, DA, DARU, DARADM, DARM)......(6)Equations 1 to 3 are expressed in lines

Equations 1 to 3 are expressed in linear regression form as follows

 $ML = \alpha_0 + \alpha_1 DC + \alpha_2 DA + \alpha_3 DARU + \alpha_4 DARADM + \alpha_5 DARM + \mu.....(7)$

 $C = \beta_0 + \beta_1 DC + \beta_2 DA + \beta_3 DARU + \beta_4 DARADM + \beta_5 DARM + \varepsilon.....(8)$

 $S = \sigma_0 + \sigma_1 DC + \sigma_2 DA + \sigma_3 DARU + \sigma_4 DARADM + \sigma_5 DARM + e.....(9)$

All variables are as defined above in the previous discussion. μ, ε and e are the error terms capturing the stochastic variable. α_i , β_i , and σ_i are parameter estimates for each of the three models

Estimation Technique

Quantitative analysis is embraced for the estimation of the equation. Particularly multiple regression approach is applied. Before the application, a test for heteroscedasticity is carried out to identify which of the model is suitable for linear regression OLS or weighted least square WLS regression.

RESULTS AND DISCUSSION

Table 1: Education qualification distribution

This aspect of the paper discusses the empirical result. It starts with the descriptive statistics of the bio-data information of the respondents

Biodata Analysis of Respondents

A total of 40 respondents are included in the survey and the major features of these respondents demographically are analyzed as follows.

Education	Frequency	Percent	Valid Percent	Cumulative Percent
HND	1	2.5	2.5	2.5
Graduate Degree	27	67.5	67.5	70.0
Post-Graduate Degree	12	30.0	30.0	100.0
Total	40	100.0	100.0	

Source: Authors computation, 2022

Results presented in table 1 shows that the majority of the respondents are highly educated at least about 67.5% of them are university graduate. In addition, nearly 30% also have postgraduate qualifications.

The implication of this is that the respondents are well educated to understand the questions in the research instrument and provide the needed answers to them.

Table 2: Years in service distribution

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 1 year	12	30.0	30.0	30.0
1-3 years	17	42.5	42.5	72.5
4-6 years	8	20.0	20.0	92.5
Above 10 years	3	7.5	7.5	100.0
Total	40	100.0	100.0	

Source: Authors computation, 2022

Table 2 indicated that the respondents have relatively long years of experience in their respective organizations. More than 40% of them have spent around 3 years while 20% have spent about 8 years. Some have even spent more than 10 years. The length of experience is important for the questions included in the research instrument

Table 3: Gender distribution

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	11	27.5	27.5	27.5
Male	29	72.5	72.5	100.0
Total	40	100.0	100.0	

Source: Authors computation, 2022

The percentage of males in the respondents' distribution is more than that of females. It is about 70% of the population. This might not be unconnected to the fact that the online

trading business is male dominant profession across the globe (Rodgers & Harris, 2003). The same situation is playing out in this study.

Table 4: Number of employees

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 100	28	70.0	70.0	70.0
100-499	4	10.0	10.0	80.0
500-999	1	2.5	2.5	82.5
1,000 -1,999	3	7.5	7.5	90.0

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2,000 - 2,999	2	5.0	5.0	95.0
3,000 - 3,999	1	2.5	2.5	97.5
4,000 - 4,999	1	2.5	2.5	100.0
Total	40	100.0	100.0	

Source: Authors computation, 2022

The results in table 4 show that many organizations with a workforce of less than 100. it shows that the idea that e-commerce business is more capital-intensive than laborintensive still holds sway in this study as well. More than 70% have a workforce that is less than 100. Very few of the organizations have employees in thousands.

Table 5: Nature of ownership

	Frequency	Percent	Valid	Cumulative Percent
			Percent	
100% Homegrown	22	55.0	55.0	55.0
Majorly Homegrown	9	22.5	22.5	77.5
100% Foreign	4	10.0	10.0	87.5
Majorly Foreign	5	12.5	12.5	100.0
Total	40	100.0	100.0	

Source: Authors computation, 2022

The belief that the eCommerce business in a foreign company dominated in Nigeria is refuted going by the result presented in table 5. Results from the descriptive statistics of the ownership structure of the organizations show that about 55% of the respondents are with 100 % homegrown ownership organizations.

Notwithstanding, about 23% have coownership with foreign investors. Very few of the organizations covered in the study have foreign ownership.

