

The Effectiveness of the use of Backward Integration Strategy in Food and Beverage Manufacturing Firms in South-South Nigeria

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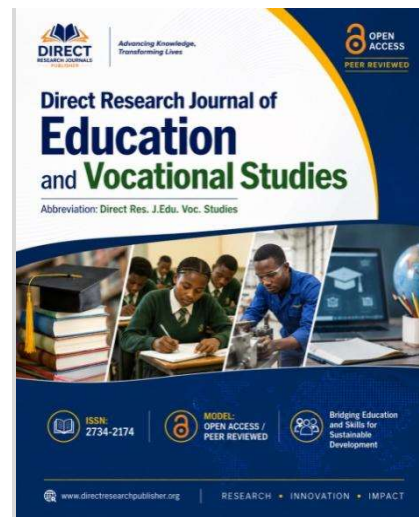
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ABSTRACT

This study examined the relationship between backward integration strategy and the effectiveness of food and beverage manufacturing firms in South-South Nigeria, with effectiveness measured by productivity, sales growth, and profitability. A cross-sectional survey design was adopted. The population comprised 508 managers in selected registered food and beverage manufacturing firms, from which a sample of 224 managers was determined using Taro Yamane's formula. A structured questionnaire was administered, and 188 usable responses were returned. Descriptive statistics were used to summarize the data, while the hypotheses were tested with Pearson's product-moment correlation using SPSS version 23. The results show that backward integration was positively and significantly related to productivity ($r = .823$, $p = .001$), sales growth ($r = .652$, $p = .001$), and profitability ($r = .614$, $p = .001$), with $N = 188$ in each test. The evidence therefore indicates that firms that exercise greater upstream control over critical inputs tend to report stronger operational and financial outcomes. The study addresses a contextual and outcome-measurement gap by providing firm-level evidence from the food and beverage manufacturing sector in South-South Nigeria and by testing productivity, sales growth, and profitability within one empirical model. It concludes that backward integration can strengthen firm effectiveness when the benefits of supply assurance and coordination exceed the capital and managerial costs of internalization. Food and beverage manufacturers should therefore adopt backward integration selectively, based on input criticality, supply risk, asset specificity, and internal capability.

Keywords: Backward integration; food and beverage manufacturing; firm effectiveness; productivity; sales growth; profitability; supply-chain resilience; South-South Nigeria



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INTRODUCTION

Backward integration occurs when a firm assumes ownership or control of activities previously undertaken by upstream suppliers. It may involve acquiring a supplier, establishing a raw material subsidiary, or developing internal production capacity for strategic inputs. The decision is therefore a make-or-buy choice shaped by transaction costs, asset specificity, supply uncertainty, productive capability, and the cost of coordinating additional stages within the firm. Recent evidence confirms that the direction of integration matters in global value chains and that backward integration is particularly relevant where firms seek control over inputs and upstream production (Egger, Erhardt, & Masllorens, 2023). A systematic review also shows that vertical-integration decisions cannot be explained by cost alone; governance costs, capabilities, and supply-chain conditions must be considered together (Beal Partyka & Paiva, 2024).

For food and beverage manufacturers, these considerations are especially important because production depends on the timely availability, quality, and price stability of agricultural and packaging inputs. Recent research links vertical integration to greater control during supply-chain disruptions and improved organizational resilience. However, the benefits may be offset by capital intensity, asset specificity, and managerial complexity (Li, Wang, Wu, & Zhou, 2025; Wu, Zhu, & Xie, 2025). Under uncertainty, integration can also coordinate pricing, stocking, and production decisions across supply-chain stages (Zhang, 2026). The strategic question is therefore not whether backward integration is universally beneficial, but whether upstream control improves measurable firm outcomes in a particular industrial and institutional setting.

This question is material in Nigeria, where food and beverage manufacturers face exchange-rate volatility, infrastructure constraints, high logistics and energy costs, and disruptions in the availability of production inputs. Although earlier studies examined vertical integration in Europe, North America, Asia, and North Africa, their findings are mixed and cannot automatically be generalized to firms in South-South Nigeria. This study evaluates whether backward integration is associated with three apparent dimensions of effectiveness: productivity, sales growth, and profitability among food and beverage manufacturing firms in the region.

Statement of the Problem

Achieving Organizational effectiveness has become a challenging task for these companies as they operate in a harsh economic environment. The food and beverage manufacturing sub-sector is greatly affected by the poor economic climate in Nigeria. Given the high cost of manufacturing in Nigeria, it becomes imperative for food

and beverage manufacturing firms in Nigeria to integrate backwardly to expand their operations, reduce costs, increase productivity, and achieve organizational effectiveness. The researchers argued that a backward integration strategy can help achieve organizational effectiveness. A good number of studies (e.g., Hamdaoui & Bouayad, 2019; Isaksen, Dreyer, 2001; Louca & Panavides, 2016; Shah, Ahmad, Malik & Khan, 2020; Pieri & Zaninotto, 2013; Peyrefitte, Golden & Brice, 2002; Wellstone, 2000) have been conducted on backward integration strategies of business firms. However, most of the studies conducted on backward integration strategies of business firms were carried out in Malaysia, the United States, the Netherlands, Germany, Pakistan, Sweden, Erbil/Iraq, Japan, the United Kingdom (UK), Morocco and Norway, while empirical studies that examined backward integration strategies and effectiveness in food and beverage manufacturing in South-South Nigeria are limited. This has created a gap in the literature that needs to be filled. It is with a view to filling this gap in the literature that this study was prompted.

