

## The Effect of Integration on Business Strategies

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### Abstract

The study assessed how integration affect business strategies by evaluating the impact of forward and backward vertical integration on business performance. The data used in the testing of hypotheses formulated in the study was analyzed using the regression technique. The result shows that forward and backward integrations have a positive and significant effect on performance. The study concluded that forward and backward integrations are the major determinants of business performance. The study recommends that management implement integration in their strategic plan to enhance their business operations in order to boost their operations and increase performance.

**Keywords:** Integration; Forward Integration; Backward Integration; Performance.

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### Introduction

A major focus of organizational studies and strategic management has been the connection between integration and performance. Integration refers to a company's strategic decision to integrate different parts of its business through acquisitions or mergers, internal coordination, or both (Olhager & Feldmann, 2018). For a firm's overall performance, this strategic choice has wide-ranging effects. There are several ways to integrate: horizontal integration (growing within the same stage of the value chain), vertical integration (combining distinct stages of production or distribution), and diversification (growing into unrelated industries). Every kind of integration has its own advantages and disadvantages that might affect a company's performance.

In particular, there has been a lot of discussion over vertical integration. It entails a company having control over various supply chain phases, from raw materials to finished goods or services. Businesses choose vertical integration in order to lower transaction costs, enhance coordination, and obtain control over quality (Khudadad et al., 2018). Increased efficiency and lower costs can result in better performance.

A company can extend its operations or gain more control over the supply chain by putting itself closer to the end user, which is known as forward integration. This can involve opening up retail locations, distribution methods, or even direct-to-consumer sales channels. One important topic of research in the field of business management and performance is the relationship between forward integration and performance (Lahiri & Narayanan, 2013). Businesses looking to get more control over their sales and distribution processes frequently attempt forward integration. By doing this, companies hope to increase their portion of the value chain, improve customer service, and lessen their dependency on middlemen. As per Porter's Value Chain model (Porter, 1985), forward integration is a key strategy for attaining a competitive edge through closer alignment of operations with customer demands. Businesses that

successfully implement forward integration techniques may see increases in customer satisfaction, cost savings, and revenue growth (Li & Tang, 2010). A major advantage of forward integration is the possibility of higher profit margins and revenue. When a business interacts with clients directly through online or physical channels, it can take home a bigger share of the cost of the finished good. Higher sales income and the capacity to determine price strategies that optimize profitability are the outcomes of this (Matsubayashi, 2007). Businesses can also obtain access to important client data, which enables better product development and more focused marketing, both of which can increase performance.

However, there are dangers and difficulties associated with forward integration. Establishing or acquiring distribution channels or retail operations comes with a major risk. These up-front expenses might not pay off right away and can be rather high. Inadequate forward integration initiatives have the potential to impair overall performance and cause financial losses (Klassen & Vereecke, 2012). Before implementing such strategy, businesses must perform in-depth feasibility and market research investigations. Furthermore, the ability to efficiently manage and coordinate the extended value chain is a prerequisite for the success of forward integration plans. This include maintaining harmonious integration with current operations and managing partnerships with distributors, retailers, and suppliers. Inefficiencies, increased operating expenses, and a drop in overall performance might arise from a lack of coordination (Klassen & Vereecke, 2012).

Backward vertical integration, a strategic business concept that entails a corporation expanding its operations or influence over the supply chain by moving closer to its sources of supply or production, is another important component of vertical integration. To increase control and influence over the availability, affordability, and quality of essential inputs, this frequently entails building manufacturing capabilities or sourcing suppliers. One important component of company strategy is the relationship between performance and backward integration, which has attracted a lot of attention from academic researchers. Potential cost reductions and greater operational efficiency are two important effects of backward integration (Prajogo & Olhager, 2012). When a business owns or controls its production facilities or suppliers, it can cut out middlemen and lower the price of obtaining essential supplies. Profitability may rise along with reduced production costs and better margins. Backward integration can also offer a more dependable and safe supply source, lowering the danger of supply chain interruptions (Zailani et al., 2012).

Furthermore, backward integration can improve a business's capacity to control the calibre and personalization of its inputs. A company can make sure that the components or raw materials fit its own standards and specifications by gaining more control over suppliers or production processes. This may result in increased customer satisfaction and brand reputation as well as better product quality and consistency (Li et al., 2021).