Other Attributes of the Organizations Involved in the Survey

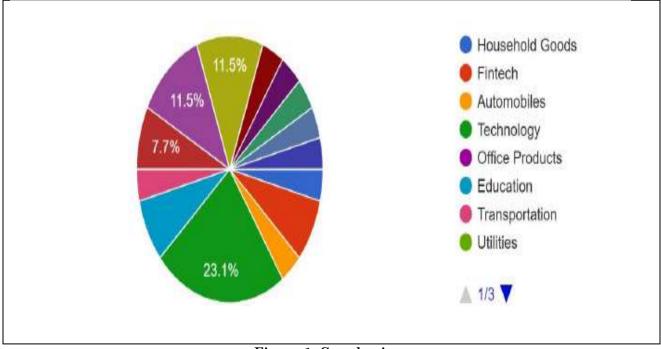
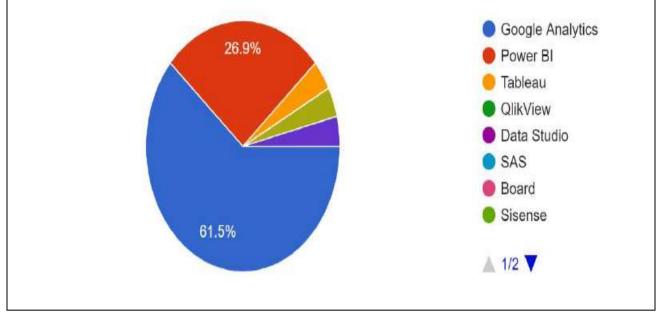


Figure 1: Core business

Source: Authors computation, 2022

Utilities and technology dominated the product line of the organization included in the study. Nearly 24% of the organizations are into technological base product lines notwithstanding both Fintech and utilities are also very common among the product line of the organizations. Office products are also included in the core business occupying about 11.5% of the total population of the organizations covered by the study.



Source: Authors computation, 2022

Since the focus of this study is examining the effect of Business analytics on the market adaption of the organizations, the nature of the tool used for carrying out business analytics is investigated and the result is in figure 2. The result shows that the majority of the organizations about 70% of them use google analytics for their eCommerce business. This further attests to the

dominance of google tools in the eCommerce industry across the globe (Gaur et al., 2016).

Comparative Analysis of the Effects of Business Analytics on Market Adaptation

The first step is to investigate the data on the variables for heteroscedasticity. This test is necessary to determine the best approach of linear regression to be used for the analysis.

	MODEL 1	MODEL 1 (Market		II	MODEL III Sustainability	
	Leadership)		Competitiveness			
	Chi Sq stat	Prob Chi Sq	Chi Sq stat	Prob Chi Sq	Chi Sq stat	Prob Chi Sq
hettest	0.29	0.5894	1.95	0.1623	7.90	0.0049
hettest, iid	0.26	0.6079	1.53	0.2161	7.21	0.0073
hettest, fstat	0.25	0.6188	1.51	0.2265	8.35	0.0063

Table 6: Test for heteroscedasticity

Source: Authors computation, 2022

The test for heteroscedasticity was conducted based on three methods. Comparatively, the models of market leadership and competitiveness show that the two models passed the test of heteroscedasticity that is the residual has constant variance hence OLS is suitable to estimate the two models. In addition, the third model of sustainability failed to pass the test as the probability shows that the null hypothesis of constant variance is rejected and the alternative hypothesis of no-constant variance accepted. Therefore, model 3 is better estimated using the weighted least square method of regression WLS.

Table 7: Regression results

	MODEL I Market	MODEL II	MODEL III Sustainability
	Leadership	Competitiveness	
Variables	Coefficients/SE	Coefficients/SE	Coefficients/SE
Data collection DC	0.0657926	.0306882	0.0728807
	(0.0818072)	(0.0831312)	(0.0396103)
Data Analysis DA	0.2407463**	0.0664446	0.0864197

