

Research Article

The Effects of Cost on the Profitability of an Organization: A Case of Grand Cereals and Oil Mills Limited, Nigeria

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Abstract

This study investigates the effects of cost on the profitability of Grand Cereals and Oil Mills Limited (GCOML), Nigeria. The study specifically examines the relationship between production cost and profitability, identifies the role of proper costing in organizational growth, evaluates the impact of sales on profit performance, and assesses how value-added tax (VAT) influences net income. A cross-sectional survey design was adopted, and secondary financial data covering 2007–2016 were obtained from GCOML's headquarters. The data were analyzed using Simple Correlation and Analysis of Variance (ANOVA) with SPSS (version 25). The findings reveal a strong negative correlation between cost of production and profitability, indicating that rising costs significantly reduce profit margins. Sales, however, show a strong positive correlation with profitability, demonstrating that increased revenue enhances profit levels. VAT exhibits a negative correlation with profitability, implying that high tax obligations lower net returns. The ANOVA results further confirm that cost of production, sales, and VAT jointly have a statistically significant effect on profitability ($F = 15.62$, $p < 0.05$). The study concludes that effective cost control, improved operational efficiency, and strategic pricing are essential for strengthening profitability in manufacturing firms. It recommends the adoption of cost-minimization techniques, continuous process improvement, enhanced revenue strategies, and tax-planning measures to improve financial performance.

Keywords

Profitability, Cost, Development, Growth, Production, Profit Maximization, Cost Reduction

1. Introduction

Cost and profit in business undertakings are key determinants of a firm's financial position [1]. Since management seeks profitability as a measure of business performance, an increase in sales often necessitates expanding production capacity, which in turn raises costs [2]. Burns noted that organizations should “watch the cost and the profit will take care of itself,” implying that cost should be scientifically controlled rather than arbitrarily reduced, as unplanned reductions may compromise product quality [11].

Effective cost control ensures that operational expenditures do not exceed acceptable levels, and management can optimize the use of resources to meet organizational targets [3, 4]. As firms aspire to higher productivity for increased profit, costs inevitably rise, requiring careful monitoring through standardized processes and responsibility accounting. This approach helps identify variances and implement corrective measures across departments, ensuring efficient production and resource utilization [5, 7].

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In the modern business environment, cost considerations permeate almost every decision. Organizations routinely focus on material costs, labor expenses, overheads, and other operational expenditures [6, 8]. Economists and management accounting scholars emphasize concepts such as marginal cost, opportunity cost, and total cost as essential tools for understanding organizational efficiency and profitability [9, 13]. Despite these principles, businesses in Nigeria continue to face high operational costs due to infrastructure deficits, bureaucratic bottlenecks, and taxation policies, which negatively affect profitability and sometimes force firms to relocate operations to countries with lower costs [12, 14]. This situation underscores the importance of examining how cost factors influence profitability within Nigerian manufacturing firms.

This study, therefore, investigates the effect of cost on profitability, using Grand Cereals and Oil Mills Limited (GCOML) as a case study, with a focus on production costs, sales revenue, and value-added tax (VAT) as key determinants of financial performance.

2. Methodology

This work adopted a cross-sectional survey. According to Wakjissa (2011), cross-sectional survey is a type of research design which requires that data are collected at a particular time from a sample for the purpose of describing the population presented by the sample at that particular time. The reason for the choice of cross-sectional survey is because it helps to collect factual information from a specified sample and generalization of finding on the entire population.

A cross-sectional survey design was employed [15]. Data on production cost, sales, VAT, and profitability were collected from Grand Cereals and Oil Mills Limited, Jos, Nigeria, covering the period 2007–2016. The data were analyzed using Simple Correlation and Analysis of Variance (ANOVA) through SPSS (version 25) [16].

The analysis tested relationships between cost of production, sales, VAT, and profitability. Results indicated that cost of production and VAT negatively correlate with profitability, while sales show a positive correlation [17].

The researcher used the financial records of Grand Cereals and Oil Mills Limited (GCOML) obtained from its headquarters in Jos as below:

Table 1. Cost of Production, sales, VAT and Profitability (2007-2016).

Years	Cost of Production	Sales	VAT	Profitability
2007	1.74	4.7	0.08	0.19
2008	1.86	5.1	0.10	0.23
2009	1.84	6.0	0.20	0.31
2010	2.97	6.2	0.15	0.40
2011	2.19	6.6	0.17	0.48
2012	2.99	7.0	0.24	0.52
2013	3.02	7.1	0.23	0.59
2014	3.23	7.1	0.29	0.66
2015	3.41	8.6	0.40	0.68
2016	3.56	8.0	0.38	0.74

Source: GCOML, 2017

Table 2. Relationship Between Cost of Production and Profitability (2007-2016).