Objectives of the Study

The main objective of this study is to examine the relationship between backward integration and the effectiveness of food and beverage manufacturing firms in South-South Nigeria. Other specific objectives include:

- i To determine the relationship between backward integration and productivity of food and beverage manufacturing firms in South-South Nigeria.
- ii To ascertain the relationship between backward integration and sales growth of food and beverage manufacturing firms in South-South Nigeria.
- iii To explore the relationship between backward integration and profitability of food and beverage manufacturing firms in South-South Nigeria.

Research Questions

To address the objectives of this study, the following research questions were raised:

- i To what extent does backward integration contribute to the productivity of food and beverage manufacturing firms in South-South Nigeria?
- ii How does backward integration relate to sales growth of food and beverage manufacturing firms in South-South Nigeria?
- iii To what extent does backward integration contribute to the profitability of food and beverage manufacturing firms in South-South Nigeria?

Hypotheses

The following hypotheses were formulated to guide this study:

Ho1. There is no significant relationship between backward integration and productivity of food and beverage manufacturing firms in South-South Nigeria.

H02: There is no significant relationship between backward integration and sales growth of food and beverage manufacturing firms in South-South Nigeria.

H03: There is no significant relationship between backward integration and profitability of food and beverage manufacturing firms in South-South Nigeria.

Significance of Study

The significance of this study cannot be overemphasized. This is because the results of this study would be relevant to food and beverage manufacturing firms, as it would sensitize them to the need to embrace backward integration to reduce costs and achieve organizational effectiveness. The study would be useful to top executives and managers as it would broaden their knowledge of how backward integration can be used to achieve greater productivity, sales growth, and profitability of firms. This information will assist top managers in formulating policies and strategies that will facilitate the practice of backward integration along their supply chain and achieve organizational effectiveness. This study will be relevant to investors as it would sensitize them to the importance of backward integration in achieving organizational effectiveness. The study will be useful to students, lecturers, and research consultants as it would add to the existing stock of knowledge on backward integration, which they can use as reference for their studies.

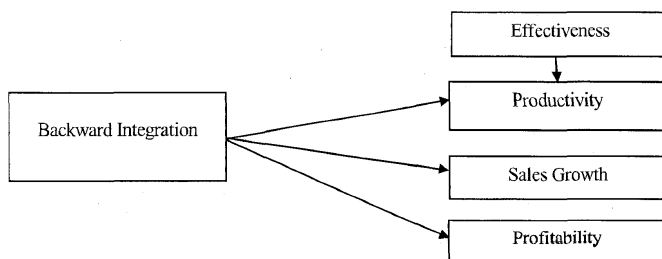


Figure 1: Operational Conceptual Framework

Review of Related Literature

Concept of Backward Integration

Backward integration is a firm's strategy to expand its operations by being the supplier of its own raw materials for production, with a view to avoiding high costs or delays

in the supply of raw materials (Freeland, 2000). Kenton (2021) defined backward integration as a form of vertical integration in which a company expands its role to fulfil tasks formerly completed by other businesses in the supply chain. It occurs when a company buys another company that supplies the products or services needed for production (Kenton, 2021). Forbes and Lederman (2009) described backward integration as a business strategy whereby a company decides to move backward along its supply chain by performing one or two stages of the process. It occurs when a company expands its operations backward along its production path into manufacturing (Ali & Syverson, 2007). In other words, if a company integrates by moving into an area that serves as a supplier, the process is referred to as backward integration Cainelli & Lacobucci, 2014).

In backward integration, the firm creates its own sources of supply, perhaps by establishing a subsidiary company or purchasing an existing supplier Cainelli & Lacobucci, 2014). Williamson, in Hamdaoui and Bouayad (2019), stated that backward integration allows the firm to move from the purchase of inputs to the production of inputs. A typical example of backward integration is when a company buys the company that supplies its business with raw materials. Fan (2000) stated that companies acquire other businesses that supply them with inputs to complete their backward integration strategy. They can also establish their own subsidiary to accomplish the task (Kenton, 2021).

The main reason for backward integration is the desire to increase the dependability of supply or quality of raw materials or production inputs Cainelli & Lacobucci, 2014). Gaynor (2006) noted that companies that implement backward integration try to take over a portion of their supply chain. According to Kenton (2021), a supply chain is a group of individuals, organizations, resources, activities, and technologies involved in the manufacturing and sale of a product. The supply chain begins with the assembling or purchasing of raw materials, and this is followed by the manufacturing process, then the distribution of finished goods to middlemen (wholesalers and retailers), and finally the sale of the finished goods to the end consumers. A typical supply chain showing a backward integration strategy is illustrated in (Figure 2). From (Figure 2), it can be observed that the supply chain begins with the purchasing of raw materials. This stage is followed by the manufacturing process, and then the distribution of finished goods to middlemen (wholesalers and retailers). Finally, retailing of the finished goods to the end users, i.e., consumers, follows. However, if the retailer, who usually buys goods in small quantities directly from the wholesaler and sells in units directly to the consumers, decides to buy the finished products in bulk (large quantities) directly from the manufacturer and then sells in units to the consumer, the retailer can be said to have integrated backward in the channel of distribution or supply chain because he or she is performing the function

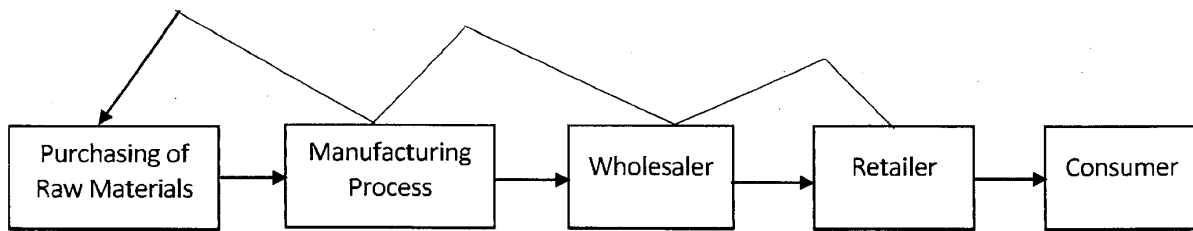


Figure 2: A typical supply chain showing a backward integration Source: Adapted from Hunger & Wheelen (2003).