It's crucial to remember that backward integration may have drawbacks and difficulties. Acquisition or establishment of supplier or production capacity comes with a hefty price tag. These up-front expenses might not pay off right away and can be rather high. Inadequate implementation of backward integration can lead to monetary losses and have a detrimental effect on overall performance. One more facet of the correlation between performance and backward integration is the requirement for efficient management and coordination in the extended supply chain. While guaranteeing a smooth integration with their current operations, businesses must manage their connections with suppliers or production facilities. Ineffective coordination can result in lower performance overall, higher operating expenses, and inefficiencies (SgROI & Sciancalepore, 2022).

Performance in the digital era of today is heavily dependent on integration. Businesses integrate in order to improve consumer experiences, get data-driven insights, and streamline operations (Ali et al., 2023). Better performance and a competitive edge might come from effective technology integration.

A variety of metrics are frequently used to measure performance, such as financial indicators (such as profitability, return on investment), operational efficiency indicators (such as production output, supply chain responsiveness), and customer-related metrics (such as market share, customer satisfaction) (Kaplan & Norton, 1992). The performance measures selected differ according on the integration's strategic goals.

A number of variables, such as industry dynamics, business size, level of rivalry, and the particular integration method, influence the relationship between integration and performance (Zhang et al., 2021).in contrast to a monopolistic market, a firm's performance reaction to integration may vary in a highly competitive market.

There are dangers and obstacles associated with integration. It may result in overcommitment to particular markets or technology, organizational complexity, and cultural conflicts during mergers (SgROI & Sciancalepore, 2022). These difficulties could prevent gains in performance. Recent years have seen a rise in the popularity of sustainability as businesses realize how critical it is to include social and environmental factors into their plans. Integrating sustainable practices can improve reputation and lower risks, which can lead to long-term performance.

Performance and integration have a complex relationship that depends on a number of variables. In order to maximize overall performance, organizations must carefully evaluate their strategic objectives, industry environment, and the potential challenges and hazards involved with integration, even though integration techniques might result in benefits including cost reduction, resource acquisition, and competitive advantage.

The purpose of this research is to examine how integration affect business strategies. Evaluating the impact of vertical integration on business performance. The primary research objectives include:

To assess the effect of forward vertical integration on business performance.

To examine the effect of backward vertical integration on business performance.

This study reviewed both relevant and related literatures in relation to vertical integration and business performance.

Liang, et al., (2022) assessed the effect of forward and backward vertical integration on the bullwhip effect of firms in China. The authors employed a large dataset containing 292080 business information of listed firms in China. The study found that forward vertical integration lower the bullwhip effect of firms in China. However, the authors failed to state the total population and the actual sample size used in the study, also the period covered was not stated in the study. Furthermore, the type and technique of data analysis employed by the authors were not stated.

Win and kakinaka, (2022) evaluated the impact of forward and backward vertical integration on firm performance of garment sect in Myanmar. The study found forward vertical integration to have significant effect on the performance of firms in the garment sector of Myanmar. However, the study failed to specify the total population, and sample size of the study. Also, the type of data and technique used in analyzing the data was not stated. Furthermore, nothing was said about the measurement used in the study and the theory that underpins the study.

Adeleke, et al., (2019) examined the effect of forward integration on the growth of banking and insurance companies in Nigeria. The study used primary data from self-administered questionnaire from a sample of 753 respondents from the selected companies. The authors employed the product moment correlation method to test the hypotheses of the study. The result of the study established that forward integration has effect on the organizational growth of the sampled banks and insurance companies. There was no theoretical underpinning, also no variables measurement. The authors did not discuss the period covered by the study.

Lahiri and Narayanan, (2013) investigate the factors that have effect the impact of alliance portfolio size on innovation and financial performance. After their analysis the authors discovered that vertical integration has effect on the impact of alliance portfolio on firm performance. The study failed to state the population and sample size if any used in the study, nothing was said about the period covered and theory use to underpin the study.

Rothaermel, et al., (2007) examined the impact of vertical integration (forward and backward) on organizational performance. A longitudinal data were analyzed by a unique and fine-grained panel. The data of the study was extracted from 3500 product introduction in global microcomputer industry. After carefully study the authors established that forward vertical integration has an important effect on the outcome of companies. The authors failed to specify the number of firms in the computer industry in which data were collected from the 3500 products, also the period which the study covered was not stated. Similarly, no theoretical underpinning and measurement were discussed in the study.

