Business Intelligence and Organizational Effectiveness in The Malaysian Newspaper Industry: Mediating Effect of Market Capitalization and Operational Agility

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ABSTRACT

The Malaysian newspaper industry faces prospective challenges due to growing competition, technological advancements, and changing customer demand. To ensure sustainability, Malaysian companies must focus on business intelligence to overcome these challenges. Therefore, this study aims to examine the impact of business intelligence on organizational effectiveness, and the mediational role of market capitalization agility and operational adjustment agility in the relationship between business intelligence and organizational effectiveness in the context of the Malaysian newspaper industry. This study collected data from the 504 managerial-level employees working in the Malaysian newspaper industry. The outcomes showed business intelligence plays a crucial role in enhancing organizational effectiveness, as managers can enhance performance by ensuring market capitalization and operational adjustment agility. Operational adjustment and market capitalization agility ultimately enhance the organization's overall effectiveness. Further, the findings of this study provide practical implications to policymakers and suggest that policymakers should enhance managers' agility by providing comprehensive training on business intelligence systems, enhancing their knowledge of the business environment, and promoting change-responsiveness.

Keywords: Business intelligence, market capitalization agility, operational adjustment agility, organizational effectiveness, Malaysian newspaper industry

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1. INTRODUCTION

Growing competition, prospective challenges, technological advancements, and changing customer demand are the underlying reasons for the declining trends in the newspaper industry worldwide. However, newspaper publishers have been hesitant to recognize a new and distinct type of competition, and most of them have failed to respond quickly enough to take advantage of the new opportunities that the internet has provided, even though they are still trying (Boczkowski, 2004). At the same time, the newspaper industry in Malaysia has been considered a sunset industry. The downward trend in the newspaper industry has continued throughout time, and newspaper circulation has decreased even more during the pandemic (Supadiyanto, 2020). Hence, it is high time for Malaysian newspaper companies to emphasize the organization's effectiveness to ensure sustainability. However, the issue that comes to the fore is how Malaysian newspaper companies will cope with this difficult situation and ensure the organization's effectiveness.

Previous studies investigated the role of leadership styles, culture, and communication method (Nazarian et al., 2022, Zlatković, 2018); HR practices (Murthy and Kumar 2021); learning culture, employee competencies (Potnuru et al., 2021); knowledge management enablers, knowledge management process (Bezzina et al., 2020); technological capabilities, resilience capabilities, environmental dynamism, and competitive intensity (Bustinza et al., 2019); employee involvement climate (Bosak et al., 2017); environmental scanning, competitor orientation, and forward-looking information (Phornlaphatrachakorn and Na-kalasindhu, 2020); employee ambidexterity, employee agility (Herlina et al., 2021); resilience capabilities, environmental dynamism, competitive intensity, and technological capabilities (Bustinza et al., 2019) to enhance organizational effectiveness.

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Moreover, contemporary studies have highlighted the role of business intelligence in enhancing organizational effectiveness (Arefin et al., 2015; Rayat and Kelidbari, 2017). According to Arefin et al. (2015), business intelligence systems constantly focus on seeking fresh information by utilizing all data collection channels, using information system mechanisms to synthesize and transform the data into meaningful information, monitoring all operational processes, and tracking root causes of issues. Also, different researchers argued that organizational agility enhances the organization's effectiveness (Holbeche, 2018). Agility is the ability to respond, adapt swiftly, and grow in a changing environment (Holbeche, 2018). Market capitalization agility involves the organization's capacity to make changes to respond rapidly to capitalize on the market's demand. Operational adjustment agility is the firm's capacity to adjust its internal business environment to cope with changes in the market (Krotov et al., 2015).