of the wholesaler. In addition, if the retailer decides to take a further backward step to manufacture the product by himself/herself, he or she can be said to have integrated backward in the supply chain by performing the two stages in the supply chain (manufacturing and wholesaling). However, if the retailer decides to produce the raw materials for manufacturing by himself/herself, the retailer can be described as having implemented a further backward integration since he or she performs all three stages of the supply chain.

Backward integration is not a new business strategy for the food and beverage industry. Many food and beverage manufacturers and retailers have implemented backward integration strategies (Elberfeld, 2002). A typical example of backward integration can be seen in a bakery business owner who buys a wheat farm or a wheat processor. In this case, the retailer (bakery business owner) purchases its manufacturer or manufacturing equipment to enable him or her to manufacture bread by himself/herself, thereby cutting down the intermediary in the supply chain and reducing competition.

Backward integration is considered a business strategy to reduce the cost of raw materials and improve firm efficiency, as opined by Acemoglu et al. (2009). For instance, if a manufacturing company feels that it is paying too much money for raw materials compared to what it would cost to produce its own raw materials or feels that there is always a delay in the supply of raw materials or production inputs, it may decide to integrate vertically in a backward direction. Here, the company integrates backwardly to reduce costs of raw materials and ensure timely delivery of raw materials or production inputs. Desai and Mukheiji (2001) stated that backward integration enables a manufacturing company to control the suppliers of raw materials and inventories.

Contemporary research has broadened the vertical-integration debate beyond the traditional transaction-cost explanation. Egger et al. (2023) distinguish backward from forward integration in global value chains and demonstrate that integration direction reflects different firm and market incentives. Beal Partyka and Paiva's (2024) systematic review of 173 operations and supply-chain studies conclude that production costs, governance arrangements and capability development should be assessed jointly. Their review also identifies a continuing shortage of

representative evidence on the conditions under which integration improves performance outcomes.

More recent studies emphasize disruption risk and resilience. Li et al. (2025) report that vertical integration can reduce transaction costs and strengthen supply-chain control, thereby mitigating exposure to disruptions, although asset specificity can generate additional investment risk. Wu et al. (2025) similarly find that backward integration can improve resilience by reducing the severity of disruption losses and accelerating recovery, but they stress strategic trade-offs between upstream and downstream control. Zhang (2026), using a newsvendor framework, further shows that integration choices under uncertainty affect coordination and operating decisions across supply-chain members. Taken together, these studies support the expectation that upstream control may improve performance, but they also show that effects depend on context, outcome, and governance capability.

Concept of Organizational Effectiveness

Organizational effectiveness refers to the degree to which an organization meets its set goals (Connolly et al, 1980). The American Public Human Services Association (APHSA) (2009) defines organizational effectiveness as a systemic and systematic approach to continuously improve an organization's performance, performance capacity, and client outcomes. According to APHSA, systemic refers to considering an entire system, while systematic implies taking a step-by-step approach. In a nutshell, organizational effectiveness is a step-by-step approach to continuously improving an entire organization (American Public Human Services Association, 2009). Organizations operate in a dynamic and competitive environment, which implies that organizations must strive to achieve effectiveness amid intense competition and a fast-changing environment. Tahsildari and Shahnaei (2015) opined that the effectiveness of an organization is its ability to perform a function with optimal levels of input and output. They further stated that improving organizational effectiveness is a serious concern for any organization as a matter of existence. Achieving organizational effectiveness is the key to business success, and consequently, managers must increase the

efficiency of workers and other productive factors to ensure that effectiveness is obtainable. Zammuto in Tahsildari and Shahnaei (2015) stated that the best way to characterize the effectiveness of an organization is to determine how well it accomplishes its objectives without forcing strains on the authoritative framework and how well it meets the criteria set by the constituencies of an association.

Measures of Organizational Effectiveness

Organizational effectiveness can be measured using various criteria. In this study, organizational effectiveness is measured using productivity, sales growth, and profitability.

Productivity

Organizational productivity is the total output produced by an organization in a given period in relation to the input (resources - material, human, financial, and technology) invested in an economic activity. Bartelsman & Dorns (2000). Akide in Upev et al. (2015) stated that organizational productivity involves striking a balance between all factors of production that will give the greatest result for the smallest effort, the relationship between result (output) and the means employed (input), efficiency and effectiveness, and elimination of waste in all aspects. Organizational productivity requires effective and most efficient use of the resources available within an organization in meeting the specific goals of the organization and needs of the users (Upev et al., 2015).

Organizational productivity is largely dependent on the productivity of individual employees. If the employees in an organization are productive, the organization is more likely to accomplish more in each period. On the other hand, when employees are unproductive, they will take much time to complete their tasks, and the organization will accomplish less despite the huge resources (input) invested in the project (Nawaz & Nawaz, 2012).

Sharma and Sharma (2014) stated that employee productivity is greatly influenced by the amount of time that an employee is physically and mentally present at work and efficiently working towards the achievement of organizational goals. When an employee can accomplish his or her task efficiently, such an employee is said to be productive.