Oshodi, (2022) evaluated the effect of backward integration strategy on the value of manufacturing firms in Nigeria. Backward integration was proxied by local raw materials. Secondary data was sourced from the annual audited financial report of the 49 sampled manufacturing firms in Nigeria from 2002-2020. Ordinary Least Square (OLS) regression technique was used in analyzing the data of the study. The author established that backward integration has a significant effect on the value of manufacturing firms in Nigeria. The author did not state the measurement adopted for the dependent variable which is value added. The theory that underpinned the study was not clearly stated in the study.

Kaiser and Obermaier, (2020) examined the effect of vertical integration on firm performance. The study used a total sample of 434 listed manufacturing firms in Germany from which data was extracted from the period of 1993-2013. The multiple regression analysis was use in the analysis of the secondary data used in the study. The result revealed that backward integration has negative but significant relationship with the performance of the listed manufacturing firms in Germany. The authors failed to state the theory that underpinned the study, also the measurement for the variables of interest used in the study was not revealed by the authors.

Li and Chen, (2020) investigated the vertical integration strategies of a manufacturers within two suppliers and two retailers. After a careful study the study established that backward vertical integration has no significant influence on the quality of supply of the manufacturers. However, the study did not specify the type of data, technique of analysis used, the period of the study and the theoretical underpinning of the study.

Nasambu, (2020) examined the impact of backward integration on firm efficiency of manufacturing companies in Kenya. The descriptive survey research design was adopted in the study. The sample size of the study consisted of 8 cement manufacturing firms in Kenya, using a primary data sourced using the questionnaire method and were analyzed using inferential and descriptive statistics. The result of the regression analysis showed that backward integration has a positive and significant influence on the organizational efficiency of the studied manufacturing firms in Kenya. The study covered only 8 manufacturing firms in Kenya. The author failed to state the various measurement for both the independent variable and the dependent variable.

Oloda, (2017) examined the effect of vertical integration firms' survival in Nigeria. The domain of the study consisted of the manufacturing companies in Nigeria. The research applied the sample size of 205 managers of 6 manufacturing firm in Nigeria. Primary data were collected using questionnaire and the data was analyzed spearman rank-order correlation was used in testing the hypotheses of the study. The result of the study show that backward integration has a positive and significant effect on the survival of manufacturing firms in Nigeria. The author failed to disclose the period covered by the study, no theoretical underpinning. Also, the study used only 6 manufacturing firms out of the several manufacturing firms listed in Nigeria.

A useful tool for understanding the connection between performance and vertical integration is the transaction cost theory. It clarifies the reasons behind company decisions to integrate vertically as well as the potential effects on overall performance. The core tenet of Oliver Williamson's and Ronald Coase's original Transaction Cost Theory is that businesses exist to reduce transaction costs. When we talk about transaction costs, we're talking about the expenses related to managing business dealings outside of an organization, in the marketplace. Businesses must choose between doing transactions internally within the company and externally in the market, according to the transaction cost theory. Whichever alternative with lowest transaction costs wins out when it comes to choosing between the two (Coase, 1937).

According to Gianfreda (2020), vertical integration is the process by which a business expands its operations to include several phases of the production or distribution process within an industry. Transaction cost theory sheds light on the reasons behind businesses' decisions to integrate vertically in order to reduce transaction costs. Businesses may encounter uncertainty regarding the calibre, timeliness, or dependability of inputs or outputs when interacting with outside suppliers or buyers. By internalizing transactions and enabling improved control and coordination, vertical integration helps lessen this uncertainty. There's a chance that suppliers or customers will act opportunistically in external transactions, such raising prices or hiding important information. Because partners inside the same organization have common interests and less motivation for opportunism, vertical integration can help to minimize this risk. Contract negotiations and the hunt for outside partners can have substantial transaction expenses. The elimination of external transactions through vertical integration can lead to a streamlining of these operations. Vertical integration may occasionally result in economies of scale and scope, which lower production costs and boost total productivity. Better performance and cost savings may come from this (Guan & Rehme, 2012).

Vertical integration and company performance have a complex and context-dependent relationship. It depends on a number of variables, such as the nature of transaction costs, the firm's skills, and industry characteristics. By removing some transaction costs, like search and negotiating expenses, vertical integration can increase cost effectiveness (Williamson, 1985). But it also brings with it additional expenses for overseeing and directing internal operations. Integration can improve production process control and the quality of products or services, which can boost performance—particularly in sectors where quality is a crucial differentiator. Vertical integration may make it harder for a company to adapt to new developments or shifting market conditions, which could have a detrimental effect on performance. It is important to take into account the risk involved in vertical integration. Over integration increases the risk of resource misallocation and overcommitment (Stuckey & White, 2019).