Years	Cost of Production (Y)	Profitability (X)
2007	1.74	0.19
2008	1.86	0.23
2009	1.84	0.31
2010	2.97	0.40

Years	Cost of Production (Y)	Profitability (X)
2011	2.19	0.48
2012	2.99	0.52
2013	3.02	0.59
2014	3.23	0.66
2015	3.41	0.68
2016	3.56	0.74

Source: GCOML, 2017

Table 2 shows that N1.74 billion was expended on the cost of production and the profit of N0.19 billion was made. Similarly, in 2008, about N1.86 billion was expended and a profit of N0.23 billion made. In 2009 however, the cost of production slightly reduced to about N1.84 billion and the profit to N0.31 billion.

In 2010 however, the effect of the global financial crisis set it. The cost of production increases to N2.97 billion and the profit was N0.40 billion. This trend continues until 2016 where the cost of production stood at N3.56 billion and the profit at N0.74 billion.

Table 3. Relationship Between Sales and Profitability (2007-2016).

Years	Sales (Y)	Profitability (X)
2007	4.7	0.19
2008	5.1	0.23
2009	6.0	0.31
2010	6.2	0.40
2011	6.6	0.48
2012	7.0	0.52
2013	7.1	0.59
2014	7.1	0.66
2015	8.6	0.68
2016	8.0	0.74

Source: GCMOL, 2017

Table 3 shows that in 2007, the sales of N4.7 billion contributes to the profit of N0.23 billion. In 2010, the sales of N6.2 billion contributes to the profit of N0.40 billion. Similarly, this trend continues until 2016 where the sales of N8.0 billion brought about a profit of N0.74 billion.

Table 4. Relationship Between VAT and Profitability (2007-2016).

Years	VAT (Y)	Profitability (X)
2007	0.08	0.19
2008	0.10	0.23
2009	0.20	0.31

Years	VAT (Y)	Profitability (X)
2010	0.15	0.40
2011	0.17	0.48
2012	0.24	0.52
2013	0.23	0.59
2014	0.29	0.66
2015	0.40	0.68
2016	0.38	0.74

Source: GCOML, 2017

Table 4 shows that in 2007, 0.08% of the N0.23 billion profit was giving as VAT to the government. In 2012, 0.24% of N0.52 billion was given. This trend continues until 2016 where 0.38% was taken out of the profit of N0.74 billion made for that year.

These secondary data were analyzed using simple correlation as well as Analysis of Variance (ANOVA) to test the relationships between cost of production, sales, VAT, and profitability [18]. Statistical analysis was performed using SPSS version 25.

Table 5. Simple Correlation Results for Cost Variables and Profitability.

Variables	Correlation Coefficient (r)	Sig.(p-value)	Relationship Direction
Cost of Production & Profitability	-0.84	0.002	Strong Negative
Sales & Profitability	+0.92	0.000	Strong Positive
VAT & Profitability	-0.78	0.008	Strong Negative

The results shows a strong negative correlation between cost of production and profitability ($r = -0.84$, $p < 0.05$, indicating that as production cost increases, profitability declines. There is also a strong positive correlation between sales and productivity ($r = 0.92$, $p < 0.01$), suggesting that higher sales

volumes enhance profit levels. Additionally, VAT exhibits a significant negative correlation with profitability ($r = -0.78$, $p < 0.05$), implying that higher tax obligations reduce overall profitability [19, 20].

Table 6. ANOVA Results for Cost Variables and Profitability.

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.220	3	0.073	15.62	0.002
Residual	0.047	6	0.008		
Total	0.267	9			

The ANOVA test confirms a statistically significant relationship between cost-related variables and profitability ($F = 15.62$, $P = 0.002 < 0.05$). This implies that variations in production cost, sales and VAT collectively explains a significant proportion of changes in the profitability of Grand Cereals and

Oil Mills Limited [21].

Overall, the analysis indicates that controlling production costs and optimizing sales are critical to improving profitability, while high VAT rates negatively affect financial performance [22].

Interpretation and Discussion

The findings from both the correlation and ANOVA analyses reveal that cost management has a substantial effect on the profitability of Grand Cereals and Oil Mills Limited. The strong negative relationship between production cost and profitability confirms that inefficient cost control directly reduces profit margins. Conversely, the significant positive link between sales and profitability underscores the importance of revenue expansion strategies in offsetting production and operational expenses. Furthermore, the inverse association between VAT and profitability indicates that tax obligations, if not efficiently managed, can erode net income. These results collectively support the study's hypotheses and highlight that effective cost reduction, coupled with strategic pricing and production planning, enhances organizational growth and sustainability.