Sales Growth

The concept "sales growth" can be defined as an increase in the quantity or amount of goods sold by a company over a given period. Sales growth of a company can be determined by comparing the number of sales made by the company periodically, usually yearly (Burke, 2005). If the sales made by a company in 2019, for example, is N20m and the number of sales made by the same company in

2020 is N25m, the company can be said to have experienced sales growth of 5million. Roberge (2014) stated that sales growth is usually calculated in percentage and the percentage increase is often referred to as the "sales growth rate." Companies often measure their sales growth rate periodically. Although some companies may determine their sales growth on a monthly, quarterly or yearly basis, evidence showed that small-sized companies measure their sales growth on a daily or weekly basis (Banat & Wandebori, 2012). A company is said to have experienced sales growth if the amount of goods sold this week is N2million and the amount of goods sold last week is N1 million. The additional N1 million is recorded as the sales growth. When a company experiences significant growth in sales, it means more profit for its business, and when the profit for the business increases, the company can then expand its operations and achieve business growth.

Profitability

Profitability can be defined as the amount of money made from the net sales of a company. Reibstein et al (2006) defined profit as the revenue or money earned by a company from its net sales after all other expenses have been deducted. The profit is usually derived from the normal operations of a company and is calculated at the end of the year. Profitability growth therefore refers to the amount in which the profit of a company has increased from year to year (Armstrong & Green 2007). It is obvious that a company is treated as a legal entity separate and different from its owners; hence the profit of a company is ascertained at the end of the accounting year. If the profit made by a company in the year 2019, for instance, is N10 million and the amount of profit made by the company in the following year, being 2020, is N15 million, it means that the company has experienced profitability growth of 5million. Every company, irrespective of the sector it belongs to, wants to increase profitability. Profits are one of the most important criteria used to determine how well a company is doing in the market. It indicates how competitive a company is and determines the financial stability of the company (Maohua, 2009).

Backward Integration and Organizational Effectiveness

Backward integration strategy has the potential to achieve organizational effectiveness. According to Williamson in Hamdaoui and Bouayad (2019), backward integration allows the firm to move from the purchase of inputs to the production of inputs. The backward integration strategy is capital intensive in the sense that it requires a huge sum of money to buy or invest in part of the supply chain. Afendulis and Kessler (2011) stated that companies that adopt a backward integration strategy tend to save costs

and improve efficiency. Tucker and Wilder in Kaiser and Obermaier (2020) posited that backward integration tends to reduce the number of external purchases while leaving sales constant. Backward integration enables a company to control and manage different aspects of the supply chain such as manufacturing, distribution, and sales processes, and achieve organizational effectiveness (Acemoglu et al., 2009). Backward integration enables a manufacturing company to expand business operations backward by being the producer of its own raw materials used for production, and this helps to lower the cost of raw materials, increase productivity, sales, and profit margin, and achieve organizational effectiveness (Gil, 2007).

Forbes and Lederman (2009) opined that backward integration is beneficial to companies that are determined to achieve organizational effectiveness because it enables them to control parts of the supply chain processes to reduce costs and improve their business efficiency. Elberfeld (2002) added that backward integration strategy reduces transportation costs and delivery turnaround times. It also helps companies to reduce disruptions from suppliers that might lead to financial hardship (Woodruff, 2002).

Backward integration strategy enables a company to get its products to consumers quickly without any reason for disruption, expands its economies of scale, lowers costs, increases productivity, and achieves organizational effectiveness (Kaiser, 2018). Lahiri and Narayanan (2013) argued that through backward integration, a manufacturing company can achieve organizational effectiveness by increasing its overall productivity, sales, and profitability since it creates its own source of raw material supply and sells its own brand. Bresnahan and Levin (2008) stated that a company that decides to integrate backwardly has the advantage of controlling some inputs used for the manufacturing of its products.

A good number of companies have used backward integration strategies to achieve organizational effectiveness. This was the strategy used by an automobile company. Ford Motors, in the 1920s. Ford Motors owns Glass Company, Metal Company, as well as Tire Company.

The company controls these three subsidiaries' inputs because they are very important in car manufacturing process. So, the company wants to create a stable supply of these inputs to ensure that the manufacturing process is not disrupted due to high costs of supplying these materials or delays in supplying them. By ensuring regular supply of inputs such as raw materials for production, the company was able to maintain its organizational effectiveness in terms of manufacturing top-quality cars, increasing sales and profitability. This type of integration strategy was also used by other automobile companies such as Toyota and Mercedes that want to minimize costs, increase sales, and achieve organizational effectiveness. These two automobile companies adopted a backward integration strategy by integrating the production of car

inputs or spare parts into their car manufacturing business, and this strategy worked for them to achieve organizational effectiveness. Another typical example of a company that used backward integration strategies to achieve organizational effectiveness is Carnegie Steel Company. This company controlled not only the mills where the steel was made, but also the mines where the iron ore was extracted, the coal mines that supplied the coal, the ships that transported the iron ore and the railroads that transported the coal to the factory, as well as the coke ovens where the coal was coked (Isaksen & Dreyer, 2000).

The company strongly focused on producing talent internally from the bottom rather than purchasing raw materials from other companies. Through the implementation of this backward integration strategy, Carnegie Steel Company was able to minimize costs, increase productivity, sales, profitability, and achieve organizational effectiveness.

The backward integration strategy has not only been proven to be a viable strategy for achieving organizational effectiveness in the automobile and steel sectors, but also multinational oil companies such as Shell Petroleum Development Company (SPDC) and Exxon-Mobile Nigeria Limited have adopted this backward vertical integration strategy to achieve organizational effectiveness.