	(0.095474)	(0.0970192)	(0.1057609)
Data Analysis Results	0.2765997**	0956612	0.1837704**
Utilization (DARU)	(0.0977496)	(.0993316)	(0.0853592)
Data Analysis Result	0.21292**	0083622	0.1057733**
Application for Decision	(0.0957055)	(.0972545)	(0.0126798)
Making (DARADM)			
Data Analysis Results	-0.167962	.1290668	-0.0349193
Management (DARM)	(0.1131472)	(.1149784)	(0.0873229)
Constant	3.427449**	3.613159	3.963591***
	(0.5055199)	(.5137015)	(0.5352103)
R Square	0.4756	0.0760	0.4063
F and (Prob)	12.64(0.0103)	0.56(0.7302)	4.65(0.0024)

Source: Authors computation, 2022

The results in Table 7 show the relationships between business analytics and three outcomes of market adaptation. Firstly, market leadership which is the first outcome of market adaptation considered by the study shows some positive and significant relationships with business analytics in some aspects. For instance, Data Analysis DA, Data Analysis Results Utilization (DARU), and Data Analysis Result Application for Decision Making (DARADM) all have the following coefficients 0.2407463, 0.2765997, and 0.21292respectively. All these coefficients are statistically significant at 5% and they are positive.

The implication of this is that all these three aspects of business analysis have a significant positive impact on market leadership. The R square is 0.4756 and this implies that business analytics account for about 47% of the systemic variation in market leadership. Therefore, business analytics is very important to the attainment of market leadership. However, the results further show that data collection might not have an impact on market leadership until it is analyzed, utilized, and applied to decisionmaking.

This when will impact positively and significantly on market leadership. The study by Chironga, M; Cunha et al., 2019; George et al., 2019; Williams & Olajide, 2020 also emphasize the importance of data analysis and application in market leadership. According to Akpa, Victoria O. et al., 2021; Day & Schoemaker, 2016, a leader in the market accommodates the application of results and findings from constant customer and market environment appraisal. Further, this gives the organization a hedge over others in the market. The appraisal of information on the market environment and

customer is one of the most important aspects of business analytics. This shows that findings from this study are not in isolation as some previous studies have also obtained similar results.

The second outcome of market adaptation focused on in this study is competitiveness. This is captured under model 2 as presented in table 7. The result shows that business analytics might not have a significant impact on competitiveness as shown from the results on the table. All the segments of business analytics failed to have a significant impact on competitiveness.

The R square value is 0.07 and the F statistics test which is the test of the overall significance of the model showed that the estimated model is not statistically significant. The implication is that business analytics has а weak impact on competitiveness as an outcome of market adaptation.

The third and last outcome of market adaptation considered in the study issustainability. The results are presented under model 3 in table 7. The result indicates that to some extent business analytics have a significant impact on sustainability. For instance, both Data Analysis Results Utilization (DARU) and Data Analysis Result Application for Decision Making (DARADM) with coefficients 0.1837704 and 0 .1057733 respectively are statistically significant at 5% thus implying that they both \mathbf{exert} а significant impact on sustainability.

It follows that the utilization of the data analyzed and application of the same to decision-making can help the business to sustain for long period. In other words, sustainability is promoted when data analyzed are utilized and applied to decisionmaking by the organization. The result is also similar to that of ... who also concluded from his study that stability is more guaranteed for an organization if it engages in information gathering and analysis.

According to Nilsson, 2019; Olagunju et al., 2020; Sanyala & Hisamb, 2019, many organizations that have folded up especially in the eCommerce industry in recent times are as a result of a lack of capacity to adapt to dynamism in the market and one of the major ways to adapt to dynamism in the market is by engaging in information gathering and analysis around the market. The R square is 0.4063 and the sustainability model passed the F test which is the test of overall significance.

CONCLUSION AND RECOMMENDATIONS

This study has examined comparatively the impacts of business analytics on the three outcomes of market adaptation namely market leadership, competitiveness, and sustainability. The results have shown that there are variations in the relative impacts of business analytics on the three outcomes of market adaptation.

It can be concluded from the findings of this study that business analytics impact more on market leadership and sustainability than competitiveness. The implication is that an organization that wants to attain leadership status among its peers in the market will need to engage in business analytics very well. The way that when data is analyzed, it must be utilized and applied to decisionmaking, with this such organization will be able to attain leadership status in the market.

In addition, an organization that is ready to of stand the test time and eniov sustainability in the market will have to engage in business analytics by making sure that the results of data analysis are utilized and also applied to decision-making in the organization. These gestures will keep the company abreast of changes in the market and allows it to adjust to changes that can make it to be self-sustaining for a long period. Finally, firms especially the ones in the eCommerce industry in Nigeria are advised to embrace business analytics as a

tool to attain market leadership and achieve sustainability in the market. This will go a long way to show how well the business is adapting to the market generally.