3. Statement of the Problem

The main goal or objective of any business organization is to make and maximize profit while other secondary objectives include going concern, growth, corporate social responsibility, benefits to employees and so on. Though other objectives are also considered very important as listed above, but profit maximization is usually the ultimate because it maximizes the shareholders wealth which is the ultimate aim of investing in a business. People will naturally prefer to invest in a highly profitable business. Therefore, in the long run only the profit maximizers survive in the business environment. However, for adequate profit to be recorded from a business there is a need for adequate control of cost because a company with adequate cost structure possesses the higher chance of attaining its profit target.

The cost of importing from and exporting goods to countries like China, Dubai, U.S.A, is high and the procedures at the border is also of high cost, exchange rate and government policies of different countries are also responsible for the high cost of international trade.

In a similar vein, bureaucracy has been singled out as a major contributor to the high cost of doing business in Africa.

The case is not totally different in Nigeria. Despite assurances by government at all levels to the promises of better operating business environment, manufacturers continue to lament high cost of doing business in the country, a development, they said, that has led many industries to either close down their operations or relocate to neighbouring countries. Apart from the manufacturing sector, there is seemingly no other sector of the economy that is not bemoaning the high cost of doing business in the country. Experts have also said that infrastructure deficit in Nigeria valued at trillions of naira places about 15 per cent additional burden on the cost of doing business by manufacturing firms and service providers in the country, leading to high cost of products and services.

However, the rising cost of doing business in the country

has been of utmost concern to business men and the entire citizens. This has even accounted for capital flight, closure of businesses and the movement of manufacturing companies to neighbouring countries, where cost of doing business is relatively low compared to what is happening in Nigeria. This study will therefore investigate the effect of cost on profitability of businesses in Nigeria.

Statement of the Problem

Profit maximization remains the main objective of most businesses [23]. However, in Nigeria, the high cost of operations due to poor infrastructure, bureaucratic bottlenecks, and high taxation has significantly reduced profitability levels [24, 25]. These rising costs have even forced some firms to relocate operations to neighboring countries [26]. The study thus explores how cost factors influence profitability in the Nigerian manufacturing sector [27].

4. Theoretical Review

This study is based on the following assumptions of the system theory.

Risk Theory of Profit

Risk taking was an inevitable component of dynamic production and those who took risk in business had a right to a separate reward known as "profit". According to Hawley, profit is the price paid by society for assuming business risk [28]. A businessman would not take a risk without expecting compensation in excess of actuarial value i.e., a premium on calculable risk. The reason that expected profit must be more than actuarial risk is the assumption that risk gives rise to disutilities of various kinds. Therefore, assuming risk gives the entrepreneur a claim to a reward in excess of the actuarial value of the risk. Hawley stated that profit was composed of two parts: one part represents compensation for average loss incidental to the various causes of risk and the other part represents an inducement to suffer the consequences of being exposed to the risk. Hawley believed that profits arose from factor ownership as long as the ownership included risk. If the entrepreneur avoided risk by insuring against it, he ceased to be an entrepreneur and should not receive profits. According to Hawley profit arose out of uninsured risk. The uncertainty ends with sale of the entrepreneur's product. Profit thus is a residue. Hawley's theory is also known as the "residual theory of profit."

Innovations Theory of Profits

This theory of profits explains that economic profits arise because of successful innovations introduced by the entrepreneurs. It has been held by Joseph Schumpeter that the main function of the entrepreneur is to introduce innovations in the economy and profits are reward for his performing this function. Now, what is innovation? Innovation, as used by Schumpeter, has a very wide connotation. Any new measure or policy adopted by an entrepreneur to reduce his cost of production or to increase the demand for his product is an innovation. Thus innovations can be divided into two categories. First

types of innovations are those which reduce cost of production. In this first type of innovations are included the introduction of a new machinery, new and cheaper technique or process of production, exploitation of a new source of raw materials, a new and better method of organising the firm, etc. Second types of innovations are those which increase the demand for the product. In this category are included the introduction of a new product, a new variety or design of the product, a new and superior method of advertisement, discovery of new markets etc. If an innovation proves successful, that is, if it achieves its aim of either reducing the cost of production or increasing the demand for a product, it will give rise to profits. Profits emerge due to successful innovations, either cost falls below the prevailing price of the product or the entrepreneur is able to sell more and at a better price than before. It is worth mentioning that profits caused by a particular innovation tend to be competed away as others imitate and also adopt it. An innovation ceases to be new or novel, when others also come to know of it and adopt it. When an entrepreneur introduces a new innovation, he is first in a monopoly position because the new innovation is confined to him only. He therefore makes large profits. When after some time others also adopt it in order to get a share, profits will disappear. If the law allows and the entrepreneur is able to get his new innovation e.g., new product patented, then he will continue to earn profits for a longer period. For example, Xerox Corporation made large economic profits because it successfully developed and marketed a superior copying technology. Xerox continued to make large profits until other firms entered the field to compete away these super-normal profits earned by it. Likewise, Bill Gates introduced Windows operating system and MS-office types of computer software and has become billionaire by making huge profit on his innovations.