According to Misund et al. (2012). SPDC and Exxon-Mobile Nigeria Limited are not only involved in the production of crude oil; rather, they are also actively involved in the entire supply chain, from the discovery of crude oil deposits, drilling and extraction of crude oil. transportation of crude oil around the world, refining it into petrol (fuel) and gasoline, to the distribution of the product to company-owned retail filling stations, or finally selling in litres to the final consumers or users.

MTN Nigeria Limited is another good example of a company that has integrated vertically to achieve organizational effectiveness. This telecommunication company has integrated vertically by making its own MTN smartphones, telephone exchange equipment, telephone cables, solar energy, and other supplies. Today, MTN Nigeria Limited has the largest number of customers in Nigeria, as the company has been successful in using a vertical integration strategy to achieve organizational effectiveness.

Backward integration strategy has been proven to be a suitable business strategy for achieving organizational effectiveness. Companies that adopt this strategy feel that their suppliers have too much power over them. For instance, in the case of Ford Motor Company, the executives of the company decided to create subsidiaries that supply key inputs to their vehicles such as metal, glass, and rubber tires.

This strategy gives Ford Motors the assurance that the company's manufacturing process would not be disrupted if suppliers fix higher prices for these essential materials or delay in supplying these materials.

Theoretical Review

This study adopted transaction cost economics theory, which was developed by Coase in 1937 and expanded by Williamson. The theory provides a coherent framework for understanding the determinants of vertical integration in different industries. The core issue of transaction cost economics is that utilizing the market system is not free, as it causes cost for using it, which is called “transaction costs” (Kaiser & Obermaier, 2020). Arrow, Isaksen, and Dreyer (2000) described transaction costs as the cost of organizing the economic system. Hence, the transaction costs of a firm’s activities and market transactions must be compared with the costs of internalization activities, and transactions should only be undertaken within the institutional arrangement (market or firm) that causes the lowest costs (Kaiser and Obermaier, 2020).

Relating the transaction cost theory to this study, the theory guides companies in deciding which activities to integrate and those to be outsourced. Deciding which activities should be integrated or outsourced is a fundamental decision for a firm, i.e., choosing between market or hierarchy or something in between (hybrid) and thereby minimizing transaction costs, as stated by Williamson in Kaiser & Obermaier (2020). Picot and Franck in Kaiser and Obermaier (2020) added that such transactions should be internalized (i.e., vertically integrated) that are characterized by a high degree of asset specificity and uncertainty accompanied by a high degree of frequency; otherwise, a firm should choose the market or a hybrid form.

The choice of alternative depends on minimizing the costs that arise in the presence of transaction-specific investments and uncertainty (Isaksen & Dreyer, 2000). Joskow (1988) identified a wide range of transactions, which range from merely spot market transactions to internal transactions only. Here, transactions are classified based on whether they take place in the firm or across different markets.

Recurring exchanges that involve transactions between specific capital and efficient information processing makes market alternatives more hazardous. The firm provides a suitable alternative because the common ownership of physical capital discourages opportunism between owners, and this forms the basis for efficient information transfer and long-term relationships between the firm and its employees (Isaksen & Dreyer, 2000).

Transaction cost theory emerged based on the risks and uncertainty associated with exploiting the market for the allocation of resources between adjacent stages in the value chain. This motivates firms to engage in “making” instead of “buying” and “using” instead of “selling” (Isaksen et al., 2011). Transaction costs consideration is very important in organizing economic activity and there would be reason for business firms to exist if we could foresee the future perfectly and were not at a cost in negotiating and renegotiating long-term contracts (Azzam & Paguo in

Isaksen et al., 2011). The transaction cost approach focuses on the phenomenon associated with vertical integration as it occurs under conditions of transaction-specific investments, high transaction frequency, and uncertainty (Romme, 1990). However, the main factor that Williamson in Romme (1990),

Profitability

Profitability refers to the amount of profit a company generates from its net sales. Reibstein et al. (2006) define profit as the revenue earned from sales after all expenses have been deducted. Profit is generally generated through a company’s normal operations and calculated at the end of its financial year. Profitability growth, therefore, refers to the increase in a company’s profit from one year to the next (Armstrong & Green, 2007). A company is a legal entity separate from its owners. Consequently, its profit is determined at the end of each accounting year. For example, if a company earns ₦10 million in profit in 2019 and ₦15 million in 2020, its profit increases by ₦5 million. Every company, regardless of its industry, aims to improve profitability. Profit is an important indicator of business performance because it reflects a company’s competitiveness and financial stability (Maohua, 2009).

Backward Integration and Organizational Effectiveness

Backward integration has the potential to improve organizational effectiveness. According to Williamson (2008), as cited in Hamdaoui and Bouayad (2019), backward integration occurs when a firm moves from purchasing inputs to producing them internally. Although this strategy is capital-intensive because it requires substantial investment in part of the supply chain, it can help firms reduce costs and improve efficiency. Afendulis and Kessler (2011) observed that companies that adopt backward integration often achieve cost savings and operational improvements. Similarly, Tucker and Wilder, as cited in Kaiser and Obermaier (2020), argued that backward integration can reduce the number of external purchases while maintaining sales levels.

Backward integration enables a company to control and coordinate important stages of its supply chain, including the production and distribution of inputs. This control can improve organizational effectiveness (Acemoglu et al., 2009). A manufacturing company may integrate backward by producing the raw materials required for its operations. Doing so can reduce input costs, increase productivity, support sales growth, improve profit margins, and enhance overall organizational effectiveness (Gil, 2007).