However, the role of business intelligence and organizational agility in enhancing organizational effectiveness has yet to be explored. Moreover, the combined effects of business intelligence, organizational agility, and organizational effectiveness proposed a unique model. In addition, through the lens of resource-based view (RBV) theory, the present study explains the association between business intelligence and organizational effectiveness. Most importantly, the Malaysian newspaper industry's unique proposed model (Figure 1) has never been explored. Accordingly, this study proposes business intelligence and organizational agility as influencing factors to enhance the effectiveness of the organizations operating in the Malaysian newspaper industry. This study proposes organizational effectiveness as a dependent variable, business intelligence as an independent variable, and organizational agility, namely market capitalization agility and operational adjustment agility as mediating variables. Hence, the uniqueness of this research is to investigate the role of business intelligence in enhancing organizational effectiveness, the mediating effect of market capitalization agility, and operational adjustment agility in the relationship between business intelligence and organizational effectiveness. The outcomes of this study will contribute to the fields of organizational behavior and strategic management. Also, the knowledge gained from this study will provide a new business model and guideline for policymakers in the newspaper industry in Malaysia and similar countries to adopt and cope with the recent changes and demands of customers.

The paper is structured in the following ways. First, the structure of the paper is as follows. First, the proposed conceptual model and hypotheses were discussed in the theoretical and empirical sections (Figure 1). Subsequently, the research findings and statistical methods are discussed. The following sections contain the study's discussions and implications. Finally, before the conclusion, this paper highlighted limitations and future directions.

2. LITERATURE REVIEW

2.1 Resource-based View Theory

The RBV is popularly known as the resource-based view of the firm. According to Barney (1991), a firm's competitive advantage may originate from four characteristics of its resources: value, uniqueness, imperfect imitability, and non-substitutability. An organization can design and/or implement approaches to increase its efficiency and effectiveness with the support of valuable resources, which also assist it in taking advantage of opportunities and/or avoiding threats to the environment (Capron and Hulland, 1999). The present study used RBV theory to provide justifications to examine the strategic fit of resources such as business intelligence and capabilities such as organizational agility: market capitalization agility and operational adjustment agility of the Malaysian newspaper industry to enhance the effectiveness of the organization operating in the Malaysian newspaper industry.

2.2 Business Intelligence in the Malaysian Newspaper Industry

Business intelligence is known as an accumulation of ideas, techniques, and procedures for enhancing business judgment by utilizing data from various sources, applying knowledge, and making assumptions to generate an accurate representation of business dynamics (Brackett, 1999). Tarek et al. (2016) mentioned that business intelligence is a voluntary process that enables an organization to scan and absorb data from an uncertain situation to uncover potential possibilities while reducing the risks brought on by uncertainty. In addition, Wieder and Ossimitz (2015) described business intelligence as an analytical process that collects scattered data from organizations and marketplaces and turns it into information and knowledge about an organization's goals, positions, and prospects. Therefore, Chee et al. (2009) highlighted that business intelligence can be divided into three main categories: process, technology, and product. In Table 1, the three primary criteria are described in further detail.

Table 1. Three Approaches of Business Intelligence

Approach	Managerial/Process	Technological	Product		
Definition	Focus on the process of gathering data from internal and external sources and analyzing them to generate	Focus on the tools and technologies that allow the recording, recovery, manipulation, and analysis	Describe BI as the emerging result/product of in-depth analysis of detailed business data as well as analysis		
	relevant information for improved decision-making.	of information.	practices using BI tools.		
Author	Whitehorn & Whitehorn (1999); Moss & Atre (2003); Turban et al. (2008); Markarian, Brobst & Bedell (2007)	Moss & Atre (2003); Moss & Hoberman (2004); Adelman & Moss (2000); Turban et al. (2008); * Note: The definition of Moss & Hoberman (2005) spans across both process and technological approaches.	Chang et al. (2006); Gangadharan & Swami (2004); Kulkarni & King, (1997); Turban et al. (2008) * Note: The definition of Turban et al. (2008) spans across all three approaches.		

Organizations utilize business intelligence to collect data, analyze it, and communicate the findings to management to handle various issues or fulfill data demands, and such information helps organizations to perform better (Chen and Lin, 2021). Considering the present condition of the Malaysian newspaper industry, the use of business intelligence may have a positive impact on the performance and sustainability of the Malaysian newspaper industry. According to the Audit Bureau of Circulation (ABC), in Malaysia, the use of digital media rose by 148% in the two years that ended in 2015 compared to the year before. With 920,000 unique visits, The Star newspaper most recently set a record for internet access. Harian Metro and Sinar Harian came in second and third, respectively. Additionally, 882,000 distinct visitors to The Star access the news via tablets and smartphones. With only 634,000 unique visits, Malaysiakini, the most popular online news service, remains in the red (The Star, 2014). Hence, the use of business intelligence in the Malaysian newspaper industry would play a significant role in analyzing the market demand and business environment, which will help organizations operating in the Malaysian newspaper industry to operate effectively, tackle challenges, and ensure sustainability.