To sum up, transaction cost theory offers a framework for comprehending why businesses decide to use vertical integration as a tactic to cut costs (Williamson, 1975). Although vertical integration has advantages in terms of quality, cost management, and less opportunistic behavior, its effect on performance depends on the particulars and how well a company handles the integration's obstacles (Williamson, 1985). Consequently, a thorough evaluation of transaction costs and performance trade-offs should form the basis of any decision to vertically integrate.

## Methods

The instrument for measuring backward vertical integration and forward vertical integration were adapted from the work of Worthen, Tuna and Scheck. (2009), Wu, Petruzzi, and Chhajer. (2007) scale of measuring firm performance was adapted from the work of Siepel and Dejardin, (2020). The analysis makes use of quantitative statistics. The correlation coefficients, correlation matrix, and regression equation model are examples of the quantitative analytical tools.

## Result

Cronbach's alpha, a reliability analysis criteria employed in this study, indicates the reliability and internal consistency of the scale when it is equal to or above 0.7. All of the construct dimensions utilized in this study had Cronbach's alpha values over 0.7, indicating strong internal consistency and reliability. (2010). Hair, Black, Babin, and Anderson. As a consequence, the construct reliability of the questionnaire employed in this study is excellent; the result is shown in table1 below.

The result presented in table 1 has indicated that all the value of the cronbach's alpha is above 0.7 as shown below that means that the constructs are all reliable.

**Table 1: Cronbach's Alpha**

Variables	Numbers Of Items	Cronbach's Alpha If Item Deleted	Decision Rule
Backward Vertical Integration	5	.714	Reliable
Forward Vertical Integration	4	.817	Reliable
Firm Performance	7	.844	Reliable

Source: field work (2023)

The research study established a Pearson correlation between backward vertical integration and forward vertical integration on firm performance this is presented on table 2.

The Pearson correlation coefficient (r) is shown in table 2 The results demonstrate a statistically significant positive correlation between backward vertical integration and (r = 0.555, P V 0.05). Forward vertical integration has a substantial positive link with (r = 0.611, P V 0.05) as well. Additionally, there is a strong correlation between company performance and profitability (r = 0.546, P V 0.05). As a consequence, the modest correlation between the independent and dependent variables indicates the model's appropriateness.

**Table 2: Correlation Analysis**

Correlations				
Variables		backward vertical integration	forward integration	firm performance
backward vertical integration	Pearson Correlation	1	.611	.555
	Sig. (2-tailed)		.000	.000
	N	237	237	237
forward integration	Pearson Correlation	.611	1	.546
	Sig. (2-tailed)	.000		.000
	N	237	237	237
firm performance	Pearson Correlation	.555	.546	1
	Sig. (2-tailed)	.000	.000	
	N	237	237	237

\*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Field Work (2023)

Analysis of Data the ANOVA findings are shown in table 3 the F value is 70.766, and the sig value is.001, which is significantly less than.05 percent. This result supports the model's claim that it has the ability to anticipate firm performance since it has the capability to explain firm performance.

**Table 3: ANOVA**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	110.537	2	55.269	70.766	.000 <sup>b</sup>
	Residual	182.754	234	.781		
	Total	293.291	236			

a. Dependent Variable: firm performance

*b. Predictors: (Constant), forward integration, backward vertical integration*

If all other factors are held constant, the regression coefficient as revealed in table 4 for backward vertical integration on firm performance is beta value of =.354 or 35.4%, which indicates that a 1% increase in backward vertical integration effectiveness of firm activities will increase firm performance by 35.4%, and the P statistical value is less than 5% level of significance, demonstrates that there is sufficient statistical evidence to support the notion that an increase in the firm's backward vertical integration activities will increase profitability. As a result, the alternative hypothesis was accepted and the null hypothesis was found to be invalid due to sufficient statistical evidence.

The regression result coefficient as revealed in table 4 for the second hypothesis has indicated that forward vertical integration has a  $(\beta) = .330$  indicated that, one percent increase in forward vertical integration activities increase firm performance by 33.0% if other variables are kept constant, and the T value of the statistics is 5.065 which is greater than the critical T at the 5% level of significance shows that there is enough statistical evidence that an increase in the activities of forward vertical integration will lead to an increase in portable water supply and vice versa, this is supported by the P value of < 5% thus the null hypothesis was rejected and the alternative hypothesis is accepted.