Forbes and Lederman (2009) argued that backward integration benefits companies seeking to improve organizational effectiveness because it gives them greater

control over supply-chain activities. This control can reduce costs and improve operational efficiency. Elberfeld (2002) further noted that backward integration can lower transportation costs and shorten delivery times. It may also reduce supply disruptions that could expose a company to financial difficulties (Woodruff, 2002). Backward integration can help companies deliver products to consumers more quickly, expand economies of scale, reduce costs, increase productivity, and improve organizational effectiveness (Kaiser, 2018). Lahiri and Narayanan (2013) maintained that manufacturing firms can improve productivity, sales, and profitability by developing their own sources of raw materials and controlling their brands. Bresnahan and Levin (2008) similarly stated that firms that integrate backward gain greater control over the inputs used in production.

Several companies have used backward integration to improve organizational effectiveness. One example is Ford Motor Company, which, during the 1920s, owned companies involved in producing glass, metal, and tires. By controlling these important inputs, Ford sought to ensure a stable supply of materials and prevent production delays caused by price increases or supplier shortages. A reliable supply of inputs enabled the company to maintain production quality, increase sales, and improve profitability. Other automobile manufacturers, including Toyota and Mercedes-Benz, have also integrated the production of selected components into their manufacturing operations to reduce costs and improve performance.

Another example is Carnegie Steel Company. The company controlled not only the mills where steel was produced but also the mines where iron ore and coal were obtained, the ships used to transport iron ore, the railroads that transported coal, and the coke ovens where coal was processed (Isaksen & Dreyer, 2000). By controlling several stages of its supply chain, Carnegie Steel was able to reduce costs, improve productivity, increase sales, and enhance profitability.

Backward integration has also been adopted in the oil and telecommunications industries. Multinational oil companies such as Shell Petroleum Development Company and ExxonMobil Nigeria Limited have participated in several stages of the value chain, including exploration, drilling, extraction, transportation, refining, and distribution (Misund et al., 2012). Similarly, MTN Nigeria Limited has developed or supplied several inputs and technologies used in its telecommunications operations. These examples demonstrate how vertical integration can help firms control critical resources, improve coordination, and strengthen organizational effectiveness.

In general, backward integration is suitable for firms that want to reduce their dependence on suppliers. For example, Ford Motor Company established subsidiaries that supplied essential vehicle inputs such as metal, glass, and rubber. This arrangement reduced the risk that

suppliers would increase prices or delay deliveries and helped protect the continuity of the company's manufacturing operations. Asset specificity is the conditions of assets or transaction specificity. Under the condition of transaction-specific investments, a company investing in transaction-specific assets will be vulnerable to opportunistic behaviour of its suppliers or buyers. Kaiser and Obermaier (2020) noted that most of a firm's activities are characterized by a different degree of assets specificity. If a firm decides to integrate or outsource all of these activities, then the level of transaction costs would not be as low as possible, as some activities should be outsourced (those characterized by low asset specificity) while others should be internalized (those characterized by high asset specificity) (Williamson, in Kaiser & Obermaier, 2020).

The transaction cost economics theory emphasizes that vertically integrated firms will have lower costs than firms that buy in an open market (Isaksen & Dreyer, 2000). The theory explains that the firm will integrate when the costs of transacting over markets outweigh internal costs of management (Levy, in Isaksen & Dreyer, 2000). Levy in Isaksen and Dreyer (2000) stated that factors such as internal costs of management, transaction-specific investments, flow economics, small numbers bargaining problems and conditions of uncertainty greatly impact on the degree of vertical integration within an industry.

The transaction cost view plays an important role in understanding the economic costs/ benefits of vertical integration (Whinston, 2001; Williamson, 2005; McVroe, 2009). Vertical integration strategy aims to eliminate or reduce the selling and buying costs incurred when two separate companies own two stages of the supply chain and perhaps reduce physical handling costs (Rothaermel et al., 2006). Williamson (2005) noted that a company that produces or manufactures integrated circuits and finished goods operates with no or little salesforce, market research, sales promotion, and advertising. Another manufacturing company that produces and sells these integrated circuits and finished goods to independent customers would also need to perform these activities.

Empirical Review

Some related empirical studies have been conducted on backward integration and organizational effectiveness. For instance, Hamdaoui and Bouayad (2019) investigated the determinants and directions of vertical integration on the performance of Moroccan manufacturing firms. Their study employed a qualitative research approach and a descriptive survey research design, where data were collected from managers in the Moroccan manufacturing industry using a questionnaire. The data collected from the respondents were analysed statistically using percentage and frequency analysis, while the hypotheses were tested using t-tests and regression analysis. The findings showed that the degree of vertical integration is correlated with

market factors. The study also revealed that the degree of integration of industries is explained by the basic conditions and structures of the industrial sector, particularly the degree of capital intensity, degree of concentration, economies of scale, the level of barriers to entry, and rate of sales growth. The study also reported a negative relationship between vertical integration and profitability of industrial firms.

Isaksen et al. (2000) carried out a study to determine the impact of vertical integration on performance in the Norwegian fish processing industry. The researchers adopted a cross-sectional research design and used a structured questionnaire to collect data from general managers in the fishery industry. The data collected were analysed using descriptive statistics such as percentages and frequency tables, mean, and standard deviation, while the formulated hypotheses were tested using Ordinary Least Squares (OLS) regression and the Pearson Product Moment Correlation Coefficient. The findings showed a variation in the vertical integration-performance relationship across the fish processing industry in Norway. The study reported that vertical integration had reverse but insignificant effects on the two measures of profitability (return on investment and profit margin). The study revealed that vertical integration seems to increase profit margins while return on investment decreases. The study also revealed that the use of vertical integration is not an easy strategy to comprehend due to the multiple ways of organizing the seller- buyer relationship and the variety of firms operating within this geographic location.