2.3 Organizational Agility

The ability of a business to grow in a competitive environment with unproven opportunities is known as organizational agility (Goldman et al., 1995; Irfan et al., 2019; Panda & Rath, 2021). In general, organizational agility is the ability to react to sudden, unpredictable changes in conditions (Al-Omoush et al., 2024; Arokodare et al., 2020; Lu and Ramamurthy, 2011). More specifically, organizational agility is the proactive capacity to adapt quickly to changing circumstances, to change the company's strategic direction continuously, and to find fresh ways to add value (Renzl et al. 2021; Weber & Tarba, 2014). Organizational agility can be classified into market capitalization agility and operational adjustment agility (Lu and Ramamurthy, 2011).

Market capitalization agility is the capacity to quickly adjust to the target market's demands by frequently monitoring and taking advantage of the business climate and viewing unforeseen occurrences as an ideal foundation for new plans (Sambamurthy et al. 2003). By utilizing available knowledge and expertise, businesses with strong market capitalization agility may better position themselves to recognize possibilities in target countries and be aware of developments in global marketplaces (Lu & Ramamurthy, 2011). Operational adjustment agility primarily involves an organization's capacity to comprehend business processes and quickly adjust to emerging opportunities in global marketplaces (Mikalef and Pateli 2017). It emphasizes a company's capacity to acquire new knowledge, connect it with temporal incidents, and gain a competitive edge in challenging circumstances (Chakravarty et al., 2013). Market capitalizing and operational adjustment agility act as connections that link business intelligence with a company's success depends on the effectiveness of business intelligence (BI) for two specific reasons. BI offers comprehensive data and clear insights that enable companies to enhance their organizational agility (Lu & Ramamurthy, 2011; Mikalef & Pateli, 2017). The firm's performance in dealing with unexpected markets relies heavily on the knowledge derived from business intelligence (BI) (Cavusgil & Knight, 2015).

2.4 Organizational Effectiveness

Organizational effectiveness is one of the leading indicators of organizational performance (Gilbert and Parhizgari, 2000; Haddadi and Yaghoobi, 2014; Ishaq et al., 2014; Mullins & Christy, 2013). How successfully a

business accomplishes its aims and objectives is called organizational effectiveness. According to Davis and Pett (2002), organizational effectiveness is a non-financial component that focuses on building and preserving human capital and resources. According to Douglas et al. (2022), organizational effectiveness is not always about the profitability of a business or financial issues; instead, it is driven by the organization's human capital. Therefore, organizational effectiveness accomplishes organizational goals by effectively using resources and routinely improving external environments (Akdere and Egan, 2000; Arokodare and Asikhia, 2020; Moradi et al., 2021).

2.5 Hypotheses Development

2.5.1 Business Intelligence and Organizational Effectiveness

Business intelligence increases the effectiveness of the organization (Al-Okaily et al., 2023; Rouhani et al., 2016; Wang et al., 2022). According to Wixom and Watson (2010), business intelligence includes all the crucial operations that improve an organization's performance and flexibility in the face of change. In contemporary business organizations, the primary application of business intelligence tools has been to manage strategic and tactical business plans and operations. Business organizations use business intelligence to track, assess, compile, and enhance the performance of their operations (Bhatiasevi and Naglis, 2020; Niu et al., 2021; Seddigh et al., 2023). Business intelligence can improve organizational effectiveness by obtaining, purifying, aggregating, and reporting data from many sources (Arefin et al., 2015). Turban et al. (2008) mentioned that business intelligence improves organizational performance. It offers easy access to information and the capability to assess and distribute it to others, including suppliers, partners, and employees.