REFERENCES

- 1. Akpa, Victoria O., Asikhia, Olalekan U. and Okusanva. Adedovin. 0. (2021)."Leadership styles and organisational performance in Nigeria: Qualitative perspective", International Journal of Engineering and Management Research, Vol. No. 46-53. 11 1. pp. https://doi.org/10.31033/ijemr.11.1.7
- 2. Akter, S., Gunasekaran, A., Wamba, S. F., Babu, M. M. and Hani, U. (2020), "Reshaping competitive advantages with analytics capabilities in service systems", Technological Forecasting and Social pp.120180. Change. Vol. 159.https://doi.org/10.1016/j.techfore.2020.1201 80
- Akter, S., Motamarri, S., Hani, U., Shams, 3. R., Fernando, M., Mohiuddin Babu, M. and Ning Shen, K. (2020), "Building dynamic service analytics capabilities for the digital marketplace", Journal of Business Research, Vol. 118, 177 pp. 188.https://doi.org/10.1016/j.jbusres.2020.06 .016
- Altay, N., Gunasekaran, A., Dubey, R. and Childe, S. J. (2018), "Agility and resilience as antecedents of supply chain performance under moderating effects of organizational culture within the humanitarian setting: A dynamic capability view", Production Planning and Control, Vol. 29 No.14, pp. 1158-1174. https://doi.org/10.1080/09537287.2018.1542 174
- Ashrafi, A., Zare Ravasan, A., Trkman, P. and Afshari, S. (2019), "The role of business analytics capabilities in bolstering firms' agility and performance. International Journal of Information Management, Vol. 47, pp. 1-15. https://doi.org/10.1016/j.ijinfomgt.2018.12.0 05
- Baden-Fuller, C. and Teece, D. J. (2020), "Market sensing, dynamic capability, and competitive dynamics", Industrial Marketing Management, Vol. 89, pp. 105-106. https://doi.org/10.1016/j.indmarman.2019.1

1.008

Available online at: www.managementjournal.info

- Barlette, Y. and Baillette, P. (2020), "Big data analytics in turbulent contexts: Towards organizational change for enhanced agility", Production Planning and Control, pp.1-18. https://doi.org/10.1080/09537287.2020.1810 755
- Chatterjee, S., Rana, N. P. and Dwivedi, Y. K. (2021), "How does business analytics contribute to organisational performance and business value? A resource-based view", Information Technology and People, 0-33. https://doi.org/10.1108/ITP-08-2020-0603
- Chen, C. W. D. and Cheng, C. Y. J. (2009), 9. "Understanding consumer intention in online shopping: A respecification and validation of the DeLone and McLean model". **Behaviour** and Information Technology, Vol. 28No. 4, pp.335-345.https://doi.org/10.1080/01449290701850 111
- Chironga, M., Cunha, L., De Grandis, H., 10. Kuyoro, M., Chironga, M. M., De Grandis, H. and Zouaoui, Y., Edwin van Bommel and David Edelman McKinsey & Company, Central Bank of Kenya, Chironga, M. M., Desvaux, G., Leke, A., Murati, A., Skau, O., Taraporevala, Z., & Marc Lien, Sebastian Sjöberg, V. and R. (2019).Adapting_To_Digital_Consumer_Decision_ Journeys in Banking. Mckinsey Report. August 2014.6 https://www.mckinsey.com/~/media/McKins ey/Featured Insights/Middle East and Africa/Leadership lessons from Africas trailblazers/Leadership-lessons-from-Africastrailblazers.ashx%0Ahttp://www.mckinsey.
 - com/insights/financial_services/adapting_to _digital_con
- Cirera, X. and Muzi, S. (2020), "Measuring innovation using firm-level surveys: Evidence from developing countries", Research Policy, Vol. 49 No.3, pp. 103912. https://doi.org/10.1016/j.respol.2019.103912
- Côrte-Real, N., Oliveira, T. and Ruivo, P. (2017), "Assessing business value of Big Data Analytics in European firms", Journal of Business Research, Vol. 70, pp. 379-390. https://doi.org/10.1016/j.jbusres.2016.08.011
- Day, G. S. and Schoemaker, P.J.H. (2016), "Adapting to fast-changing markets and technologies. California Management Review", Vol. 58 No. 4, pp. 59-77.