**Table 4: Coefficients**

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.487	.239		6.224	.000		
	Backward Vertical Integration	.342	.063	.354	5.425	.000	.627	1.596
	Forward Integration	.331	.065	.330	5.065	.000	.627	1.596

*a. Dependent Variable: Firm Performance*

R squared is the regression coefficient. The link between (I.V) and (D.V) was revealed in table 5 is 37.7%. This coefficient of determination (R<sup>2</sup>) demonstrates that the combined impact of backward vertical integration and forward vertical integration accounts for 37.7% of variation, fluctuation, or change in firm performance. Other variables not included in this model account for the remaining 62.3%.

Statistics on multicollinearity demonstrate that there is a strong tolerance level between independent variables and no multicollinearity issue, with tolerance levels between independent variables between .627 and .627. The outcome is shown in the table below.

**Table 5: Model Summary**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.614 <sup>a</sup>	.377	.372	.88374

- a. Predictors: (Constant), forward integration, backward vertical integration
- b.

Similar, the Variance Inflation Factor (VIF) as shown in table 6 is within the range of 1.596 and 1.596, indicating that multicollinearity across independent variables is not a concern. According to Field's (2005) recommendations, the tolerance threshold for multicollinearity should be .10

**Table 6: Coefficients**

Coefficients			
Model		Collinearity Statistics	
		Tolerance	VIF
1	backward vertical integration	.627	1.596
	forward integration	.627	1.596

*a. Dependent Variable: firm performance.*

## Discussion

Backward vertical integration and firm performance are positively and significantly correlated, according to the analysis's findings, as shown in the study's conclusion above. This suggests that backward vertical integration is a crucial factor that might affect the success of a company. It has the following values for its beta value=.354, T=5.425, P Value =.000. We reject the null hypothesis that backward vertical integration has no meaningful impact on firm performance since the P Value is less than 5% threshold of significance. This result is consistent with other research, including that by Worthen, Tuna, and Scheck in 2009; Wu, Petruzzi, and Chhajed in 2007; and Bonanno in 1986, which discovered that backward vertical integration significantly affects company performance.

According to the results of the analysis, there is also a strong and positive correlation between forward vertical integration and firm performance, which was the second hypothesis that this study evaluated. This implies that forward vertical integration is an important factor that might affect the success of a corporation. Since the P value for this finding is less than 5% of significance and the beta value of this result is B=.330, T=5.065, and P value=.000, we reject the null hypothesis that forward vertical integration has no discernible impact on firm performance. This result corresponds with those of other study findings, such as those by (Mizgier, Jüttner, & Wagner, 2013; Chatfield, Hayya & Cook, 2013; Basole & Bellamy, 2014). They claimed that forward vertical integration significantly influences company performance in their studies.

This study has a number of implications, both managerial and theoretical implication can be deduced from this study. Managerially, this study is of immense importance to the managers of firms if the recommendations are taken into due consideration, the managers and the stakeholders of firms will come out with the decisions and policies that will facilitate the activities of the firms in other to boost their performance. Moreover, the study equally has a theoretical implications as prior plethora of extant literatures were intensively reviewed in this study and that makes a significant contribution to the body knowledge, also the underpinning theory of the study which supported the relationship between backward vertical integration and forward vertical integration was intensively discussed in this study.

However, since this study only focused on vertical integration, subsequent studies may choose to incorporate other variables in their models.

## Conclusion

It is concluded that this study differs from previous studies of integration as it takes a unique approach by examining integration strategies by employing data which is an added value of the analysis in the field of integration. Based on the results of research and data analysis, it is concluded that backward vertical integration has a positive and significant effect on firm performance. This means that the higher the increase in the backward vertical integration variable, the higher the increase in firm organizational performance. Thus, strengthening the backward vertical integration variable can increase the firm performance. Forward vertical integration has a positive and significant effect on the firm performance this means that the higher the increase in the forward vertical integration variable, the higher the firm performance. Thus, strengthening the forward vertical integration strategy of the firm can improve firm performance.

Based on the regression results presented earlier we can suggest the following:

Positive and significant relationship was found between backward vertical integration and firm performance, thus, the study recommended that backward vertical integration strategy and scheme should be the priority of the firm to improve their performance based on the fact that is significant variables that improve firm performance.

The study has also revealed a positive and significant relationship between forward vertical integration and firm performance; therefore, managers should implement forward vertical integration in their strategic plan to enhance their business operation in other to boost their operation to increase firm performance.

## List of abbreviations

Not applicable

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