Moreover, organizations may improve their operational efficiency with the help of business intelligence. It supports decision-making by business managers and decision-makers at work, which increases output and profitability (Olaru, 2014). The resource-based view (RBV) theory can further explain this relationship. RBV focuses on an organization's internal resources to organize operations and gain a competitive edge. According to RBV theory (Barney, 1991), organizations possess resources, some of which provide them with a competitive edge, and some result in better long-term performance. Rare and precious resources can help an organization gain a competitive edge. Similarly, a business organization may consider its business intelligence as a resource that will help its manager gather and analyze business information for future business plans to solve business-related problems, out-compete competitors, and make correct decisions to ensure organizational effectiveness through sustainable competitive advantage. Hence, this study proposes the following:

Hypothesis 1: Business intelligence positively influences organizational effectiveness.

2.5.2 The mediating effect of market capitalization agility and operational adjustment agility

Business intelligence gathers, analyzes, and interprets information to make efficient and effective decisions. Existing literature shows that business intelligence influences organizational agility (Mikalef & Pateli, 2017). In other words, business intelligence positively influences the capacity of the organization to become more agile. More specifically, business intelligence in the organization enhances its agility by improving its capacity to incorporate changes to meet the market's demands. Similarly, Ghasemaghaei et al. (2017) revealed that business intelligence positively enhances organizational agility.

Market capitalization agility is one of the critical types of agility, which makes the organization capable of managing change by scanning the volatile business environment and understanding the needs of the target market to explore the prospect for fresh strategic movement (Sambamurthy et al., 2003). Firms with solid market capitalization agility can better position themselves to identify prospects in their target markets and be aware of changes in worldwide marketplaces (Lu & Ramamurthy, 2011). Prior research has underlined the importance of agility in impacting organizational performance and creativity (Chakravarty et al., 2013; Li et al., 2020). Furthermore, earlier research has shown a link between agility and organizational effectiveness (Dyer & Shafer, 1999; Holbeche, 2018). More specifically, Cheng et al. (2020) revealed the mediating effect of market capitalization agility in the relationship between business intelligence and internationalization.

Business intelligence enhances organizational market capitalization agility and leads to organizational effectiveness. Organizational market capitalization agility has a positive influence on organizational effectiveness. Specifically, the influence of business intelligence on organizational effectiveness is likely to increase when business intelligence can enhance market capitalization agility. Moreover, studies by Sharif et al. (2022) established the mediating role of market capitalization agility in the relationship between knowledge coupling and innovation performance. Therefore, it can be proposed that market capitalization agility can as a potential mediator in the connection between business intelligence and organizational effectiveness. Hence, this study proposes:

Hypothesis 2: Market capitalization agility mediates the relationship between business intelligence and organizational effectiveness.

Like the mediating role of market capitalization agility, the present study highlights that operational adjustment agility also plays a mediating role in the relationship between business intelligence and organizational effectiveness. Mikalef and Pateli (2017) define operational adjustment agility as a firm's learning capability. Its quick adaptation is caused by opportunities arising in the marketplace. It highlights a firm's learning potential by linking existing information with cyclical events to organize novel knowledge to acquire a competitive advantage in volatile environments (Chakravarty, Grewal, & Sambarrturthy, 2013). Business intelligence in the organization makes it more agile to make necessary changes in the operational unit of the organization, which ultimately enhances organizational effectiveness. More specifically, an organization will become more effective when operational adjustment agility can be ensured by business intelligence. A prior study by Li et al. (2020) revealed that operational adjustment agility mediates the relationship between e-commerce capabilities and firm performance. Additionally, Cheng et al. (2020) revealed the mediating effect of operational adjustment agility in the relationship between business intelligence and internationalization. Accordingly, the present study proposes:

Hypothesis 3: Operational adjustment agility mediates the relationship between business intelligence and organizational effectiveness.