Louca and Panavides (2016) examined the impact of vertical integration on inventory turnover and operating performance in Pakistan. The researchers developed a causal model and used it to determine the effects of vertical integration on three types of inventories, namely: raw materials inventory, work in progress, and finished goods. Their model was used to test the relationship between vertical integration and performance measures (cost reduction, return on sales, and profit margin). The result revealed that vertical integration has a positive impact on cost reduction, return on sales, and profit margin.

Shah et al. (2020) explored the impact of vertical integration and outsourcing decisions on firm performance. The researchers adopted the descriptive survey research design and the qualitative research approach. Data were collected from different procurement managers and operational managers of companies working in the KPK. The researchers used a structured interview questionnaire to elicit data from the respondents. The results of the interview conducted among procurement managers and operational managers of companies working in the KPK showed that outsourcing is the best strategy to improve organizational performance rather than vertical integration strategies.

Pieri and Zaninotto (2013) carried out research to determine the relationship between vertical integration and

efficiency in the Italian machine tool industry. The researchers adopted the survey research design in which data were collected from a novel panel dataset comprising 500 machine tool firms in Italy. The researchers applied two equations and instrumental variables for the two directions of causality. After analysing the data, the researchers found that the self-selection mechanism of the most efficient firms in vertically integrated structures, while organizational mode does not have any effect on firms' efficiency.

Peyrefitte et al. (2002) empirically examined the relationship between vertical integration and economic performance of manufacturing firms. Their study adopted an exploratory research design and a qualitative research approach where a structured questionnaire was used to collect data from 53 managers in 20 manufacturing companies that adopt vertical integration in the Netherlands. The data collected were analyzed statistically using percentage and frequency tables, bar charts, and pie charts, while the hypotheses were tested using the Pearson Product Moment Correlation Coefficient. After analysing the data collected, the researchers found a significant positive relationship between vertical integration and the profitability of manufacturing firms. The study also found a significant positive relationship with cost reduction of manufacturing firms.

Wellstone (2000) examined the relationship between vertical integration and economies of scale in product information distribution. The researcher adopted the correlational survey research design and the quantitative research approach where data were collected from managers of automobile companies in United States of America (USA). The researcher used a structured questionnaire to collect data from the respondents. The data collected were analyzed using descriptive statistics such as percentage and frequency tables, graphs, charts, mean, and standard deviation, while regression analysis and ANOVA were used to test the hypotheses. The findings showed a positive and significant relationship between relationship economies and information gathering about products. The study also found a significant relationship between vertical integration and product information distribution. The study, however, concluded that vertical integration significantly enhances economies of scale in product information distribution.

Gap in Reviewed Literature

The literature reveals four related gaps. First, much of the empirical evidence comes from developed or non-Nigerian markets, limiting its applicability to the institutional and supply conditions confronting manufacturers in South-South Nigeria. Second, several studies treat vertical integration as a general construct without isolating backward integration. Third, many studies examine a single financial or operational outcome, making it difficult to determine whether upstream integration has consistent

associations across productivity, sales growth, and profitability. Fourth, recent reviews continue to call for context-specific evidence on the contingent performance effects of vertical integration (Beal Partyka & Paiva, 2024).

This study fills these gaps by focusing specifically on backward integration, using firm-level survey evidence from food and beverage manufacturers in South-South Nigeria, and testing its relationships with three complementary measures of effectiveness in the same study. Its contribution is therefore contextual, sectoral, and measurement based. The results do not establish causality because the design is cross-sectional and correlational, but they provide region-specific evidence that can guide later longitudinal, panel-data or quasi-experimental research.

METHODOLOGY

This study adopted the survey research design. The study population consisted of all seventy (70) registered food and beverage manufacturing firms in the South-South Geopolitical Zone of Nigeria (South-South Nigeria Directory Website, www.directory.org.ng). The seventy (70) registered food and beverage manufacturing firms were spread across the six States in the South-South Geopolitical Zone, namely Akwa Ibom State, Cross River State, Delta State, Edo State, Bayelsa State, and Rivers State. However, the accessible population was limited to thirty (30) selected food and beverage manufacturing firms in South-South Nigeria. The population consisted of managers of food and beverage manufacturing firms in South-South Nigeria. The managers include top-level managers, middle-level managers, and lower-level managers. A population of 508 managers (comprising 99 top-level managers, 168 middle-level managers, and 241 lower-level managers) was identified in the 30 selected food and beverage manufacturing firms in South-South Nigeria (Source: HR Department of the Selected Companies). A sample size of 224 managers was used for the study. Taro Yamane's formula was used to determine the sample size. The main instrument used for data collection was a questionnaire. The questionnaire was structured on a 5-point Likert-type scale, namely: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD). The validity of the instrument was determined through face and content analysis, while its reliability was tested using Cronbach Alpha reliability test method. The questionnaire was administered to the respondents (managers) of the selected food and beverage manufacturing firms in South-South Nigeria. A total of 224 questionnaires were administered, and 188 usable copies were returned, giving a response rate of 83.9%. The data were analysed using descriptive statistics, while the hypotheses were tested using the Pearson Product Moment Correlation Coefficient (r). The r

value was computed using the SPSS software program version 23.

RESULTS

The data collected on backward integration were correlated with the data obtained on productivity, sales growth, and profitability of food and beverage manufacturing firms in South-South Nigeria. The analysis was done with the aid of the SPSS software program version 23.0. The results of the correlation analysis are presented in Tables 1-3. Table 1: Backward integration had a very strong positive and statistically significant relationship with productivity ($r = .823$, $p = .001$, $N = 188$) for each correlation. The significance level; the prespecified significance level is $\alpha = .01$. Table 2: Backward integration had a strong positive and statistically significant relationship with sales growth ($r = .652$, $p = .001$, $N = 188$). Table 3: Backward integration had a strong positive and statistically significant relationship with profitability ($r = .614$, $p = .001$, $N = 188$).