https://doi.org/10.1525/cmr.2016.58.4.59"

- 14. De Luca, L. M., Herhausen, D., Troilo, G. and Rossi, A. (2020), "How and when do big data investments pay off? The role of marketing affordances and service innovation", Journal of the Academy of Marketing Science. https://doi.org/10.1007/s11747-020-00739-x
- 15. Dias, A. (2013), A Measure of Market Sensing Capabilities. European Marketing Academy 2013 Conference, 42.
- 16. Duan, Y., Cao, G. and Edwards, J. S. (2020),"Understanding the impact of business analytics on innovation" of European Journal Operational Research. Vol. 281.No. 3. https://doi.org/10.1016/j.ejor.2018.06.021
- Dubey, R., Gunasekaran, A., Childe, S. J., Wamba, S. F. and Papadopoulos, T. (2016), "The impact of big data on world-class sustainable manufacturing", International Journal of Advanced Manufacturing Technology, Vol. 84 No. 1-4, pp. 631-645. https://doi.org/10.1007/s00170-015-7674-1
- 18. Ekka, S. (2020), "Big data analytics tools and applications for modern business world", ICESC, 587-592.
- Enyinna, U.K., C, N.N. (2020), "Transatlantic Journal of Multidisciplinary Research. Vol. 2 No. 1, pp.57–80. https://doi.org/10.5281/zenodo.3948156
- 20. Fosso Wamba, S., Akter, S., Edwards, A., Chopin, G., Gnanzou, D. (2015), "How "big data" can make big impact: Findings from a systematic review and a longitudinal case study", International Journal of Production Economics, Vol. 165, pp. 234-246.

https://doi.org/10.1016/j.ijpe.2014.12.031

- 21. Fosso Wamba, S., Queiroz, M. M., Wu, L. and Sivarajah, U. (2020), "Big data analytics-enabled sensing capability and organizational outcomes: assessing the mediating effects of business analytics culture", Annals of Operations Research. https://doi.org/10.1007/s10479-020-03812-4
- 22. Gao, Y. (2021), Big Data Analysis on Ecommerce Platform. Proceedings of the 2021 International Conference on Economic Development and Business Culture (ICEDBC 2021), 182(Icedbc), 191-195.

https://doi.org/10.2991/aebmr.k.210712.03 1

- Gaur, L., Singh, G., Jeyta and Kumar, S. (2016), Google Analytics: A Tool to make websites more Robust. ACM International Conference Proceeding Series, 04-05-Marc. https://doi.org/10.1145/2905055.2905251
- Y., 24. George, G., Lin, Sharma, N., Chakrabarti, A., Balas, V. E., Peng, S.-L., Hoang, L., Suseendran, S. G., Balaganesh, D., Duan, Y., Cao, G., Edwards, J. S., Jahan, S., Alrajawy, I., Abid, S., Martin, P., Reviews, C., Alkatheeri, Y., Ameen, A., Bhaumik, A. (2019), "The impact of the leadership and strategy management on organizational excellence: moderating role of organizational culture", Journal of Advanced Research in Dynamical and Control Systems, Vol.11 No. 2, pp. 748-759. https://doi.org/10.24874/IJQR15.02-19
- 25. Helfat, C. E. and Peteraf, M. A. (2009), "Understanding dynamic capabilities: Progress along a developmental path", Strategic Organization, Vol.7 No.1, pp. 91-102.

https://doi.org/10.1177/1476127008100133

- Hoang, G. T., Luu, T. T., Nguyen, T. T., Le, L. P. and Pham, N. T. (2021), "Entrepreneurial Leadership and product innovation in construction SMEs. Academy of Management Proceedings, Vol.1, pp.10361.
- Işik, Ö., Jones, M. C. and Sidorova, A. (2013), "Business intelligence success: The roles of BI capabilities and decision environments. Information and Management, Vol. 50 No.1, pp. 13-23. https://doi.org/10.1016/j.im.2012.12.001
- 28. Jeble, S., Dubey, R., Childe, S. J., Papadopoulos, T., Roubaud, D. and Prakash, A. (2018), "Impact of big data and predictive analytics capability on supply chain sustainability", The International Journal of Logistics Management, Vol. 29 No. 2, pp. 513-538.
- 29. Khan, H. (2020), "Is marketing agility important for emerging market firms in advanced markets?", International Business Review, Vol. 29 No. 5, pp. 101733. https://doi.org/10.1016/j.ibusrev.2020.10173 3
- 30. Kumar Gupta, A and Gupta, N. (2019), "A Dynamic capability view of adaptability on new product success launch", Vol. 8 No.1,

pp. 38-44.