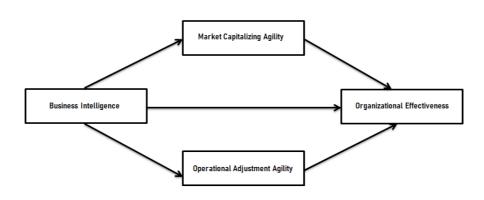


Figure-1: Conceptual Model

3. METHODOLOGY

3.1 Population, sampling, and data collection methods

The present study was quantitative. Data was collected from Dec 2022- Feb 2023 using a survey approach through self-administered questionnaires at a single point in time (cross-sectional). The population of this study comprises employees working at the managerial level in the newspaper industry in Malaysia. The non-probability convenience sampling method was used to approach participants for data collection, as the complete population list was unavailable (Sekaran and Bougie, 2016). Secondly, convenience sampling was employed in this study because, it is affordable and has no requirement on the elements of the population (Etikan et al., 2016). Managerial-level employees (including editor-in-chief, managing editors, copy editors, news editors, assistant editors, and opinion editors) from Malaysian print media firms were chosen to test the research assumptions because they hold more knowledge about the driver of organizational effectiveness. The sample size was chosen through existing rules of thumb suggested by prior literature (Hair Jr et al. 2017). As per the requirement, there should be a minimum of ten participants for each of the elements about a certain concept (Wetzels et al. 2009). Given that the survey instrument consisted of 30 items, it is recommended to have a sample size of 300 respondents. This is calculated by multiplying the number of items (30) by a factor of 10, resulting in 300 respondents. So, the minimum sample is 300 chosen. However, it was decided to get more data for pilot survey purposes as well.

This study collected data in two phases. Hence, in the present study, 700 managerial-level employees from the Malaysian newspaper industry were approached to participate in the questionnaire survey. 10% of the total number of respondents was taken in the first phase as a pilot survey to check the normality and quality of the data.

The findings of the pilot research were sufficient to move on to the following stage. In the second phase altogether, 537 responses were returned. However, 33 responses were removed from the final data set due to incomplete and disengaged responses. Hence, finally, 504 responses (a response rate of 72%) were used to test the proposed research model. Hence, the sample size of 504 was more than adequate to examine the proposed model. Of the 504 respondents, the majority (47.2%) had a bachelor's degree; the majority (54.5%) were female; the majority (34.3.8%) were older than 50; the majority (41.3%) were managers at the functional level; all (100%) were locally owned businesses; and all (100%) of the companies owned both a newspaper and a news portal.

3.2 Questionnaire

To test the proposed model, a 5-point Likert scale was used to measure each construct of the proposed model. Business intelligence was measured using a 15-item scale adopted from Zahra et al. (2002), market capitalization agility was measured using a 3-item scale, operational adjustment agility was measured using a 3-item scale adopted from Goldman et al. (1995), and Tsourveloudis et al. (1999), and organizational effectiveness was measured using a 12-item scale adopted from Gold et al. (2001).

3.3 Data Analysis

Data analysis was done using partial least squares structural equation modeling (PLS-SEM). Before examining the link among the study's variables, reliability and validity were assessed during the data analysis in PLS-SEM.

3.4 Common Method Bias

A common method bias may occur when data are collected from a single source. Using statistical controls, we addressed potential common method bias (Podsakoff and Organ 1986). Harman's single-factor test initially revealed that no single factor explained most of the variance (31.09%). Previously, in similar sort of studies also used Harman's single-factor test to report common method bias issue (Arshad et al., 2023; Islam et al., 2021; Kock, 2015).

3.5 Descriptive Statistics and Correlation

Table 2: Descriptive Statistics and Correlations.

	Mean	SD	Skewness	Kurtosis	BI	MCA	OAA	OE
BI	4.46	0.605	-1.534	3.088				
MCA	4.55	0.647	-2.062	5.734	0.620**			
OAA	4.77	0.473	-2.263	4.810	0.219**	0.159**		
OE	4.70	0.433	-2.136	7.159	0.608**	0.490**	0.366**	

^{**}p < .001 (two-tailed).

The mean values, standard deviations (SD), and correlations of each construct are presented in Table 2. All the constructs are strongly related to one another.

3.6 Assessment of the Measurement Model

To assess the measurement model, a confirmatory factor analysis was performed. In the measurement model assessment, three criteria, factor loading, average variance extracted (AVE), and composite reliability (CR) need to be examined. First, most of the item's values exceeded (0.338 to 0.915) the threshold value of 0.70. However, three items (BI1, BI5, and BI11) were removed to improve the value of CR. Second, the AVE values of all the constructs were greater than 0.5 (BI: 0.575, MAA: 0.722, OAA: 0.806, and OE: 0.544). On the other hand, the CR value ranged from 0.886 to 0.941, which was higher than the suggested threshold of 0.70 (Hair et al., 2023). As a result, the current study confirms the existence of convergent validity. Table 3 shows the loadings, AVE, and CR values. Following validation of the convergent validity, the discriminant validity was examined. Therefore, the heterotrait-monotrait (HTMT) ratio was used to test the model's discriminant validity. The HTMT ratio is superior to other techniques, such as the Fornell-Larcker criteria (Henseler et al., 2015), since it emphasizes whether there are threshold cut-off values for discriminant validity, notably 0.85 and 0.90. The discriminant validity of the model was determined using the 0.90 (HTMT) criteria (Sarwar et al., 2023). Table 4 reveals the model has discriminant validity because all the HTMT value components were less than 0.90. The measurement model has adequate convergence and divergence.