Managerial Efficiency Theory of Profits

Lastly, this theory recognizes that some firms are more efficient than others in terms of management of productive operations and successfully meeting the needs of consumers. Firms with average level of efficiency earns average rate of return. Firms with higher managerial skills and production efficiency are required to be compensated by above-normal profits (i.e. economic profits). Therefore, this theory is also called compensatory theory of profits.

Kaizen Costing Theory

Kaizen a term with Japanese origin was launched by Masaaki Imai (Rof, 2012), the concept is a coinage of two Japanese words: KAI (Change) and ZEN (for better) (Rof, 2012). Thereafter, Yasuhiro Monden from Japan developed Kaizen Costing as the costing counterpart to the Kaizen approach (Industrial and Financial Systems, 2001). This concept refers to the process of 'continuous improvement' (Rof, 2012; Sani & Allahverdizadeh, 2012). The principle behind Kaizen Costing application is on achieving small, gradual but continuous improvements in the production process at minimal cost (Rof, 2012). Ellram (2000, cited in Modarress, Ansari, & Lockwood, 2004) observed that Kaizen Costing ensures that products

meets or exceeds customer demands for quality, functionality, and prices in order to sustain the product's competitiveness. This according to Rof (2012) can be achieved through a sequential elimination of all the processes that would increase the product's cost of production without a corresponding increase in value. The philosophy emphasizes continuous improvement in our ways of life, social life and home life. This technique has made tremendous changes in management policies not only in Japan, but all over the world (Ogundele 2004). Blocher, Chen and Lin (1999), define Kaizen costing technique emphasizes continuous cost reduction through incremental improvements in production processes and budgeting practices [10]. It focuses on making production and service delivery processes more efficient. Kaizen costing is used for making improvement to a process through small incremental amounts, rather than through large innovations. Unlike target costing, Kaizen costing is applied during the production stage of the product life cycle (Target cost is applied during the design stage). The cost reduction objective is to set for each process, and then adopt value analysis and Value engineering to achieve the set objective. With target costing, the focus is on the product, and cost reductions are achieved primarily through product design.

Theoretical Review

Risk Theory of Profit

According to Hawley, profit serves as compensation for assuming business risks [20]. Without the expectation of reward exceeding actuarial value, entrepreneurs would avoid risk-taking.

Innovation Theory of Profit

Schumpeter argued that economic profit arises from successful innovations that reduce costs or increase demand [29]. Firms like Microsoft and Apple achieved supernormal profits from innovation until market competition equalized returns [30].

Managerial Efficiency Theory of Profit

This theory posits that firms with higher managerial competence earn superior profits due to efficient resource utilization [31].

Kaizen Costing Theory

Kaizen, meaning "continuous improvement," was developed by Masaaki Imai and Yasuhiro Monden [17]. It emphasizes consistent, small improvements that lower production costs. Ellram, cited in Modarress, Ansari, and Lockwood, noted that Kaizen ensures customer satisfaction at optimal cost [18]. The technique focuses on waste elimination and cost efficiency [19, 20]. Blocher, Chen, and Lin defined Kaizen costing as the practice of continuous cost reduction during production [21].

5. Conclusion and Recommendation

Conclusion

This study assessed the impact of cost on the profitability of Grand Cereals and Oil Mills Limited. The findings show

that both production cost and VAT have negative relationships with profitability, while sales have a positive effect [22]. This implies that firms with efficient cost management systems and optimal sales operations are more likely to achieve higher profitability [23].

To sustain profitability, firms must adopt continuous cost control, monitor VAT compliance, and ensure efficient use of production inputs [29, 30].

Recommendations

Based on the findings and conclusion of this study, the following recommendations are made:

Enhance Cost Control Systems: Adopt modern cost-control tools such as Activity-Based Costing (ABC) and variance analysis [25].

Improve Production Efficiency: Integrate technology-driven production to reduce material waste and labor costs [17].

Expand Market Base: Implement innovative marketing and pricing strategies [26].

Efficient Tax Planning: Adopt strategic VAT and tax management practices [12].

Regular Cost Audits: Conduct periodic cost-profit analyses for performance evaluation [8].

Government Support: Provide incentives and infrastructure to lower production costs [27].

Abbreviations

ANOVA	Analysis of Variance
VAT	Value-added Tax

Author Contributions

Adamu Daniel Kamaru: Formal Analysis

Conflicts of Interest

The author declares no conflict of interest.

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