- Kumar, S. and Kandoi, M. (2018), "Product Adaptation in International Market. 5(4), 232–236.
- 32. Motamarri, S., Akter, S. and Yanamandram, V. (2017), "Does big data analytics influence frontline employees in services marketing?", Business Process Management Journal, Vol. 23 No.3, pp. 623-644. https://doi.org/10.1108/BPMJ-12-2015-0182
 - 33. Mou, J., Cui, Y. and Kurcz, K. (2020), "Trust, risk and alternative website quality in B-buyer acceptance of crossborder e-commerce", Journal of Global Information Management, Vol. 28 No. 1, pp. 167–188. https://doi.org/10.4018/JGIM.2020010109
 - 34. Muthukumar, T. (2020), "Business analytics: current state & challenges", Indian Journal of Scientific Research, Vol. 10 No.2, pp. 143. https://doi.org/10.32606/ijsr.v10.i2.00022
 - Newey, L. R. and Zahra, S. A. (2009), "The evolving firm: how dynamic and operating capabilities interact to enable entrepreneurship", British Journal of Management, Vol. 20, pp. S81-S100.
 - Nilsson, V. (2019), Business Analytics Maturity Model - An adaptation to the ecommerce industry.
 - 37. Odularu, G. (2020), Strategic policy options for bracing Nigeria for the future of trade. In Strategic Policy Options for Bracing Nigeria for the Future of Trade. https://doi.org/10.1007/978-3-030-34552-5
 - Olagunju, T., Oyebode, O., & Orji, R. (2020), Exploring Key Issues Affecting African Mobile eCommerce Applications Using Sentiment and Thematic Analysis. IEEE Access, 8, 114475–114486. https://doi.org/10.1109/ACCESS.2020.300 0093
 - 39. Omar, Y. M., Minoufekr, M. and Plapper, "Business Ρ. (2019).analytics in manufacturing: Current trends. challenges and pathway to market leadership", Operations Research Perspectives, Vol. 6, pp. 100127.
 - 40. Pappas, I. O., Mikalef, P., Giannakos, M. N., Krogstie, J. and Lekakos, G. (2018), Big data and business analytics ecosystems: paving the way towards

digital transformation and sustainable societies. Information Systems and E-Business Management, Vol.1 6 No.3, pp. 479-491. https://doi.org/10.1007/s10257-018-0377-z

- 41. Pollák, F., Konečný, M., and Ščeulovs, D. 49. (2021), Innovations in the management of E-Commerce: Analysis of customer interactions during the COVID-19 pandemic. sustainability, Vol. 13 No. 14, pp. 7986. https://doi.org/10.3390/su13147986 50
- 42. Quang Trung, D., Yoke Beng, A. N. and Bhaumik, A. (2019), "The environmental dynamism, dynamic capabilities and marketing innovation of fertiliser firms in Vietnam", International Journal of Innovation, Creativity and Change, Vol. 8 No. 2, pp.116-128.
- 43. Rahmah, M., Ameen, A., Isaac, O., El, A.-E., Abu-Elhassan, S. and Khalifa, G. S. A. (2020), "Effect of organizational innovation (Product innovation, process innovation, and administrative innovation) on organizational learning. TEST Engineering & Management, Vol. 82 No. 2, pp. 12101-12113.
- 44. Rahmasari, A. and Syafitri, W. (2018), "Traditional market Adaptation Srategy in addresing" 63-67.
- 45. Ramadan, M., Shuqqo, H., Qtaishat, L., Asmar, H., and Salah, B. (2020), "Sustainable competitive advantage driven by big data analytics and innovation", Applied Sciences (Switzerland), Vol. 10 No.19, pp. 6784. https://doi.org/10.3390/app10196784
- 46. Rana, N. P., Chatterjee, S., Dwivedi, Y. K., and Akter, S. (2022), "Understanding dark side of artificial intelligence (AI) integrated business analytics: Assessing firm's operational inefficiency and competitiveness", European Journal of Information Systems, Vol. 31 No. 3, pp. 364-387.
- 47. Rodgers, S., & Harris, M. A. (2003), "Gender and E-commerce: An exploratory study", Journal of Advertising Research, Vol. 43 No. 3, pp. 322-329. https://doi.org/10.1017/S0021849903030307
- 48. Sanyala, S. and Hisamb, M. W. (2019), Factors Affecting Customer Satisfaction with Ecommerce Websites - An Omani Perspective. Proceeding of 2019