Table 3: Results of Measurement Mode

Variable	Item	of Measurement Loading	α	CR	AVE
Business Intelligence	BI2	0.800	0.932	0.941	0.575
	BI3	0.761			
	BI4	0.819			
	BI6	0.807			
	BI7	0.800			
	BI8	0.784			
	BI9	0.729			
	BI10	0.794			
	BI12	0.779			
	BI13	0.783			
	BI14	0.623			
	BI15	0.579			
Market capitalization agility	MCA1	0.831	0.813	0.886	0.722
	MCA2	0.833			
	MCA3	0.883			
Operational Adjustable Agility	OAA1	0.915	0.880	0.926	0.806
	OAA2	0.897			
	OAA3	0.881			
Organizational Effectiveness	OE1	0.761	0.914	0.931	0.541
	OE2	0.808			
	OE3	0.833			
	OE4	0.812			
	OE5	0.821			
	OE6	0.796			
	OE7	0.831			
	OE8	0.831			
	OE9	0.663			
	OE10	0.703			
	OE11	0.361			
	OE12	0.383			

Table-4: Heterotrait-monotrait ratio (HTMT) - Matrix

Construct	BI	MCA	OAA	OE
BI				
MCA	0.708			
OAA	0.240	0.186		
OE	0.655	0.564	0.431	

3.7 Multicollinearity Analysis

After confirming the validity and reliability of the variables, the structural model was evaluated to examine the relationship between the constructs suggested in the proposed model. Before the structural model assessment, we performed multicollinearity tests. After confirming the validity and reliability of the variables, the structural model was evaluated to examine the relationship between the constructs suggested in the proposed model. Before the structural model assessment, we performed multicollinearity tests. The eigenvalue approach, variance inflation factor, and correlation coefficient are the three main methods for identifying multicollinearity. First, the correlation coefficient was used to verify multicollinearity. Analyzing the data's multicollinearity for every research variable using a sample of thirty items. The purpose of multicollinearity is to demonstrate a robust

correlation between the variables being studied, such that items with a matrix correlation value of less than 0.90 pass. The four variables in the study were coded A–D. The multicollinearity analysis results on four variables ranged from 0.427 to 0.810 (<0.90). The findings clarified that there is no collinearity (Hair et al., 2010). Secondly, we assessed multicollinearity through tolerance and VIF (Hair, 2021). The recommended tolerance level for PLS-SEM predictors is greater than 0.2 and less than 5.0 for VIF. The VIF value is used to validate that there is no collinearity issue in the structural model.

Table 5 shows the VIF value as well as the study tolerance variables.

Table 5: Collinearity evaluation of the structural model

Construct	MCA OAA		OE
	VIF	VIF	VIF
BI	1.000	1.000	1.775
MCA			1.741
OAA			1.051

4. RESULTS AND DISCUSSION

4.1 Path Analysis

4.1.1 Assessment of the Structural Model - Direct Effect

Following the evaluation of the measurement model, the subsequent phase involves evaluating the structural model. Before evaluating path coefficients, significance, effect size (f2), and coefficient of determination (R2), it is important to assess the overall fit of the estimated model (Benitez et al., 2020). Benitez et al. (2020) suggest that the overall fit of the bootstrap-based model can be evaluated by utilizing the Standardized Root Mean Square Residual (SRMR) as an indicator of approximate fit. The estimation of total model fit in PLS-SEM is a recent addition, and scholars are recommended to exercise caution when applying it (Hair Jr et al. 2017). The SRMR assessment in this study yielded a result of 0.05, which is below the acceptable threshold of 0.080. This indicates that the model fit is deemed acceptable. However, it is crucial to evaluate the path coefficients and determine their relevance.