Table 1: Results of bivariate analysis between backward integration and productivity of food and beverage manufacturing firms.

Hypothesis	Variables correlated		Pearson r	p value	N	Decision
H01	Backward integration productivity	and	.823**	.001	188	Reject H01
H02	Backward integration sales growth	and	.652**	.001	188	Reject H02
H03	Backward integration profitability	and	.614**	.001	188	Reject H03

Note. ** Correlation is significant at the .01 level (two-tailed). SPSS convention would ordinarily report $p = .001$, not "significant at the .001 level."

Source: SPSS-Generated Output, 2025

Table 2: Results of bivariate analysis between backward integration and sales growth of food and beverage manufacturing firms.

		Backward Integration	Sales Growth
Pearson Integration	Backward Correlation Coefficient	1.000	.652**
(r)	Sig. (2-tailed)	-	.001
	N	188	188
Sales Growth	Correlation Coefficient	.652**	1.000
	Sig. (2-tailed)	.001	-
	N	188	188

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

*Correlation is significant at the 0.05 level (2 tailed)

Source: SPSS-Generated Output, 2025

Table 3: Results of bivariate analysis between backward integration and profitability of food and beverage manufacturing firms.

		Backward Integration	Profitability
Backward Pearson Integration (0	Correlation Coefficient	1.000	.614**
	Sig. (2-tailed)		.001
	N	188	188
Profitability	Correlation Coefficient	.614**	1.000
	Sig. (2-tailed)	.001	
	N	188	188

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

*Correlation is significant at the 0.05 level (2-tailed)

Source: SPSS-Generated Output, 2025

DISCUSSION

The first result shows a very strong positive relationship between backward integration and productivity ($r = .823$, $p = .001$). This is the largest of the three coefficients and suggests that upstream control is most closely associated with operational output. The finding is consistent with the coordination and supply-assurance mechanisms emphasized in contemporary vertical-integration research: internal control of critical inputs can reduce disruption, improve information flow, and permit closer alignment of procurement and production (Beal Partyka & Paiva, 2024; Li et al., 2025). H01 is therefore rejected.

The second result shows a strong positive relationship between backward integration and sales growth ($r = .652$, $p = .001$). A plausible interpretation is that reliable input availability supports production continuity and product availability, which may enable firms to meet demand and sustain sales. This interpretation accords with evidence that the direction of integration shapes firms' access to, and control over stages of global value chains (Egger et al., 2023) and that backward integration can accelerate recovery from systemic supply interruptions (Wu et al., 2025). H02 is rejected.

The third result shows a strong positive relationship between backward integration and profitability ($r = .614$, $p = .001$). The association is positive but weaker than those for productivity and sales growth, possibly because the financial gains from reduced procurement and disruption costs may be partly offset by the fixed investment, managerial burden, and asset-specific risk created by internalization (Li et al., 2025). This result supports H03's rejection and reinforces the need for selective rather than indiscriminate integration. Zhang's (2026) uncertainty-based model similarly indicates that the value of integration depends on the operating environment and the coordination choices available to supply-chain members. Overall, the findings support transaction cost economics: firms may benefit from internalizing upstream activities when market contracting, uncertainty, and supply dependence are costly. Nevertheless, correlation does not

prove that backward integration caused the reported outcomes. Reverse causality is possible because more productive and profitable firms may possess greater resources to integrate. Common-method bias is also possible because the predictor and outcomes were measured through the same survey instrument.

Finally, it was discovered that backward integration has a strong positive and significant relationship with the profitability of food and beverage manufacturing firms in South-South Nigeria. Hence:

- Backward integration is very strongly and positively associated with productivity ($r = .823$, $p = .001$).
- Backward integration is strongly and positively associated with sales growth ($r = .652$, $p = .001$).
- Backward integration is strongly and positively associated with profitability ($r = .614$, $p = .001$).
- Productivity has the strongest association, followed by sales growth and profitability.
- All three null hypotheses are rejected at the 1% significance level; the results establish association, not causation.

Conclusion

This study explored backward integration and the effectiveness of food and beverage manufacturing firms in South-South Nigeria. The empirical results of this study confirmed this as backward integration was found to have a significant relationship with the productivity of food and beverage manufacturing firms in South-South Nigeria. The study also found a significant relationship between backward integration and sales growth of food and beverage manufacturing firms in South-South Nigeria. The study also discovered a significant relationship between backward integration and profitability of food and beverage manufacturing firms in South-South Nigeria. Based on these findings, it is concluded that backward integration significantly enhances the effectiveness of food and beverage manufacturing firms in South-South Nigeria.

Recommendations

The following recommendations are provided for this study:

- That food and beverage manufacturing firms in South-South Nigeria should adopt a backward integration strategy as it would enhance their effectiveness in terms of achieving their set goals and objectives.
- That food and beverage manufacturing firms in South-South Nigeria, especially those that are experiencing low productivity, should integrate backwardly along their supply chain as it would expand their business operations and increase their productivity.

- iii. That food and beverage manufacturing firms in South-South Nigeria, especially those that are experiencing shortages in the supply of raw materials, should embrace backward integration by becoming the supplier of their own raw materials, as it would not only ensure smooth flow of the production process but would also increase the sales volume of their firm.
- iv. That food and beverage manufacturing firms in South-South Nigeria should integrate backwardly along their supply chain network, as it would increase the profitability of their firm.
- v. Finally, it is recommended that food and beverage manufacturing firms in South-South Nigeria should exploit the market opportunities in the supply chain network by integrating backwardly, as it would facilitate business growth.

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