International Conference on Digitization: Landscaping Artificial Intelligence, ICD 2019, pp. 232–236. https://doi.org/10.1109/ICD47981.2019.9105 780

- Schaffner, M. (2020), Industry 4.0 Flexibility of Technical Infonomics by Knowledge Management. In German and Chinese Contributions to Digitalization (pp. 39–46). Springer.
- 50. Seetharaman, P. (2020), "Business models shifts: Impact of Covid-19", International Journal of Information Management, Vol. 54, pp. 1-4. https://doi.org/10.1016/j.ijinfomgt.2020.10 2173
- 51.Shan, S., Luo, Y., Zhou, Y., and Wei, Y. (2019). "Big data analysis adaptation and enterprises' competitive advantages: The perspective of dynamic capability and theories", resource-based Technology Analysis and Strategic Management, Vol. No. 4, 406-420. 31 pp. https://doi.org/10.1080/09537325.2018.151 6866
- Sharma, N., Chakrabarti, A. and Balas, V. E. (2019), Data management, analytics and innovation. Proceedings of ICDMAI, 1.
- Singh, A., and Pawale, M. S. (2020), "Redesigning strategies in a turbulent business environment", Studies in Indian Place Names, Vol. 40 No.74), pp.1593-1601.
- Srinivas, S., Gill, A. Q. and Roach, T. (2020), "Analytics-enabled adaptive business architecture modeling", Vol. 23, pp. 23-43.
- 55. Staegemann, D., Volk, M., Daase, C. and Turowski. K. (2020),"Discussing between Relations dynamic business environments and big data analytics", Systems Informatics Complex and Modeling Quarterly, Vol. 23, pp. 58-82.
- 56. Stubbs, E. (2014), Big data, big innovation: enabling competitive differentiation through business analytics. John Wiley & Sons.
- 57. Tim, Y., Hallikainen, P., Pan, S. L. and Tamm, T. (2020), "Actualizing business analytics for organizational transformation: A case study of Rovio Entertainment", European Journal of

642-655.

https://doi.org/10.1016/j.ejor.2018.11.074

- 58.Van Den Bosch, F. A. J., Volberda, H. W. 62. and De Boer, M. (1999), "Coevolution of firm absorptive capacity and knowledge environment: Organizational forms and combinative capabilities. organization Vol.10 No.5. pp. 551-568. science. https://doi.org/10.1287/orsc.10.5.551
- 59. Vidgen, R., Hindle, G., and Randolph, I. (2020)."Exploring the ethical implications of business analytics with a business ethics canvas", European Journal of Operational Research, Vol. 281No. 3. 491-501. pp. https://doi.org/10.1016/j.ejor.2019.04.036
- 60. Vitari, C. and Raguseo, E. (2020), "Big data analytics business value and firm performance: linking with environmental context''', International Journal of Production Research, Vol. 58 No. 18, pp. 5456-5476. https://doi.org/10.1080/00207543.2019.1660

822

Operational Research, Vol. 281 No.3, pp. 61. Wang, Z. (2021), Business Analysis on Sustainable Competitive Advantages, E3S Web of Conferences, 235, 3009.

- Williams, O. C., & Olajide, F. (2020), "A the Technological Approach towards measurement of enterprise agility. Iberian Conference on Information Systems and Technologies, CISTI, 2020-June, 24-27. https://doi.org/10.23919/CISTI49556.2020.9 141142
- 63. Wu, L., Liu, H., & Su, K. (2020), "Exploring the dual effect of effectuation on new product development speed and quality", Journal of Business Research, No.135), Vol.106 82-93. pp. https://doi.org/10.1016/j.jbusres.2019.09.0 16
- Yin, J. and Fernandez, V. (2020), "A 64. systematic review on business analytics", Journal of Industrial Engineering and Management, Vol.13 No.2, pp. 283-295. https://doi.org/10.3926/jiem.3030