During the evaluation of the structural model, the proposed connections between the constructs were determined using a bootstrapping procedure, which yielded path coefficients and corresponding t-statistics (Benitez et al. 2020). The t-values, p-values, and path coefficients were derived from the bootstrapping technique The importance of the path coefficients was evaluated using t-values and p-values, employing a one-tailed test (Hair et al. 2013). The outcome shows a significant and positive connection between business intelligence and organizational effectiveness ($\beta = 0.437$, t= 9.754, p = 0.000). Hence, H1 was supported.

4.1.2 Specific Indirect Effect

The indirect relationships between the constructs are presented in Table 6. The results of the bootstrapping analysis show that all two indirect effects of operational adjustable agility (β = 0.058, t-value = 2.438, 95% CI: LL = 0.017, UL = 0.109) and market capitalization agility (β = 0.119, t-value = 2.616, 95% CI: LL = 0.034, UL = 0.210) are statistically significant.

Table 6: Mediating hypotheses results (indirect relationship)

Hypothesis	Path	Std Beta	Std Error	t-Value	<i>p</i> -Value	Lower Limit	Upper Limit	Decision
H2	BI-OAA-OE	0.058	0.021	2.438	0.015	0.017	0.109	Supported
Н3	BI-MCA-OE	0.119	0.045	2.616	0.009	0.034	0.210	Supported

4.1.3 Effect Size

It has been recommended that when a model is ignored to compute the effect F2 of an exogenous variable that describes the significant influence on the endogenous variables, a change in R2 needs to be addressed (Hair, 2020). According to Kang (2021), the commonly used effect size standards are 0.02, 0.15, and 0.35 for small, medium, and large effects.

Table 7 presents the effect size of exogenous variables. Outcomes show that business intelligence has a large effect on market capitalization agility, a small effect on organizational adjustment agility, and a medium effect on organizational effectiveness. In addition, market capitalization agility has a small effect on organizational effectiveness, and organizational adjustment agility also has a small effect on organizational effectiveness. Low effect sizes of market capitalization agility (0.037) and operational adjustment agility (0.105) are acceptable in the case of this study because both the market capitalization agility and operational adjustment agility were considered mediators, not the main exogenous variable. However, the combined effect size of both market capitalization agility and operational adjustment agility would have resulted higher effect on organizational effectiveness.

Table 7: Effect size of the study variables

Construct	MCA	OAA	OE
BI	0.739	0.049	0.201
MCA			0.037
OAA			0.105

4.2 Discussion

Malaysia's newspaper industry is going through a challenging period (Nawang et al., 2020; Supadiyanto, 2020). The long-term prospect of the Malaysian newspaper industry is a matter of concern, as numerous experts view it as a dying sector. As a result, experts and practitioners agree that using business intelligence will be crucial to improving the organizational effectiveness of Malaysia's newspaper industry. Nonetheless, the influence of business intelligence on enhancing the organizational effectiveness of enterprises functioning in Malaysia's newspaper industry has not been investigated in the extant academic literature. Thus, as far as is known, this is the first study to investigate how business intelligence might improve the effectiveness of organizations operating in the Malaysian newspaper industry. Furthermore, this research is the first to investigate how organizational agility—specifically, operational adjustment and market capitalization agility—mediates the relationship. All things considered; the study's results provide concrete evidence for the research's conclusions. The results of this study demonstrated a strong and favorable relationship between organizational effectiveness and business intelligence. Additionally, in the context of the Malaysian newspaper industry, the current study supports the association between business intelligence and the effectiveness of organizations via the lens of RBV theory. This finding is consistent with other study (Elbashir et al., 2008) showing the impact of BI on organizational effectiveness.

The results of the mediated model showed that the relationships between business intelligence and organizational effectiveness are mediated by operational adjustment agility and market capitalization agility. To the best of our knowledge, however, this is the first study that investigates how operational adjustment agility and market capitalization agility mediate the relationship between business intelligence and organizational effectiveness. However, Cheng et al.'s (2020) findings are also consistent with the mediating role of market capitalization agility in the connection between business intelligence and organizational effectiveness. Cheng et al.'s (2020) findings are also in line with the results of the mediational role of operational adjustment agility in the relationship between business intelligence and organizational effectiveness. The findings show that the use of business intelligence in the Malaysian newspaper industry can enhance the effectiveness of the organizations operating in the Malaysian newspaper industry. In addition, if the organization is more agile can become more effective. In other words, the practice of business intelligence will be more effective when an organization is more agile in terms of market capitalizing and operational adjustment.

5. CONCLUSION

5.1 Theoretical Implications

This research makes a substantial contribution to the area of organizational behavior. To begin with, several scholars and researchers have noted that changes in the global business environment make it difficult for organizations to remain effective. In the past, scholars have underlined the significance of knowledge management

systems, leadership, and culture in enhancing organizational effectiveness. The present study, however, highlights how crucial business intelligence is to raising organizational effectiveness. This study examines data from the Malaysian newspaper industry to determine how business intelligence and organizational effectiveness are related. The current study demonstrates that managers throughout the organization use business intelligence to make informed decisions for a variety of business processes and that this intelligence yields real economic benefits (Chau & Xu, 2012).

Furthermore, this study provides the distinct mediating influence of market capitalizing and operational adjustment agility in the relationship between business intelligence and organizational effectiveness. This study reveals the mediational effect of both market capitalization agility and operational adjustment agility in the relationship between business intelligence and organizational agility by analyzing the mediational role of both in the association between business intelligence and organizational effectiveness. These results demonstrate how important it is for a company to be flexible to increase its efficacy even with better business intelligence. A company's ability to capitalize on opportunities and respond to changing circumstances is positively impacted by business intelligence. This increases an organization's flexibility and agility, which in turn boosts its effectiveness.

5.2 Practical Implications

This study has numerous practical implications. First, this study provides logical justifications for why newspaper organizations should focus on enhancing organizational effectiveness. Second, this study highlighted the role of business intelligence in enhancing organizational effectiveness. Therefore, managers of newspaper organizations may emphasize in their organization the need to improve the use of business intelligence to enhance organizational performance. Third, this study revealed that market capitalization agility and operational adjustment agility mediate the relationship between business intelligence and organizational effectiveness. In other words, business intelligence will work effectively when managers of the organization can ensure market capitalization and operational adjustment agility, which ultimately enhances organizational effectiveness.

This study has a lot of real-world applications. To begin with, this study offers rational explanations for why newspaper businesses ought to concentrate on improving organizational effectiveness. This study underscored the significance of business information in enhancing the effectiveness of organizations. As a result, managers of newspapers may stress within their organization the importance of enhancing business intelligence to boost organizational performance. Third, this research showed that the relationship between business intelligence and organizational effectiveness is mediated by operational adjustment agility and market capitalization agility. In other words, the use of business intelligence is contingent upon the ability of organizational managers to guarantee market capitalization and operational adjustment agility, both of which eventually augment the effectiveness of the company.

5.3 Policy Implications

The findings of the research offer the Malaysian newspaper industry's policymakers several recommendations. First, to help newspaper organizations in Malaysia become more proficient and productive users of business intelligence systems, policymakers in the country's newspaper sector could offer comprehensive and demanding training on the use or application of business intelligence. Furthermore, policymakers should train managers of Malaysian newspaper companies to be more knowledgeable about the business environment, including external and internal business factors, strengths, weaknesses, opportunities, and threats; market conditions; local and global economic and political conditions; market competition; customer demands; and global trends, to improve organizational agility, including market capitalization agility and operational adjustment agility. Such managerial knowledge of the managers of the Malaysian newspaper companies would help to become more agile, specifically, more change-responsive and adaptive.

5.6 Limitations and Future Research Directions

This study has several shortcomings. Initially, a self-reported survey method was used to examine the study's variables, which may have influenced the findings. The study recommends that future research studies adopt alternate data collection methods in investigations where data may be obtained at several different time lags for four distinct variables, even though the CMB test indicated that CMB may not be a significant issue in this study. A longitudinal analysis could be used by future researchers to avoid this limitation. This study suggests an innovative climate as a feasible moderator for future researchers to improve the current model. Including the moderator will provide practitioners and academics with fresh views for future research investigations.

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